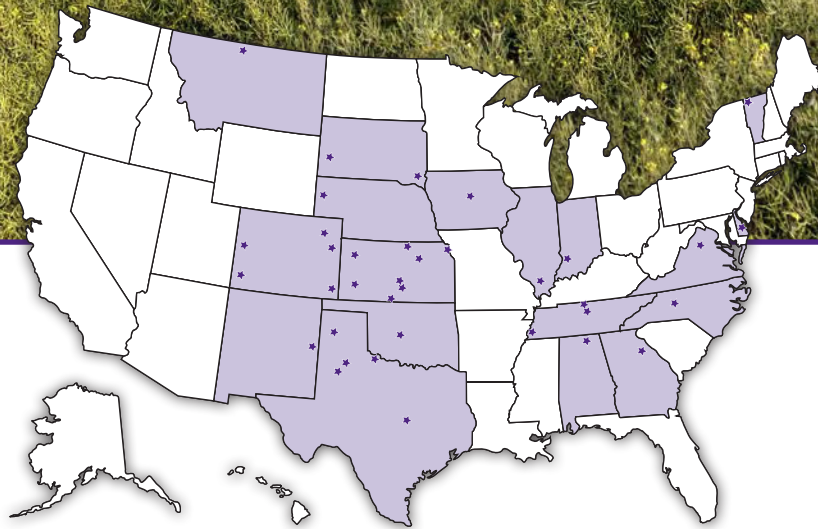


**2019**

# National Winter Canola Variety Trial



***Report of Progress 1157***

**K-STATE**  
Research and Extension

Kansas State University Agricultural Experiment Station and Cooperative Extension Service

# 2019 National Winter Canola Variety Trial

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Contribution no. 20-309-S from the Kansas Agricultural Experiment Station

# 2019 National Winter Canola Variety Trial

## Objectives

The objectives of the National Winter Canola Variety Trial (NWCVT) are to evaluate the performance of released and experimental varieties, determine where these varieties are best adapted, and increase the visibility of winter canola across the United States. Breeders, marketers, and producers use data collected from the trials to make informed variety selections. The NWCVT is planted at locations in the Great Plains, Midwest, northern U.S., and Southeast.

## Procedures

Seed for the NWCVT was distributed to 36 locations in 18 states for the 2018–2019 growing season. The locations receiving seed are illustrated on the map on the front cover. See the back cover for a listing of participating cooperators. Of the 29 entries, 17 are commercial and 12 are experimental. These entries were provided by eight global seed suppliers. All entries in the trial were treated with insecticide and fungicide seed treatments to control insects and seedling diseases through the late fall and early winter months.

Open-pollinated and hybrid cultivars were planted in separate, side-by-side trials at sites where all 29 entries were planted. Results for each trial were analyzed individually and are presented in separate tables.

Management guidelines were provided to cooperators, but previous growing experience influenced final management decisions. All trials were planted in small research plots (approximately 100 ft<sup>2</sup>) with three or four replications. Cultural practices, site descriptions, growing conditions, and performance data are provided for each harvested location. Results are presented alphabetically by seed supplier. Yield results for some locations include 2-year summaries.

Near infrared spectroscopy was used for total oil and protein analyses. The Kansas State University canola breeding program provided analysis for all Kansas sites and the Brassica Breeding and Research Program at the University of Idaho performed analysis for all remaining sites.

The NWCVT continues in the 2019–2020 growing season and includes 24 entries. Seven seed suppliers contributed to the trial, and it was distributed to 33 locations in 18 states.

## 2018–2019 Growing Conditions

Temperature and precipitation data are shown at the top of the page for each location. Thick black lines on the temperature graphs represent long-term average high and low temperatures (°F) for the location. The upper thin line represents actual daily high temperatures, and the lower thin line represents actual daily low temperatures. On the precipitation graph, the line labeled “normal” represents long-term average precipitation, and the line labeled “18-19” represents actual precipitation. If weather information was not provided, data were taken from a nearby town.

In general, the 2018–2019 growing season was marked by fluctuating temperatures and above-normal precipitation. Fall temperatures were moderate and moisture was adequate to surplus allowing for excellent crop establishment. A colder than normal February and March slowed green up in the spring. For some central Great Plains locations, this resulted in stand thinning and crown damage. Spring rains brought excessive moisture and saturated soils. Temperatures moderated, resulting in record high yields at some locations. Saturated soils and crown rot caused severe lodging to occur at a few locations. Overall, yields were excellent despite the challenges shown by the weather.

## Test Sites and Results

Twenty-three harvested locations in 13 states are included in this report: Akron, Burlington, Fruita, Walsh, and Yellow Jacket, CO; Georgetown, DE; Athens, GA; Vincennes, IN; Belleville, Garden City, Hutchinson, Kiowa, Manhattan, and Norwich, KS; Havre, MT; Scottsbluff, NE; Clovis, NM; Chickasha, OK; Springfield, TN; Bushland and Chillicothe, TX; Orange, VA; and Alburgh, VT. Thirteen locations were not harvested because of poor stand establishment, winterkill, or too much rainfall before harvest. New cooperators in

2018–2019 include: Georgetown, DE; Carbondale, IL; and Havre, MT.

The “percentage of test average” yield calculation is included in the results. This relative yield calculation allows for some comparison of performance across environments. Entries yielding greater than 100% of the test average across multiple locations merit some consideration.

Overall, yield performance was above average across much of the United States. Open pollinated trial means ranged from 377 to 3,395 lb/acre. Hybrid trial means ranged from 340 to 4,082 lb/acre. Yields in the southern Great Plains, Midwest, and Southeast were high because of above normal precipitation.

Caution should be used when evaluating data from locations with coefficient of variation (CV) values greater than 20. Lower values suggest less error was observed at the location. Inestimable differences in soil type, weather, and environmental conditions play a part in increasing experimental error and CV values. Eight trial sites have CV values of greater than 20. Even if yield data are unreliable, other data collected by the cooperator may be useful.

## **Variety Selection**

Winter hardiness is an important trait to consider when selecting a winter canola variety. This trait has been improved, but variability still exists where differential winterkill occurs. Winter canola varieties should show consistent survival across multiple years and locations. Other traits to consider include herbicide resistance, tolerance to carryover from sulfonylurea herbicides, maturity, disease tolerance, yield potential, and oil content. More than one year of data should be used to make an informed variety selection decision. Canola weighs 50 lb/bushel, so a 2,000 lb/acre yield is 40 bushels/acre.

Table 43 provides information on the tolerance of varieties to blackleg fungus. The 2018–2019 blackleg nursery was planted at Stillwater, OK, by Oklahoma State University. Data is provided with permission. View Table 44 for seed sources, contact information, brand names, and traits of the winter canola varieties and hybrids grown in the NWCVT.

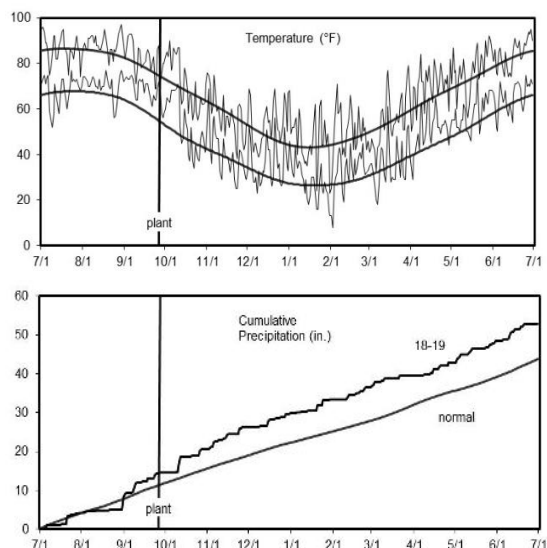
## **Acknowledgments**

This work was funded in part by the fees paid by seed suppliers, the United States Department of Agriculture National Institute of Food and Agriculture Supplemental and Alternative Crops Competitive Grants Program, and the Kansas Agricultural Experiment Station. Assistant scientist Scott Dooley assisted with organizing, packaging, planting, harvesting, data collection, and preparation of this publication. Sincere appreciation is expressed to all participating researchers and seed suppliers who have a vested interest in expanding winter canola acres and increasing production in the United States.

### Georgetown, Delaware

Victor Green  
University of Delaware

Planted: 9/27/2018 in 15-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Harvested: 6/12/2019  
 Herbicides: 1 pt/a Treflan  
 Insecticides: None  
 Irrigation: Yes  
 Previous crop: Corn  
 Soil test: NA  
 Fertilizer: 21-0-192-0.5 lb N-P-K-B fertilizer in fall  
 100-0-0-0.5 lb N-P-K-B fertilizer in spring  
 Soil type: Rosedale loamy sand  
 Elevation: 48 ft Latitude: 38° 38'N  
 Comments: Good to excellent yields and oil contents are reported for this site in its first year growing a trial.



**Table 1. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Georgetown, DE**

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Plant height (in.) | 50% bloom (DOY) | Test  |                |         |             |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|------|--------------------|-----------------|-------|----------------|---------|-------------|
|                                   |                   | 2019         | 2018 | 2-yr. | 2019                   | 2019 | 2018 |                    |                 | 2-yr. | weight (lb/bu) | Oil (%) | Protein (%) |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |      |                    |                 |       |                |         |             |
| CP115WRR                          | OP                | 1368         | ---  | ---   | 81                     | ---  | ---  | ---                | 40              | 101   | 44.0           | 42.4    | 21.0        |
| CP225WRR                          | OP                | 1597         | ---  | ---   | 94                     | ---  | ---  | ---                | 41              | 104   | 46.6           | 42.1    | 20.8        |
| CP320WRR                          | OP                | 1682         | ---  | ---   | 99                     | ---  | ---  | ---                | 39              | 104   | 45.5           | 43.6    | 20.0        |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |      |                    |                 |       |                |         |             |
| KS4670                            | OP                | 1572         | ---  | ---   | 93                     | ---  | ---  | ---                | 41              | 105   | 46.4           | 43.7    | 20.1        |
| KS4719                            | OP                | 1553         | ---  | ---   | 92                     | ---  | ---  | ---                | 45              | 105   | 45.2           | 43.1    | 20.6        |
| KSR4723                           | OP                | 1524         | ---  | ---   | 90                     | ---  | ---  | ---                | 42              | 103   | 48.5           | 42.2    | <b>21.3</b> |
| KSR4767                           | OP                | 1388         | ---  | ---   | 82                     | ---  | ---  | ---                | 42              | 105   | 41.8           | 41.8    | 20.9        |
| Riley                             | OP                | 1708         | ---  | ---   | 101                    | ---  | ---  | ---                | 38              | 102   | 47.6           | 43.5    | 20.9        |
| Sumner                            | OP                | 1682         | ---  | ---   | 99                     | ---  | ---  | ---                | 40              | 103   | 47.0           | 42.3    | <b>22.2</b> |
| Surefire                          | OP                | 1602         | ---  | ---   | 95                     | ---  | ---  | ---                | 43              | 103   | 48.2           | 42.1    | <b>21.8</b> |
| Wichita                           | OP                | 1864         | ---  | ---   | 110                    | ---  | ---  | ---                | 40              | 104   | 46.0           | ---     | ---         |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |      |                    |                 |       |                |         |             |
| QUARTZ                            | OP                | <b>2415</b>  | ---  | ---   | 143                    | ---  | ---  | ---                | 36              | 104   | 45.6           | 42.5    | 19.2        |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |      |                    |                 |       |                |         |             |
| Torrington                        | OP                | 1885         | ---  | ---   | 111                    | ---  | ---  | ---                | 41              | 103   | 42.2           | 43.3    | 20.4        |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |      |                    |                 |       |                |         |             |
| Star 915W                         | OP                | 1787         | ---  | ---   | 106                    | ---  | ---  | ---                | 41              | 105   | 45.3           | 43.2    | 21.0        |
| Star 930W                         | OP                | 1769         | ---  | ---   | 104                    | ---  | ---  | ---                | 39              | 103   | 48.7           | 44.3    | 20.1        |
| <b>Mean</b>                       |                   | 1693         | ---  | ---   | ---                    | ---  | ---  | ---                | 40              | 104   | 45.9           | 42.9    | 20.7        |
| <b>CV</b>                         |                   | 16           | ---  | ---   | ---                    | ---  | ---  | ---                | 4               | 1     | 6.1            | 1.6     | 2.1         |
| <b>LSD (0.05)</b>                 |                   | 463          | ---  | ---   | ---                    | ---  | ---  | ---                | 3               | 2     | 6.0            | NS      | 1.0         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 2. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Georgetown, DE**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |                |         | Plant height (in.) | 50% bloom (DOY) | Test        |  |
|--------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|----------------|---------|--------------------|-----------------|-------------|--|
|                          |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | weight (lb/bu) | Oil (%) |                    |                 | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| CWH189D                  | H                 | <b>2479</b>               | ---  | ---   | 88                     | ---  | ---  | ---                 | 40             | 105     | 41.3               | 43.6            | <b>20.1</b> |  |
| CWH190D                  | H                 | <b>2509</b>               | ---  | ---   | 89                     | ---  | ---  | ---                 | 40             | 104     | 40.7               | 43.4            | <b>20.7</b> |  |
| CWH249D                  | H                 | <b>2703</b>               | ---  | ---   | 96                     | ---  | ---  | ---                 | 36             | 105     | 41.5               | 43.1            | <b>20.0</b> |  |
| CWH317D                  | H                 | <b>2992</b>               | ---  | ---   | 106                    | ---  | ---  | ---                 | 37             | 102     | 42.1               | 44.0            | 19.3        |  |
| <b>KWS-MOMONT</b>        |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| HAMOUR                   | H                 | <b>3073</b>               | ---  | ---   | 109                    | ---  | ---  | ---                 | 43             | 104     | 42.8               | 42.8            | 19.2        |  |
| MH 14ES125               | H                 | <b>3310</b>               | ---  | ---   | 118                    | ---  | ---  | ---                 | 44             | 105     | 42.9               | ---             | ---         |  |
| MH 15AY085               | H                 | <b>2955</b>               | ---  | ---   | 105                    | ---  | ---  | ---                 | 42             | 105     | 39.0               | <b>45.7</b>     | 18.8        |  |
| MH 15HT227               | H                 | <b>3133</b>               | ---  | ---   | 111                    | ---  | ---  | ---                 | 38             | 105     | 41.6               | <b>45.9</b>     | 18.5        |  |
| MH 15HT229               | H                 | <b>2799</b>               | ---  | ---   | 100                    | ---  | ---  | ---                 | 42             | 104     | 42.1               | <b>45.8</b>     | 19.4        |  |
| <b>Limagrain Cereals</b> |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| Advocat                  | H                 | 2055                      | ---  | ---   | 73                     | ---  | ---  | ---                 | 36             | 103     | 39.9               | <b>45.2</b>     | 19.4        |  |
| Architect                | H                 | <b>3120</b>               | ---  | ---   | 111                    | ---  | ---  | ---                 | 40             | 105     | 43.1               | <b>44.5</b>     | 19.5        |  |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| Phoenix CL               | H                 | <b>2504</b>               | ---  | ---   | 89                     | ---  | ---  | ---                 | 42             | 103     | 41.8               | <b>45.8</b>     | 19.3        |  |
| Plurax CL                | H                 | <b>2748</b>               | ---  | ---   | 98                     | ---  | ---  | ---                 | 37             | 100     | 42.7               | <b>46.1</b>     | 18.5        |  |
| Popular                  | H                 | <b>2976</b>               | ---  | ---   | 106                    | ---  | ---  | ---                 | 36             | 101     | 41.5               | <b>46.1</b>     | 19.1        |  |
| <b>Mean</b>              |                   | 2811                      | ---  | ---   | ---                    | ---  | ---  | ---                 | 40             | 104     | 41.6               | 44.8            | 19.4        |  |
| <b>CV</b>                |                   | 20                        | ---  | ---   | ---                    | ---  | ---  | ---                 | 5              | 1       | 6.6                | 1.9             | 1.8         |  |
| <b>LSD (0.05)</b>        |                   | 927                       | ---  | ---   | ---                    | ---  | ---  | ---                 | 4              | 2       | 4.6                | 1.8             | 0.8         |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

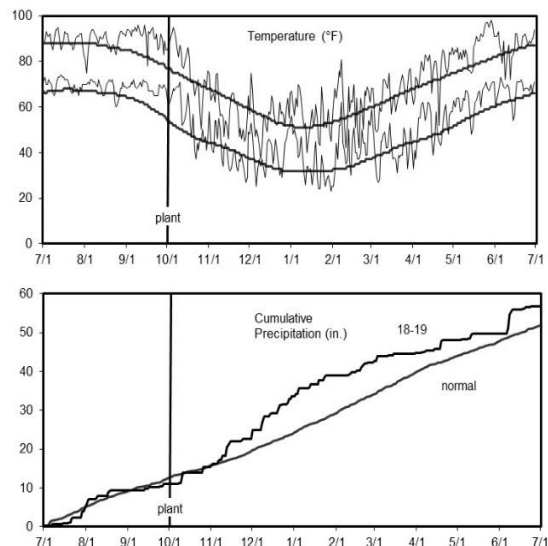
<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.



### Athens, Georgia

Daniel Mailhot  
University of Georgia

Planted: 10/2/2018 in 7-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Harvested: 6/9/2019  
 Herbicides: Treflan  
 Insecticides: None  
 Irrigation: None  
 Previous crop: Fallow  
 Soil test: P=Medium, K=Medium, pH=6.3  
 Fertilizer: 50-240-230 lb N-P-K fertilizer in fall  
 123-0-0 lb N-P-K fertilizer in spring  
 Soil type: Wickam sandy loam  
 Elevation: 500 ft Latitude: 33° 43'N  
 Comments: Consistent, outstanding yields at this location for two consecutive growing seasons.



**Table 3. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Athens, GA**

| Name                              | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Plant height (in.) | 50% bloom (DOY) | Test  |                |             |             |
|-----------------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|--------------------|-----------------|-------|----------------|-------------|-------------|
|                                   |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 |                    |                 | 2-yr. | weight (lb/bu) | Oil (%)     | Protein (%) |
| <b>CROPLAN by WinField</b>        |                   |              |             |       |                        |      |      |                    |                 |       |                |             |             |
| CP115WRR                          | OP                | 3034         | 3503        | 3269  | 90                     | ---  | ---  | ---                | 55              | 77    | 41.6           | <b>41.6</b> | 23.4        |
| CP225WRR                          | OP                | 3088         | <b>3845</b> | 3466  | 92                     | ---  | ---  | ---                | 57              | 78    | 43.1           | <b>40.9</b> | 23.6        |
| CP320WRR                          | OP                | 3100         | <b>3867</b> | 3483  | 92                     | ---  | ---  | ---                | 57              | 76    | 40.3           | 39.2        | 24.6        |
| <b>Kansas State University</b>    |                   |              |             |       |                        |      |      |                    |                 |       |                |             |             |
| KS4670                            | OP                | 3287         | 3261        | 3274  | 98                     | ---  | ---  | ---                | 61              | 77    | 40.1           | <b>40.5</b> | 24.4        |
| KS4719                            | OP                | <b>3711</b>  | ---         | ---   | 110                    | ---  | ---  | ---                | 62              | 84    | 40.2           | <b>40.4</b> | 24.1        |
| KSR4723                           | OP                | <b>3816</b>  | 3536        | 3676  | 113                    | ---  | ---  | ---                | 60              | 78    | 44.5           | <b>40.3</b> | 24.2        |
| KSR4767                           | OP                | 3288         | ---         | ---   | 98                     | ---  | ---  | ---                | 60              | 78    | 43.2           | <b>40.1</b> | 24.8        |
| Riley                             | OP                | 3398         | <b>3808</b> | 3603  | 101                    | ---  | ---  | ---                | 61              | 78    | 41.8           | <b>42.1</b> | 24.0        |
| Sumner                            | OP                | <b>3896</b>  | 3476        | 3686  | 116                    | ---  | ---  | ---                | 60              | 77    | 44.1           | 39.4        | 24.3        |
| Surefire                          | OP                | 3283         | 3369        | 3326  | 98                     | ---  | ---  | ---                | 61              | 87    | 42.6           | 39.0        | 25.4        |
| Wichita                           | OP                | <b>3460</b>  | 3599        | 3530  | 103                    | ---  | ---  | ---                | 62              | 83    | 41.7           | 39.6        | 24.8        |
| <b>KWS-MOMONT</b>                 |                   |              |             |       |                        |      |      |                    |                 |       |                |             |             |
| QUARTZ                            | OP                | <b>3558</b>  | <b>4175</b> | 3866  | 106                    | ---  | ---  | ---                | 59              | 78    | 43.0           | 37.4        | 24.6        |
| <b>Ohlde Seed Farms</b>           |                   |              |             |       |                        |      |      |                    |                 |       |                |             |             |
| Torrington                        | OP                | 3290         | 3322        | 3306  | 98                     | ---  | ---  | ---                | 61              | 79    | 42.2           | 40.0        | 24.4        |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |             |       |                        |      |      |                    |                 |       |                |             |             |
| Star 915W                         | OP                | 3177         | <b>3840</b> | 3509  | 94                     | ---  | ---  | ---                | 60              | 80    | 36.7           | <b>41.5</b> | 24.0        |
| Star 930W                         | OP                | 3210         | 3710        | 3460  | 95                     | ---  | ---  | ---                | 59              | 77    | 44.3           | 39.2        | 24.3        |
| <b>Mean</b>                       |                   | 3363         | 3622        | ---   | ---                    | ---  | ---  | ---                | 60              | 79    | 41.9           | 40.1        | 24.3        |
| <b>CV</b>                         |                   | 10           | 12          | ---   | ---                    | ---  | ---  | ---                | 5               | 2     | 6.3            | 2.4         | 2.2         |
| <b>LSD (0.05)</b>                 |                   | 491          | 369         | ---   | ---                    | ---  | ---  | ---                | NS              | 2     | 3.9            | 2.1         | NS          |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 4. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Athens, GA**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |                |         | Plant height (in.) | 50% bloom (DOY) | Test        |  |
|--------------------------|-------------------|--------------|------|-------|------------------------|------|------|---------------------|----------------|---------|--------------------|-----------------|-------------|--|
|                          |                   | 2019         | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | weight (lb/bu) | Oil (%) |                    |                 | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| CWH189D                  | H                 | <b>4599</b>  | 4661 | 4630  | 118                    | ---  | ---  | ---                 | 61             | 84      | 41.5               | 38.3            | <b>24.0</b> |  |
| CWH190D                  | H                 | <b>4160</b>  | 4362 | 4261  | 107                    | ---  | ---  | ---                 | 61             | 82      | 39.5               | 38.9            | <b>24.0</b> |  |
| CWH249D                  | H                 | 3844         | ---  | ---   | 98                     | ---  | ---  | ---                 | 60             | 82      | 42.2               | 37.8            | <b>24.7</b> |  |
| CWH317D                  | H                 | <b>4368</b>  | ---  | ---   | 112                    | ---  | ---  | ---                 | 55             | 77      | 43.4               | 38.2            | <b>23.1</b> |  |
| <b>KWS-MOMONT</b>        |                   |              |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| HAMOUR                   | H                 | 4019         | 3637 | 3828  | 103                    | ---  | ---  | ---                 | 65             | 85      | 41.6               | <b>40.6</b>     | 21.8        |  |
| MH 14ES125               | H                 | 3505         | ---  | ---   | 90                     | ---  | ---  | ---                 | 64             | 86      | 42.0               | 39.9            | 22.5        |  |
| MH 15AY085               | H                 | 3125         | 3752 | 3439  | 80                     | ---  | ---  | ---                 | 62             | 82      | 35.6               | <b>43.2</b>     | 21.6        |  |
| MH 15HT227               | H                 | 3755         | ---  | ---   | 96                     | ---  | ---  | ---                 | 55             | 78      | 35.6               | <b>42.5</b>     | 21.3        |  |
| MH 15HT229               | H                 | 3090         | 4427 | 3758  | 79                     | ---  | ---  | ---                 | 60             | 80      | 37.6               | <b>42.6</b>     | 23.0        |  |
| <b>Limagrain Cereals</b> |                   |              |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| Advocat                  | H                 | 3711         | ---  | ---   | 95                     | ---  | ---  | ---                 | 62             | 80      | 39.8               | 40.4            | 22.6        |  |
| Architect                | H                 | <b>4167</b>  | ---  | ---   | 107                    | ---  | ---  | ---                 | 63             | 81      | 42.2               | <b>41.7</b>     | 22.2        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| Phoenix CL               | H                 | 3933         | 4674 | 4303  | 101                    | ---  | ---  | ---                 | 61             | 77      | 36.7               | <b>42.0</b>     | 22.0        |  |
| Plurax CL                | H                 | <b>4275</b>  | 4623 | 4449  | 109                    | ---  | ---  | ---                 | 59             | 76      | 44.9               | <b>41.0</b>     | 22.7        |  |
| Popular                  | H                 | <b>4125</b>  | 3994 | 4059  | 106                    | ---  | ---  | ---                 | 57             | 77      | 41.7               | 40.5            | 22.9        |  |
| <b>Mean</b>              |                   | 3905         | 4377 | ---   | ---                    | ---  | ---  | ---                 | 60             | 80      | 40.3               | 40.4            | 22.8        |  |
| <b>CV</b>                |                   | 9            | 10   | ---   | ---                    | ---  | ---  | ---                 | 4              | 1       | 6.7                | 2.8             | 2.9         |  |
| <b>LSD (0.05)</b>        |                   | 580          | 769  | ---   | ---                    | ---  | ---  | ---                 | 4              | 2       | 4.6                | 2.6             | 1.6         |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

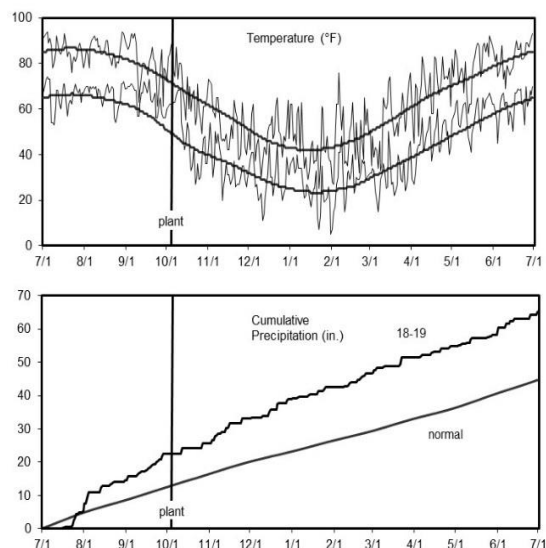
<sup>1</sup>Type: H=hybrid. OP=open pollinated.



### Orange, Virginia

Greg Lillard and Wade Thomason  
Virginia Tech University

Planted: 10/5/2018  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 6/12/2019  
Herbicides: Treflan  
Insecticides: None  
Irrigation: None  
Previous crop: NA  
Soil test: NA  
Fertilizer: 30-80-60-0 lb N-P-K-S fertilizer in fall  
120-0-0 lb N-P-K fertilizer in spring  
Soil type: Davidson silty clay  
Elevation: 510 ft Latitude: 38° 13'N  
Comments: Above average precipitation resulted in excellent yields at this location.



**Table 5. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Orange, VA**

| Name                              | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) | 50% bloom (DOY) | Plant height (in.) | Test weight (lb/bu) | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|-----------------|--------------------|---------------------|---------|-------------|
|                                   |                   | 2019         | 2017        | 2-yr. | 2019                   | 2019 | 2017 |                     |                 |                    |                     |         |             |
| <b>CROPLAN by WinField</b>        |                   |              |             |       |                        |      |      |                     |                 |                    |                     |         |             |
| CP115WRR                          | OP                | 3199         | 1837        | 2518  | 101                    | ---  | ---  | ---                 | 105             | 51                 | 49.0                | 40.4    | 25.4        |
| CP225WRR                          | OP                | 3460         | <b>2071</b> | 2766  | 109                    | ---  | ---  | ---                 | 105             | 53                 | 48.5                | 40.8    | 26.0        |
| CP320WRR                          | OP                | 3050         | 2004        | 2527  | 96                     | ---  | ---  | ---                 | 104             | 49                 | 48.2                | 40.8    | 26.0        |
| <b>Kansas State University</b>    |                   |              |             |       |                        |      |      |                     |                 |                    |                     |         |             |
| KS4670                            | OP                | 2936         | ---         | ---   | 92                     | ---  | ---  | ---                 | 105             | 51                 | 49.0                | 40.0    | 25.6        |
| KS4719                            | OP                | 3641         | ---         | ---   | 115                    | ---  | ---  | ---                 | 105             | 49                 | 49.5                | 41.4    | 24.4        |
| KSR4723                           | OP                | 3344         | ---         | ---   | 105                    | ---  | ---  | ---                 | 105             | 48                 | 48.7                | 40.6    | 25.4        |
| KSR4767                           | OP                | 2934         | ---         | ---   | 92                     | ---  | ---  | ---                 | 102             | 50                 | 49.7                | 41.2    | 25.0        |
| Riley                             | OP                | 2993         | 1678        | 2336  | 94                     | ---  | ---  | ---                 | 103             | 48                 | 48.8                | 40.9    | 25.3        |
| Sumner                            | OP                | 3042         | <b>2055</b> | 2548  | 96                     | ---  | ---  | ---                 | 103             | 45                 | 49.5                | 40.3    | 25.8        |
| Surefire                          | OP                | 3156         | 1961        | 2558  | 99                     | ---  | ---  | ---                 | 102             | 47                 | 48.7                | 42.0    | 25.6        |
| Wichita                           | OP                | 3175         | <b>2138</b> | 2656  | 100                    | ---  | ---  | ---                 | 104             | 46                 | 49.6                | 41.1    | 25.7        |
| <b>KWS-MOMONT</b>                 |                   |              |             |       |                        |      |      |                     |                 |                    |                     |         |             |
| QUARTZ                            | OP                | 3120         | <b>2278</b> | 2699  | 98                     | ---  | ---  | ---                 | 105             | 49                 | 49.4                | 40.7    | 26.6        |
| <b>Ohlde Seed Farms</b>           |                   |              |             |       |                        |      |      |                     |                 |                    |                     |         |             |
| Torrington                        | OP                | 3177         | 2048        | 2613  | 100                    | ---  | ---  | ---                 | 105             | 51                 | 49.0                | 40.8    | 23.9        |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |             |       |                        |      |      |                     |                 |                    |                     |         |             |
| Star 915W                         | OP                | 3257         | 1900        | 2578  | 103                    | ---  | ---  | ---                 | 105             | 51                 | 49.2                | 41.6    | 25.6        |
| Star 930W                         | OP                | 3163         | 1847        | 2505  | 100                    | ---  | ---  | ---                 | 103             | 51                 | 49.5                | 39.8    | 25.9        |
| <b>Mean</b>                       |                   | 3176         | 1918        | ---   | ---                    | ---  | ---  | ---                 | 104             | 49                 | 49.1                | 40.8    | 25.5        |
| <b>CV</b>                         |                   | 13           | 11          | ---   | ---                    | ---  | ---  | ---                 | 1               | 9                  | 1.8                 | 2.2     | 3.4         |
| <b>LSD (0.05)</b>                 |                   | NS           | 364         | ---   | ---                    | ---  | ---  | ---                 | NS              | NS                 | NS                  | NS      | NS          |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 6. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Orange, VA**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of | Winter survival |      |       | 50%   | Plant  | Test    |             |         |
|--------------------------|-------------------|--------------|-------------|-------|-------------|-----------------|------|-------|-------|--------|---------|-------------|---------|
|                          |                   | 2019         | 2017        | 2-yr. | test avg.)  | 2019            | 2017 | 2-yr. | bloom | height | weight  | Oil         | Protein |
|                          |                   |              |             |       |             |                 |      |       | (DOY) | (in.)  | (lb/bu) | (%)         | (%)     |
| <b>Bayer CropScience</b> |                   |              |             |       |             |                 |      |       |       |        |         |             |         |
| CWH189D                  | H                 | 3603         | 2280        | 2941  | 106         | ---             | ---  | ---   | 105   | 53     | 46.7    | <b>43.8</b> | 23.4    |
| CWH190D                  | H                 | 3127         | 2401        | 2764  | 92          | ---             | ---  | ---   | 105   | 54     | 45.9    | 39.7        | 24.5    |
| CWH249D                  | H                 | 2553         | ---         | ---   | 75          | ---             | ---  | ---   | 105   | 53     | 47.9    | 40.6        | 24.2    |
| CWH317D                  | H                 | 3866         | ---         | ---   | 114         | ---             | ---  | ---   | 105   | 57     | 49.0    | <b>42.2</b> | 23.5    |
| <b>KWS-MOMONT</b>        |                   |              |             |       |             |                 |      |       |       |        |         |             |         |
| HAMOUR                   | H                 | 4266         | <b>2466</b> | 3366  | 125         | ---             | ---  | ---   | 105   | 53     | 47.9    | <b>43.4</b> | 22.9    |
| MH 14ES125               | H                 | 3885         | ---         | ---   | 114         | ---             | ---  | ---   | 104   | 54     | 48.3    | 41.2        | 24.9    |
| MH 15AY085               | H                 | 2969         | ---         | ---   | 87          | ---             | ---  | ---   | 103   | 50     | 48.3    | 41.8        | 24.5    |
| MH 15HT227               | H                 | 3765         | ---         | ---   | 111         | ---             | ---  | ---   | 103   | 54     | 49.5    | 41.1        | 24.1    |
| MH 15HT229               | H                 | 2923         | ---         | ---   | 86          | ---             | ---  | ---   | 105   | 55     | 45.3    | 39.1        | 25.5    |
| <b>Limagrain Cereals</b> |                   |              |             |       |             |                 |      |       |       |        |         |             |         |
| Advocat                  | H                 | 3802         | ---         | ---   | 112         | ---             | ---  | ---   | 102   | 55     | 48.7    | <b>42.3</b> | 23.0    |
| Architect                | H                 | 3050         | ---         | ---   | 90          | ---             | ---  | ---   | 102   | 49     | 48.5    | 41.4        | 23.4    |
| <b>Rubisco Seeds LLC</b> |                   |              |             |       |             |                 |      |       |       |        |         |             |         |
| Phoenix CL               | H                 | 3269         | ---         | ---   | 96          | ---             | ---  | ---   | 104   | 47     | 47.8    | 41.8        | 24.6    |
| Plurax CL                | H                 | 3702         | 2382        | 3042  | 109         | ---             | ---  | ---   | 104   | 56     | 48.0    | 40.1        | 24.3    |
| Popular                  | H                 | 3464         | 2277        | 2870  | 102         | ---             | ---  | ---   | 104   | 55     | 48.9    | 41.2        | 24.9    |
| <b>Mean</b>              |                   | 3468         | 2441        | ---   | ---         | ---             | ---  | ---   | 104   | 53     | 47.9    | 41.4        | 24.1    |
| <b>CV</b>                |                   | 17           | 9           | ---   | ---         | ---             | ---  | ---   | 2     | 9      | 5.0     | 2.0         | 3.5     |
| <b>LSD (0.05)</b>        |                   | NS           | 371         | ---   | ---         | ---             | ---  | ---   | 3     | NS     | NS      | 1.8         | NS      |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

Vincennes, Indiana

Chuck Mansfield  
Vincennes University

Planted: 9/19/2018 in 6-in. rows  
Seeding Rate OP: 275,000 seeds/a  
Seeding Rate Hybrid: 210,000 seeds/a  
Desiccant: 1.5 pt/a Reglone on 6/12/2019  
Harvested: 6/21/2019  
Herbicides: 12 oz/a Dual, 4 oz/a Command  
Insecticides: 1.92 oz/a Warrior  
Fungicides: 2.85 oz/a Proline, 6 oz/a Approach  
Previous crop: OP: tomato; HYB: wheat  
Soil test: P=60 lb/a, K=274 lb/a, ph=6.6, OM=1.29%  
Fertilizer: 69-0-11-5.5-11-0.5 lb/a N-P-K-Mg-S-B in fall  
69-0-11-5.5-11-0.5 lb/a N-P-K-Mg-S-B in spring  
Soil type: Lomax loam  
Elevation: 430 ft Latitude: 38° 74'N  
Comments: Yields were much improved over 2018. No winterkill was reported.

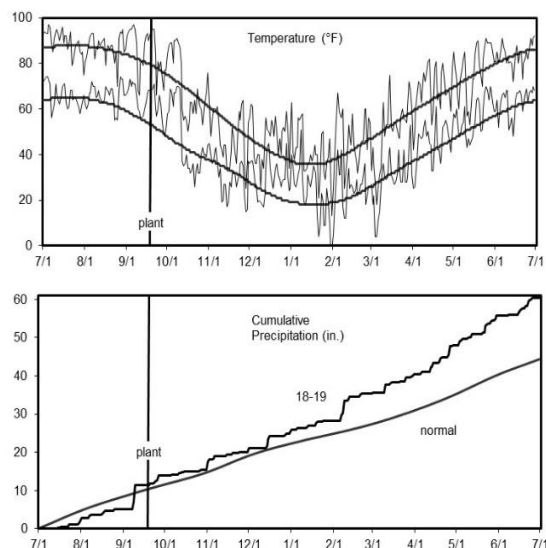


Table 7. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Vincennes, IN

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |         |     | Plant height (in.) | Moisture (%) | Test weight |  | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|------|---------------------|---------|-----|--------------------|--------------|-------------|--|---------|-------------|
|                                   |                   | 2019         | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (lb/bu) | (%) |                    |              |             |  |         |             |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| CP115WRR                          | OP                | 2576         | 1681 | 2128  | 90                     | ---  | 78   | ---                 | 55      | --- | 51.1               | 42.4         | 20.5        |  |         |             |
| CP225WRR                          | OP                | 2376         | 1989 | 2182  | 83                     | ---  | 82   | ---                 | 55      | --- | 51.8               | 41.6         | 21.1        |  |         |             |
| CP320WRR                          | OP                | 2687         | 2164 | 2426  | 94                     | ---  | 90   | ---                 | 53      | --- | 51.7               | 40.8         | 20.9        |  |         |             |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| KS4670                            | OP                | 2797         | 2252 | 2524  | 98                     | ---  | 95   | ---                 | 57      | --- | 52.0               | 42.2         | 20.4        |  |         |             |
| KS4719                            | OP                | <b>3214</b>  | ---  | ---   | 113                    | ---  | ---  | ---                 | 60      | --- | 51.9               | 42.8         | 20.5        |  |         |             |
| KSR4723                           | OP                | 3014         | 1917 | 2466  | 106                    | ---  | 90   | ---                 | 57      | --- | 51.4               | 43.1         | 19.8        |  |         |             |
| KSR4767                           | OP                | 2842         | ---  | ---   | 100                    | ---  | ---  | ---                 | 59      | --- | 51.7               | 41.6         | 21.4        |  |         |             |
| Riley                             | OP                | <b>3183</b>  | 2255 | 2719  | 112                    | ---  | 87   | ---                 | 57      | --- | 51.7               | 43.3         | 20.5        |  |         |             |
| Sumner                            | OP                | 3008         | 1953 | 2480  | 106                    | ---  | 90   | ---                 | 56      | --- | 51.7               | 43.1         | 20.8        |  |         |             |
| Surefire                          | OP                | <b>3050</b>  | 1853 | 2451  | 107                    | ---  | 92   | ---                 | 57      | --- | 52.1               | 41.8         | 21.2        |  |         |             |
| Wichita                           | OP                | <b>3217</b>  | 2058 | 2638  | 113                    | ---  | 92   | ---                 | 56      | --- | 51.6               | 42.8         | 20.7        |  |         |             |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| QUARTZ                            | OP                | <b>3380</b>  | 1179 | 2279  | 119                    | ---  | 80   | ---                 | 53      | --- | 51.3               | 43.9         | 19.1        |  |         |             |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| Torrington                        | OP                | <b>3183</b>  | 2380 | 2782  | 112                    | ---  | 83   | ---                 | 57      | --- | 51.4               | 42.8         | 20.4        |  |         |             |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| Star 915W                         | OP                | <b>3100</b>  | 2034 | 2567  | 109                    | ---  | 87   | ---                 | 56      | --- | 51.2               | 43.4         | 21.1        |  |         |             |
| Star 930W                         | OP                | 2604         | 2114 | 2359  | 91                     | ---  | 88   | ---                 | 55      | --- | 51.7               | 42.2         | 20.7        |  |         |             |
| <b>Mean</b>                       |                   | 2849         | 1947 | ---   | ---                    | ---  | 88   | ---                 | 56      | --- | 51.6               | 42.5         | 20.6        |  |         |             |
| <b>CV</b>                         |                   | 7            | 13   | ---   | ---                    | ---  | 8    | ---                 | 2       | --- | 0.6                | 1.9          | 2.9         |  |         |             |
| <b>LSD (0.05)</b>                 |                   | 342          | 432  | ---   | ---                    | ---  | NS   | ---                 | 2       | --- | 0.5                | NS           | NS          |  |         |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 8. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Vincennes, IN**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |              |                | Plant height (in.) | Test        |             |  |
|--------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|--------------|----------------|--------------------|-------------|-------------|--|
|                          |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | Moisture (%) | weight (lb/bu) |                    | Oil (%)     | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| CWH189D                  | H                 | 2700         | 2285        | 2493  | 86                     | ---  | 96   | ---                 | 52           | ---            | 51.6               | 41.8        | <b>20.0</b> |  |
| CWH190D                  | H                 | 2427         | ---         | ---   | 78                     | ---  | ---  | ---                 | 53           | ---            | 52.3               | 42.8        | <b>20.3</b> |  |
| CWH249D                  | H                 | 3043         | 2285        | 2664  | 97                     | ---  | 95   | ---                 | 51           | ---            | 52.0               | 42.6        | <b>19.8</b> |  |
| CWH317D                  | H                 | <b>3184</b>  | ---         | ---   | 102                    | ---  | ---  | ---                 | 52           | ---            | 51.6               | 43.5        | 18.6        |  |
| <b>KWS-MOMONT</b>        |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| HAMOUR                   | H                 | 2937         | 1524        | 2231  | 94                     | ---  | 57   | ---                 | 58           | ---            | 52.1               | 44.0        | 18.1        |  |
| MH 14ES125               | H                 | <b>3415</b>  | ---         | ---   | 109                    | ---  | ---  | ---                 | 58           | ---            | 51.2               | 45.0        | 18.3        |  |
| MH 15AY085               | H                 | 3028         | 1205        | 2116  | 97                     | ---  | 33   | ---                 | 56           | ---            | 51.5               | 45.2        | 18.1        |  |
| MH 15HT227               | H                 | <b>3515</b>  | ---         | ---   | 112                    | ---  | ---  | ---                 | 54           | ---            | 50.8               | <b>46.9</b> | 16.8        |  |
| MH 15HT229               | H                 | <b>3460</b>  | 1604        | 2532  | 111                    | ---  | 30   | ---                 | 58           | ---            | 51.0               | <b>46.3</b> | 17.8        |  |
| <b>Limagrain Cereals</b> |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| Advocat                  | H                 | 3042         | ---         | ---   | 97                     | ---  | ---  | ---                 | 54           | ---            | 50.5               | 45.3        | 18.1        |  |
| Architect                | H                 | <b>3322</b>  | ---         | ---   | 106                    | ---  | ---  | ---                 | 54           | ---            | 50.5               | <b>45.5</b> | 17.9        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| Phoenix CL               | H                 | <b>3383</b>  | <b>2565</b> | 2974  | 108                    | ---  | 90   | ---                 | 58           | ---            | 51.5               | 45.1        | 17.6        |  |
| Plurax CL                | H                 | <b>3288</b>  | 2239        | 2764  | 105                    | ---  | 78   | ---                 | 53           | ---            | 51.9               | <b>45.6</b> | 17.7        |  |
| Popular                  | H                 | 3048         | 2332        | 2690  | 97                     | ---  | 72   | ---                 | 53           | ---            | 52.2               | <b>46.2</b> | 17.2        |  |
| <b>Mean</b>              |                   | 3128         | 1982        | ---   | ---                    | ---  | 69   | ---                 | 54           | ---            | 51.5               | 44.6        | 18.4        |  |
| <b>CV</b>                |                   | 8            | 10          | ---   | ---                    | ---  | 10   | ---                 | 2            | ---            | 0.9                | 1.5         | 2.4         |  |
| <b>LSD (0.05)</b>        |                   | 441          | 339         | ---   | ---                    | ---  | 11   | ---                 | 2            | ---            | 0.8                | 1.4         | 0.9         |  |

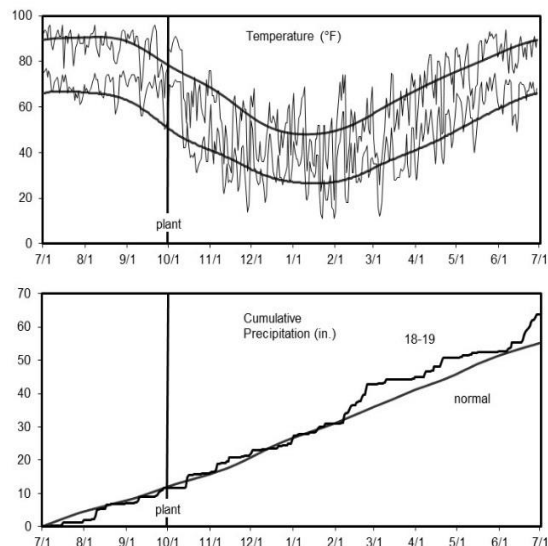
**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

### Springfield, Tennessee

Dennis West  
University of Tennessee

Planted: 10/1/2018 in 7-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Harvested: 6/4/2019  
 Herbicides: None  
 Fungicides: 4.3 oz/a Proline  
 Irrigation: None  
 Previous crop: Soybean  
 Soil test: P=High, K=Low, pH=6.2  
 Fertilizer: 30-0-0-0 lb N-P-K-S fertilizer in fall  
 180-0-30-23-1 lb N-P-K-S-B fertilizer in spring  
 Soil type: Dickson silt loam  
 Elevation: 706 ft Latitude: 36° 32'N  
 Comments: Above normal precipitation and a mild winter resulted in above average yields at this location.



**Table 9. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Springfield, TN**

| Name                           | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |         |             | Plant height (in.) | Moisture weight (%) | Test        |             |
|--------------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|---------|-------------|--------------------|---------------------|-------------|-------------|
|                                |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | Oil (%) | Protein (%) |                    |                     |             |             |
| <b>Bayer CropScience</b>       |                   |              |             |       |                        |      |      |                     |         |             |                    |                     |             |             |
| CWH189D                        | H                 | <b>4088</b>  | <b>2754</b> | 3421  | 113                    | ---  | ---  | ---                 | ---     | ---         | ---                | 51.2                | 38.7        | 23.8        |
| CWH190D                        | H                 | 3079         | 2087        | 2583  | 85                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.5                | 40.4        | 23.3        |
| CWH249D                        | H                 | <b>3819</b>  | ---         | ---   | 106                    | ---  | ---  | ---                 | ---     | ---         | ---                | 50.7                | 39.0        | <b>24.3</b> |
| CWH317D                        | H                 | <b>3951</b>  | ---         | ---   | 109                    | ---  | ---  | ---                 | ---     | ---         | ---                | 51.3                | 38.7        | 22.8        |
| <b>Kansas State University</b> |                   |              |             |       |                        |      |      |                     |         |             |                    |                     |             |             |
| KS4670                         | OP                | 3220         | <b>2802</b> | 3011  | 89                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.4                | 39.2        | <b>25.2</b> |
| KS4719                         | OP                | 3240         | ---         | ---   | 90                     | ---  | ---  | ---                 | ---     | ---         | ---                | 49.9                | <b>40.7</b> | <b>24.2</b> |
| Surefire                       | OP                | 3523         | 2239        | 2881  | 98                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.4                | 38.9        | <b>25.3</b> |
| <b>KWS-MOMONT</b>              |                   |              |             |       |                        |      |      |                     |         |             |                    |                     |             |             |
| HAMOUR                         | H                 | <b>3974</b>  | <b>2884</b> | 3429  | 110                    | ---  | ---  | ---                 | ---     | ---         | ---                | 50.8                | 39.8        | 22.6        |
| HIDYLLE                        | H                 | <b>4235</b>  | <b>3172</b> | 3703  | 117                    | ---  | ---  | ---                 | ---     | ---         | ---                | 51.2                | 40.6        | 23.0        |
| MH 14ES125                     | H                 | 2758         | ---         | ---   | 76                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.1                | <b>41.2</b> | 22.2        |
| MH 15AY085                     | H                 | 3549         | <b>2788</b> | 3169  | 98                     | ---  | ---  | ---                 | ---     | ---         | ---                | 49.7                | <b>41.0</b> | 22.9        |
| MH 15HT227                     | H                 | 3154         | ---         | ---   | 87                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.8                | <b>42.7</b> | 21.5        |
| MH 15HT229                     | H                 | 3242         | 2673        | 2957  | 90                     | ---  | ---  | ---                 | ---     | ---         | ---                | 49.4                | <b>42.0</b> | 23.1        |
| QUARTZ                         | OP                | 3407         | 2243        | 2825  | 94                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.2                | <b>41.3</b> | 22.0        |
| <b>Ohlde Seed Farms</b>        |                   |              |             |       |                        |      |      |                     |         |             |                    |                     |             |             |
| Torrington                     | OP                | <b>3664</b>  | 2463        | 3064  | 102                    | ---  | ---  | ---                 | ---     | ---         | ---                | 50.8                | <b>40.7</b> | 24.1        |
| <b>Rubisco Seeds LLC</b>       |                   |              |             |       |                        |      |      |                     |         |             |                    |                     |             |             |
| Inspiration                    | H                 | <b>4052</b>  | <b>3343</b> | 3697  | 112                    | ---  | ---  | ---                 | ---     | ---         | ---                | 50.8                | <b>40.8</b> | 22.2        |
| Phoenix CL                     | H                 | <b>4255</b>  | <b>3532</b> | 3894  | 118                    | ---  | ---  | ---                 | ---     | ---         | ---                | 50.8                | <b>41.8</b> | 22.8        |
| Plurax CL                      | H                 | <b>3879</b>  | <b>3028</b> | 3453  | 107                    | ---  | ---  | ---                 | ---     | ---         | ---                | 51.3                | <b>40.9</b> | 22.8        |
| Popular                        | H                 | 3487         | <b>2819</b> | 3153  | 97                     | ---  | ---  | ---                 | ---     | ---         | ---                | 50.8                | <b>41.6</b> | 22.7        |
| <b>Mean</b>                    |                   | 3609         | 2689        | ---   | ---                    | ---  | ---  | ---                 | ---     | ---         | ---                | 50.6                | 40.5        | 23.2        |
| <b>CV</b>                      |                   | 11           | 17          | ---   | ---                    | ---  | ---  | ---                 | ---     | ---         | ---                | 1.1                 | 2.4         | 2.3         |
| <b>LSD (0.05)</b>              |                   | 655          | 745         | ---   | ---                    | ---  | ---  | ---                 | ---     | ---         | ---                | 0.9                 | 2.1         | 1.1         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

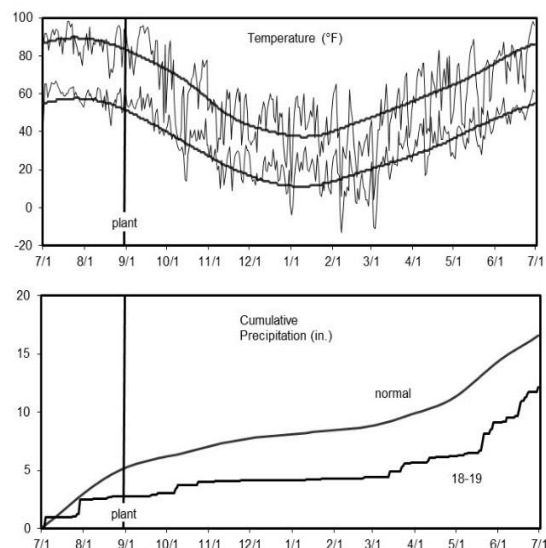
<sup>1</sup>Type: H=hybrid. OP=open pollinated.

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### Akron, Colorado

Jerry Johnson, Ed Asfeld, and Sally Jones-Diamond  
Colorado State University

Planted: 8/31/2018 in 10-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 7/27 and 8/1/2019  
Herbicides: None  
Insecticides: None  
Irrigation: 0.5 in. after planting  
Previous crop: NA  
Soil test: NA  
Fertilizer: 150-50-0-0 lb N-P-K-S fertilizer in fall  
Soil type: Weld silt loam  
Elevation: 4537 ft Latitude: 40° 9'N  
Comments: Despite some winter stand losses, yields were above average for the year.



**Table 10. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Akron, CO**

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2,3</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |      |      | Plant height (in.) | 50% bloom (DOY) | Maturity (DOY) | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|-----------------------------|------|-------|------------------------|------|------|---------------------|------|------|--------------------|-----------------|----------------|---------|-------------|
|                                   |                   | 2019                        | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | 2019 | 2018 |                    |                 |                |         |             |
| <b>CROPLAN by WinField</b>        |                   |                             |      |       |                        |      |      |                     |      |      |                    |                 |                |         |             |
| CP115WRR                          | OP                | 1850                        | 1172 | 1511  | 90                     | 44   | 67   | 56                  | 41   | 138  | 200                | 34.2            | 24.7           |         |             |
| CP225WRR                          | OP                | 1477                        | 1648 | 1563  | 72                     | 29   | 63   | 46                  | 41   | 141  | 202                | 34.1            | 23.7           |         |             |
| CP320WRR                          | OP                | 2045                        | 1415 | 1730  | 99                     | 32   | 73   | 52                  | 39   | 139  | 200                | 37.0            | 23.8           |         |             |
| <b>Kansas State University</b>    |                   |                             |      |       |                        |      |      |                     |      |      |                    |                 |                |         |             |
| KS4670                            | OP                | 1731                        | 1810 | 1770  | 84                     | 60   | 82   | 71                  | 44   | 137  | 200                | 34.7            | 24.5           |         |             |
| KS4719                            | OP                | <b>2546</b>                 | ---  | ---   | 123                    | 61   | ---  | ---                 | 47   | 142  | 200                | 31.9            | 23.4           |         |             |
| KSR4723                           | OP                | <b>2617</b>                 | 1314 | 1966  | 127                    | 59   | 61   | 60                  | 46   | 137  | 199                | 35.2            | 24.3           |         |             |
| KSR4767                           | OP                | 2009                        | ---  | ---   | 97                     | 60   | ---  | ---                 | 47   | 139  | 202                | 32.2            | 23.6           |         |             |
| Riley                             | OP                | <b>2145</b>                 | 1175 | 1660  | 104                    | 57   | 67   | 62                  | 42   | 138  | 200                | 35.1            | 25.1           |         |             |
| Sumner                            | OP                | <b>2282</b>                 | 906  | 1594  | 111                    | 64   | 63   | 64                  | 46   | 138  | 200                | 34.4            | 25.3           |         |             |
| Surefire                          | OP                | 1802                        | 905  | 1353  | 87                     | 35   | 67   | 51                  | 47   | 139  | 202                | 34.7            | 23.8           |         |             |
| Wichita                           | OP                | 1614                        | 1550 | 1582  | 78                     | 36   | 73   | 55                  | 42   | 139  | 200                | 34.4            | 24.9           |         |             |
| <b>KWS-MOMONT</b>                 |                   |                             |      |       |                        |      |      |                     |      |      |                    |                 |                |         |             |
| QUARTZ                            | OP                | <b>2267</b>                 | 1415 | 1841  | 110                    | 42   | 77   | 59                  | 40   | 138  | 201                | 32.5            | 23.4           |         |             |
| <b>Ohlde Seed Farms</b>           |                   |                             |      |       |                        |      |      |                     |      |      |                    |                 |                |         |             |
| Torrington                        | OP                | 1953                        | 1377 | 1665  | 95                     | 45   | 73   | 59                  | 46   | 138  | 200                | 34.5            | 23.8           |         |             |
| <b>Star Specialty Seeds, Inc.</b> |                   |                             |      |       |                        |      |      |                     |      |      |                    |                 |                |         |             |
| Star 915W                         | OP                | <b>2336</b>                 | 783  | 1560  | 113                    | 45   | 60   | 52                  | 42   | 138  | 203                | 37.0            | 24.7           |         |             |
| Star 930W                         | OP                | <b>2135</b>                 | 1384 | 1759  | 104                    | 43   | 70   | 56                  | 43   | 139  | 200                | 33.9            | 24.0           |         |             |
| <b>Mean</b>                       |                   | 2062                        | 1297 | ---   | ---                    | 47   | 69   | ---                 | 43   | 139  | 201                | 34.5            | 24.2           |         |             |
| <b>CV</b>                         |                   | 23                          | 40   | ---   | ---                    | 30   | 12   | ---                 | 7    | 0.9  | 0.5                | 5.6             | 2.9            |         |             |
| <b>LSD (0.05)</b>                 |                   | 511                         | NS   | ---   | ---                    | 20   | 12   | ---                 | 5    | 2    | 2                  | NS              | NS             |         |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

<sup>3</sup>Yield of the OP trial is significant at P<0.2.



**Table 11. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Akron, CO**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |    | Plant height (in.) | 50% bloom (DOY) | Maturity (DOY) | Oil (%) | Protein (%) |
|--------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|----|--------------------|-----------------|----------------|---------|-------------|
|                          |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               |    |                    |                 |                |         |             |
| <b>Bayer CropScience</b> |                   |                           |      |       |                        |      |      |                     |    |                    |                 |                |         |             |
| CWH189D                  | H                 | <b>2904</b>               | 1333 | 2118  | 122                    | 45   | 57   | 51                  | 42 | 138                | 203             | <b>37.1</b>    | 24.2    |             |
| CWH190D                  | H                 | <b>2712</b>               | 2213 | 2462  | 114                    | 66   | 50   | 58                  | 46 | 136                | 201             | <b>36.7</b>    | 24.3    |             |
| CWH249D                  | H                 | 2291                      | ---  | ---   | 97                     | 77   | ---  | ---                 | 42 | 137                | 201             | <b>34.2</b>    | 24.3    |             |
| CWH317D                  | H                 | <b>3221</b>               | ---  | ---   | 136                    | 62   | ---  | ---                 | 40 | 137                | 202             | 34.0           | 24.2    |             |
| <b>KWS-MOMONT</b>        |                   |                           |      |       |                        |      |      |                     |    |                    |                 |                |         |             |
| HAMOUR                   | H                 | 1785                      | ---  | ---   | 75                     | 31   | ---  | ---                 | 43 | 139                | 203             | <b>35.1</b>    | 24.5    |             |
| MH 14ES125               | H                 | 1675                      | ---  | ---   | 71                     | 16   | ---  | ---                 | 44 | 141                | 205             | <b>36.9</b>    | 25.2    |             |
| MH 15AY085               | H                 | 1604                      | ---  | ---   | 68                     | 7    | ---  | ---                 | 42 | 146                | ---             | <b>34.6</b>    | 25.4    |             |
| MH 15HT227               | H                 | <b>2945</b>               | ---  | ---   | 124                    | 51   | ---  | ---                 | 41 | 139                | 206             | <b>36.9</b>    | 25.1    |             |
| MH 15HT229               | H                 | 2256                      | ---  | ---   | 95                     | 62   | ---  | ---                 | 39 | 139                | 205             | <b>37.1</b>    | 24.8    |             |
| <b>Limagrain Cereals</b> |                   |                           |      |       |                        |      |      |                     |    |                    |                 |                |         |             |
| Advocat                  | H                 | 1939                      | ---  | ---   | 82                     | 40   | ---  | ---                 | 41 | 137                | 204             | <b>36.5</b>    | 25.1    |             |
| Architect                | H                 | <b>2730</b>               | ---  | ---   | 115                    | 66   | ---  | ---                 | 42 | 138                | 205             | <b>35.1</b>    | 24.9    |             |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |       |                        |      |      |                     |    |                    |                 |                |         |             |
| Phoenix CL               | H                 | <b>3106</b>               | ---  | ---   | 131                    | 44   | ---  | ---                 | 39 | 138                | 203             | <b>36.6</b>    | 24.8    |             |
| Plurax CL                | H                 | 1855                      | ---  | ---   | 78                     | 58   | ---  | ---                 | 42 | 137                | 201             | <b>34.9</b>    | 24.4    |             |
| Popular                  | H                 | <b>2384</b>               | 1683 | 2033  | 100                    | 65   | 57   | 61                  | 43 | 137                | 201             | <b>35.5</b>    | 24.8    |             |
| <b>Mean</b>              |                   | 2374                      | 1864 | ---   | ---                    | 49   | 41   | ---                 | 42 | 139                | 203             | 35.8           | 24.7    |             |
| <b>CV</b>                |                   | 21                        | 37   | ---   | ---                    | 31   | 36   | ---                 | 5  | 0.7                | 0.5             | 3.9            | 2.9     |             |
| <b>LSD (0.05)</b>        |                   | 902                       | NS   | ---   | ---                    | 26   | 21   | ---                 | 3  | 2                  | 2               | 3.0            | NS      |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

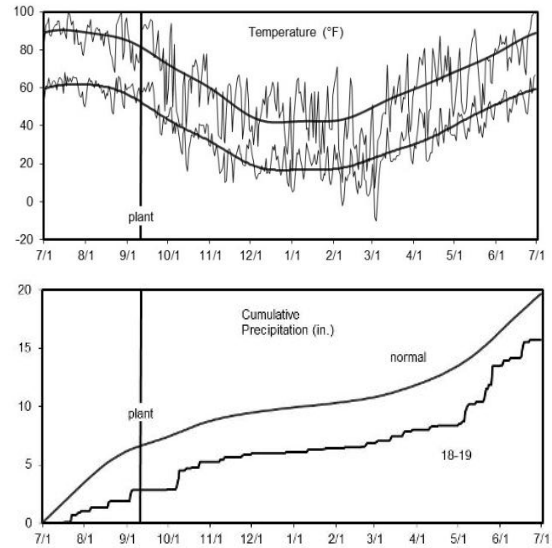
<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

<sup>3</sup>Yield of the OP trial is significant at P<0.2.

**Burlington, Colorado**

Jerry Johnson, Ed Asfeld, Sally Jones-Diamond, and Rob Myer  
Colorado State University

Planted: 9/11/2018 in 10-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 7/11/2019  
Herbicides: None  
Insecticides: None  
Irrigation: None  
Previous crop: Fallow  
Soil test: NA  
Fertilizer: 57-24-0-10 lb N-P-K-S fertilizer in fall  
Soil type: Silt loam  
Elevation: 3719 ft Latitude: 39° 13'N  
Comments: Although yields and test weights were low, oil contents were average or slightly above.



**Table 12. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Burlington, CO**

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |     | Plant height (in.) | Fall vigor (1-5) | Test weight (lb/bu) | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|-----|--------------------|------------------|---------------------|---------|-------------|
|                                   |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               |     |                    |                  |                     |         |             |
| <b>CROPLAN by WinField</b>        |                   |                           |      |       |                        |      |      |                     |     |                    |                  |                     |         |             |
| CP115WRR                          | OP                | 264                       | ---  | ---   | 70                     | ---  | ---  | ---                 | --- | ---                | 4.0              | 35.9                | 39.4    | 23.9        |
| CP225WRR                          | OP                | 304                       | ---  | ---   | 81                     | ---  | ---  | ---                 | --- | ---                | 4.3              | 32.9                | 38.6    | 23.2        |
| CP320WRR                          | OP                | <b>534</b>                | ---  | ---   | 142                    | ---  | ---  | ---                 | --- | ---                | 4.3              | 39.1                | 39.2    | 23.2        |
| <b>Kansas State University</b>    |                   |                           |      |       |                        |      |      |                     |     |                    |                  |                     |         |             |
| KS4670                            | OP                | 326                       | ---  | ---   | 86                     | ---  | ---  | ---                 | --- | ---                | 3.7              | 35.9                | 38.7    | 22.7        |
| KS4719                            | OP                | <b>447</b>                | ---  | ---   | 119                    | ---  | ---  | ---                 | --- | ---                | 4.3              | 38.1                | 40.0    | 23.5        |
| KSR4723                           | OP                | 325                       | ---  | ---   | 86                     | ---  | ---  | ---                 | --- | ---                | 4.0              | 36.6                | 40.9    | 22.9        |
| KSR4767                           | OP                | 265                       | ---  | ---   | 70                     | ---  | ---  | ---                 | --- | ---                | 4.0              | 30.6                | 39.0    | 24.1        |
| Riley                             | OP                | <b>607</b>                | ---  | ---   | 161                    | ---  | ---  | ---                 | --- | ---                | 4.0              | 43.3                | 39.2    | 23.1        |
| Sumner                            | OP                | 153                       | ---  | ---   | 41                     | ---  | ---  | ---                 | --- | ---                | 3.7              | 35.1                | 40.8    | 23.6        |
| Surefire                          | OP                | 376                       | ---  | ---   | 100                    | ---  | ---  | ---                 | --- | ---                | 4.0              | 35.4                | 39.5    | 23.6        |
| Wichita                           | OP                | <b>459</b>                | ---  | ---   | 122                    | ---  | ---  | ---                 | --- | ---                | 4.0              | 39.7                | 40.4    | 23.1        |
| <b>KWS-MOMONT</b>                 |                   |                           |      |       |                        |      |      |                     |     |                    |                  |                     |         |             |
| QUARTZ                            | OP                | 157                       | ---  | ---   | 42                     | ---  | ---  | ---                 | --- | ---                | 4.0              | 32.5                | 39.0    | 22.3        |
| <b>Ohlde Seed Farms</b>           |                   |                           |      |       |                        |      |      |                     |     |                    |                  |                     |         |             |
| Torrington                        | OP                | <b>617</b>                | ---  | ---   | 164                    | ---  | ---  | ---                 | --- | ---                | 4.3              | 40.4                | 39.2    | 23.2        |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |      |       |                        |      |      |                     |     |                    |                  |                     |         |             |
| Star 915W                         | OP                | 341                       | ---  | ---   | 91                     | ---  | ---  | ---                 | --- | ---                | 4.0              | 39.0                | 40.6    | 24.8        |
| Star 930W                         | OP                | <b>407</b>                | ---  | ---   | 108                    | ---  | ---  | ---                 | --- | ---                | 4.0              | 38.9                | 39.7    | 24.0        |
| <b>Mean</b>                       |                   | 377                       | ---  | ---   | ---                    | ---  | ---  | ---                 | --- | ---                | 4.0              | 37.2                | 39.6    | 23.4        |
| <b>CV</b>                         |                   | 45                        | ---  | ---   | ---                    | ---  | ---  | ---                 | --- | ---                | 11.3             | 14.8                | 3.4     | 2.9         |
| <b>LSD (0.05)</b>                 |                   | 240                       | ---  | ---   | ---                    | ---  | ---  | ---                 | --- | ---                | NS               | NS                  | NS      | NS          |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Table 13. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Burlington, CO**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) | Plant height (in.) | Fall vigor (1-5) | Test weight (lb/bu) |      | Oil (%) | Protein (%) |
|--------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|--------------------|------------------|---------------------|------|---------|-------------|
|                          |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (in.)              | (1-5)            | (lb/bu)             | (%)  | (%)     |             |
| <b>Bayer CropScience</b> |                   |                           |      |       |                        |      |      |                     |                    |                  |                     |      |         |             |
| CWH189D                  | H                 | <b>585</b>                | ---  | ---   | 172                    | ---  | ---  | ---                 | ---                | 4.0              | 43.6                | 41.0 | 22.6    |             |
| CWH190D                  | H                 | <b>535</b>                | ---  | ---   | 157                    | ---  | ---  | ---                 | ---                | 4.0              | 41.8                | 39.7 | 23.0    |             |
| CWH249D                  | H                 | <b>580</b>                | ---  | ---   | 170                    | ---  | ---  | ---                 | ---                | 4.0              | 40.3                | 37.1 | 23.5    |             |
| CWH317D                  | H                 | <b>407</b>                | ---  | ---   | 120                    | ---  | ---  | ---                 | ---                | 3.7              | 37.5                | 38.8 | 22.8    |             |
| <b>KWS-MOMONT</b>        |                   |                           |      |       |                        |      |      |                     |                    |                  |                     |      |         |             |
| HAMOUR                   | H                 | 197                       | ---  | ---   | 58                     | ---  | ---  | ---                 | ---                | 3.7              | 38.6                | 37.6 | 22.7    |             |
| MH 14ES125               | H                 | <b>326</b>                | ---  | ---   | 96                     | ---  | ---  | ---                 | ---                | 4.0              | 40.9                | 35.4 | 23.9    |             |
| MH 15AY085               | H                 | 147                       | ---  | ---   | 43                     | ---  | ---  | ---                 | ---                | 4.3              | 36.5                | 38.7 | 24.0    |             |
| MH 15HT227               | H                 | 209                       | ---  | ---   | 61                     | ---  | ---  | ---                 | ---                | 4.0              | 39.6                | 38.9 | 22.8    |             |
| MH 15HT229               | H                 | 297                       | ---  | ---   | 87                     | ---  | ---  | ---                 | ---                | 3.7              | 41.9                | 39.4 | 22.8    |             |
| <b>Limagrain Cereals</b> |                   |                           |      |       |                        |      |      |                     |                    |                  |                     |      |         |             |
| Advocat                  | H                 | 160                       | ---  | ---   | 47                     | ---  | ---  | ---                 | ---                | 4.0              | 40.6                | 36.1 | 22.8    |             |
| Architect                | H                 | <b>324</b>                | ---  | ---   | 95                     | ---  | ---  | ---                 | ---                | 3.7              | 36.5                | 40.0 | 21.9    |             |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |       |                        |      |      |                     |                    |                  |                     |      |         |             |
| Phoenix CL               | H                 | 273                       | ---  | ---   | 80                     | ---  | ---  | ---                 | ---                | 3.7              | 43.8                | 37.2 | 22.8    |             |
| Plurax CL                | H                 | 307                       | ---  | ---   | 90                     | ---  | ---  | ---                 | ---                | 4.0              | 40.1                | 38.6 | 23.3    |             |
| Popular                  | H                 | <b>354</b>                | ---  | ---   | 104                    | ---  | ---  | ---                 | ---                | 3.3              | 45.6                | 40.4 | 22.0    |             |
| <b>Mean</b>              |                   | 340                       | ---  | ---   | ---                    | ---  | ---  | ---                 | ---                | 3.9              | 40.5                | 38.4 | 22.9    |             |
| <b>CV</b>                |                   | 46                        | ---  | ---   | ---                    | ---  | ---  | ---                 | ---                | 13.0             | 10.2                | 6.9  | 2.2     |             |
| <b>LSD (0.05)</b>        |                   | 267                       | ---  | ---   | ---                    | ---  | ---  | ---                 | ---                | NS               | NS                  | NS   | NS      |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

Fruita, Colorado

Reza Keshavarz Afshar  
Colorado State University

Planted: 8/31/2018 in 6.5-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 7/5/2019  
Herbicides: 1 qt/a Treflan, 18 oz/a Assure II  
Insecticides: None  
Irrigation: Furrow  
Previous crop: Wheat  
Soil test: NA  
Fertilizer: 19-39-45-12 lb N-P-K-S fertilizer in fall  
92-0-0 lb N-P-K fertilizer in spring  
Soil type: Youngston clay loam  
Elevation: 4604 ft Latitude: 39° 11'N  
Comments: All varieties showed excellent winter survival and very high oil content. Some bird damage was observed.

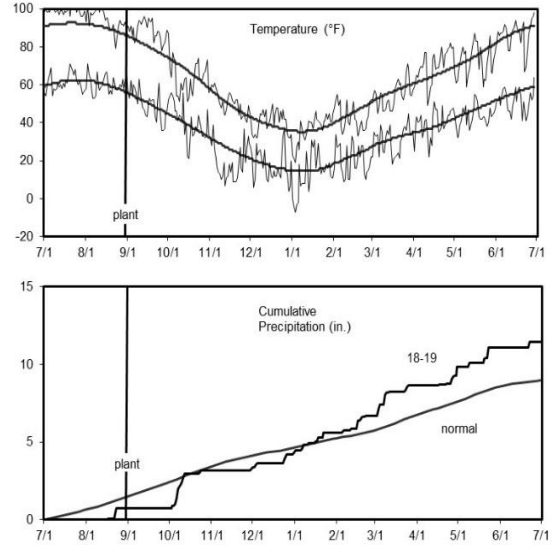


Table 14. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Fruita, CO

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) <sup>3</sup> |      |      | Plant height (in.) | Fall stand (0-10) | Fall vigor (1-5) | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|----------------------------------|------|------|--------------------|-------------------|------------------|---------|-------------|
|                                   |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.                            | 2019 | 2018 |                    |                   |                  |         |             |
| <b>CROPLAN by WinField</b>        |                   |                           |      |       |                        |      |      |                                  |      |      |                    |                   |                  |         |             |
| CP115WRR                          | OP                | 1629                      | ---  | ---   | 87                     | 100  | ---  | ---                              | 53   | 7.0  | 2.3                | 45.9              | 18.8             |         |             |
| CP225WRR                          | OP                | 1805                      | ---  | ---   | 97                     | 97   | ---  | ---                              | 56   | 8.0  | 2.7                | 45.9              | 18.8             |         |             |
| CP320WRR                          | OP                | 1928                      | ---  | ---   | 104                    | 92   | ---  | ---                              | 52   | 7.0  | 2.7                | 42.7              | 21.4             |         |             |
| <b>Kansas State University</b>    |                   |                           |      |       |                        |      |      |                                  |      |      |                    |                   |                  |         |             |
| KS4670                            | OP                | 1919                      | ---  | ---   | 103                    | 88   | ---  | ---                              | 54   | 5.7  | 2.7                | 44.4              | 18.5             |         |             |
| KS4719                            | OP                | 2182                      | ---  | ---   | 117                    | 97   | ---  | ---                              | 51   | 7.7  | 3.0                | 42.4              | 21.3             |         |             |
| KSR4723                           | OP                | 2070                      | ---  | ---   | 111                    | 100  | ---  | ---                              | 52   | 7.7  | 2.7                | 45.4              | 19.5             |         |             |
| KSR4767                           | OP                | 1647                      | ---  | ---   | 88                     | 100  | ---  | ---                              | 55   | 7.3  | 3.0                | 42.3              | 21.8             |         |             |
| Riley                             | OP                | 2141                      | ---  | ---   | 115                    | 92   | ---  | ---                              | 50   | 8.0  | 2.3                | 44.5              | 20.1             |         |             |
| Sumner                            | OP                | 2167                      | ---  | ---   | 116                    | 100  | ---  | ---                              | 55   | 7.0  | 3.0                | 46.2              | 18.6             |         |             |
| Surefire                          | OP                | 1999                      | ---  | ---   | 107                    | 100  | ---  | ---                              | 54   | 8.3  | 2.3                | 42.0              | 21.1             |         |             |
| Wichita                           | OP                | 1719                      | ---  | ---   | 92                     | 93   | ---  | ---                              | 56   | 7.0  | 2.7                | 42.1              | 19.9             |         |             |
| <b>KWS-MOMONT</b>                 |                   |                           |      |       |                        |      |      |                                  |      |      |                    |                   |                  |         |             |
| QUARTZ                            | OP                | 2129                      | ---  | ---   | 114                    | 95   | ---  | ---                              | 49   | 6.7  | 2.0                | 46.5              | 17.3             |         |             |
| <b>Ohlde Seed Farms</b>           |                   |                           |      |       |                        |      |      |                                  |      |      |                    |                   |                  |         |             |
| Torrington                        | OP                | 1174                      | ---  | ---   | 63                     | 93   | ---  | ---                              | 57   | 6.3  | 2.3                | 40.5              | 19.9             |         |             |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |      |       |                        |      |      |                                  |      |      |                    |                   |                  |         |             |
| Star 915W                         | OP                | 1541                      | ---  | ---   | 83                     | 93   | ---  | ---                              | 51   | 6.7  | 1.7                | 42.6              | 21.1             |         |             |
| Star 930W                         | OP                | 1870                      | ---  | ---   | 100                    | 92   | ---  | ---                              | 53   | 7.7  | 3.0                | 44.6              | 19.4             |         |             |
| <b>Mean</b>                       |                   | 1861                      | ---  | ---   | ---                    | 95   | ---  | ---                              | 53   | 7.2  | 2.6                | 43.9              | 19.8             |         |             |
| <b>CV</b>                         |                   | 29                        | ---  | ---   | ---                    | 5    | ---  | ---                              | 5    | 16.6 | 21.9               | 6.3               | 8.5              |         |             |
| <b>LSD (0.05)</b>                 |                   | NS                        | ---  | ---   | ---                    | 7    | ---  | ---                              | 5    | NS   | NS                 | NS                | NS               |         |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

<sup>3</sup>Winter survival significant at P<0.1 and P<0.2 in the OP and hybrid trials, respectively.

**Table 15. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Fruita, CO**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      | Yield (% of test avg.) |      |      | Winter survival (%) <sup>3</sup> |       | Plant height | Fall stand | Fall vigor | Oil  | Protein |
|--------------------------|-------------------|---------------------------|------|------------------------|------|------|----------------------------------|-------|--------------|------------|------------|------|---------|
|                          |                   | 2019                      | 2018 | 2-yr.                  | 2019 | 2019 | 2018                             | 2-yr. | (in.)        | (0-10)     | (1-5)      | (%)  | (%)     |
| <b>Bayer CropScience</b> |                   |                           |      |                        |      |      |                                  |       |              |            |            |      |         |
| CWH189D                  | H                 | 1438                      | ---  | ---                    | 108  | 88   | ---                              | ---   | 49           | 3.3        | 1.3        | 45.8 | 18.3    |
| CWH190D                  | H                 | 1705                      | ---  | ---                    | 128  | 90   | ---                              | ---   | 45           | 4.3        | 1.3        | 48.3 | 17.3    |
| CWH249D                  | H                 | 953                       | ---  | ---                    | 72   | 95   | ---                              | ---   | 49           | 6.7        | 2.3        | 46.6 | 17.7    |
| CWH317D                  | H                 | 1416                      | ---  | ---                    | 106  | 87   | ---                              | ---   | 46           | 5.0        | 2.0        | 43.9 | 17.9    |
| <b>KWS-MOMONT</b>        |                   |                           |      |                        |      |      |                                  |       |              |            |            |      |         |
| HAMOUR                   | H                 | 1364                      | ---  | ---                    | 103  | 93   | ---                              | ---   | 50           | 7.0        | 3.0        | 47.2 | 16.9    |
| MH 14ES125               | H                 | 1229                      | ---  | ---                    | 92   | 95   | ---                              | ---   | 51           | 6.3        | 2.7        | 46.2 | 18.9    |
| MH 15AY085               | H                 | 1043                      | ---  | ---                    | 78   | 90   | ---                              | ---   | 50           | 6.3        | 2.7        | 44.0 | 18.8    |
| MH 15HT227               | H                 | 1349                      | ---  | ---                    | 101  | 97   | ---                              | ---   | 46           | 6.7        | 2.7        | 47.5 | 17.9    |
| MH 15HT229               | H                 | 1277                      | ---  | ---                    | 95   | 85   | ---                              | ---   | 47           | 7.0        | 3.0        | 46.4 | 18.7    |
| <b>Limagrain Cereals</b> |                   |                           |      |                        |      |      |                                  |       |              |            |            |      |         |
| Advocat                  | H                 | 1405                      | ---  | ---                    | 105  | 98   | ---                              | ---   | 53           | 8.3        | 4.0        | 46.4 | 17.4    |
| Architect                | H                 | 1567                      | ---  | ---                    | 117  | 92   | ---                              | ---   | 45           | 6.3        | 2.3        | 47.6 | 17.4    |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |                        |      |      |                                  |       |              |            |            |      |         |
| Phoenix CL               | H                 | 1316                      | ---  | ---                    | 99   | 95   | ---                              | ---   | 54           | 7.0        | 2.7        | 46.3 | 17.6    |
| Plurax CL                | H                 | 1122                      | ---  | ---                    | 84   | 95   | ---                              | ---   | 47           | 6.3        | 1.7        | 46.3 | 17.9    |
| Popular                  | H                 | 1341                      | ---  | ---                    | 101  | 98   | ---                              | ---   | 49           | 6.3        | 2.7        | 47.1 | 17.6    |
| <b>Mean</b>              |                   | 1332                      | ---  | ---                    | ---  | 93   | ---                              | ---   | 49           | 6.2        | 2.5        | 46.4 | 17.9    |
| <b>CV</b>                |                   | 29                        | ---  | ---                    | ---  | 6    | ---                              | ---   | 6            | 15.1       | 26.4       | 3.0  | 4.1     |
| <b>LSD (0.05)</b>        |                   | NS                        | ---  | ---                    | ---  | 6    | ---                              | ---   | 5            | 1.6        | 1.1        | NS   | NS      |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

<sup>3</sup>Winter survival significant at P<0.1 and P<0.2 in the OP and hybrid trials, respectively.

Walsh, Colorado

Kevin Larson  
Colorado State University

Planted: 9/12/2018 in 12-in. rows  
Harvested: 7/25/2019  
Soil type: Baca clay loam  
Elevation: 3974 ft Latitude: 37° 26'N  
Comments: Winter survival was excellent at this site.

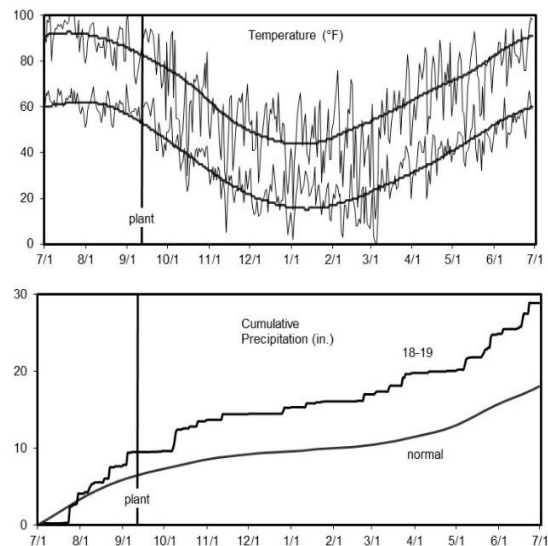


Table 16. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Walsh, CO

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |       | Winter survival (0-10) |      |       | Plant height (in.) | Moisture (%) | Test           |         |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|-------|------------------------|------|-------|--------------------|--------------|----------------|---------|
|                                   |                   | 2019         | 2018 | 2-yr. | 2019                   | 2018 | 2-yr. | 2019                   | 2018 | 2-yr. |                    |              | weight (lb/bu) | Oil (%) |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |       |                        |      |       |                    |              |                |         |
| CP115WRR                          | OP                | <b>1023</b>  | ---  | ---   | 94                     | 9.2  | ---   | ---                    | 40   | ---   | ---                | 33.3         | 26.9           |         |
| CP225WRR                          | OP                | 693          | ---  | ---   | 64                     | 9.6  | ---   | ---                    | 42   | ---   | ---                | 30.7         | 26.6           |         |
| CP320WRR                          | OP                | <b>1502</b>  | ---  | ---   | 138                    | 9.8  | ---   | ---                    | 39   | ---   | ---                | 31.6         | 26.7           |         |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |       |                        |      |       |                    |              |                |         |
| KS4670                            | OP                | <b>982</b>   | ---  | ---   | 90                     | 9.8  | ---   | ---                    | 39   | ---   | ---                | 34.1         | 26.7           |         |
| KS4719                            | OP                | <b>1271</b>  | ---  | ---   | 117                    | 9.7  | ---   | ---                    | 43   | ---   | ---                | 33.1         | 27.0           |         |
| KSR4723                           | OP                | 833          | ---  | ---   | 76                     | 9.7  | ---   | ---                    | 41   | ---   | ---                | 30.9         | 26.3           |         |
| KSR4767                           | OP                | <b>916</b>   | ---  | ---   | 84                     | 9.5  | ---   | ---                    | 40   | ---   | ---                | 30.6         | 26.2           |         |
| Riley                             | OP                | <b>1353</b>  | ---  | ---   | 124                    | 10.0 | ---   | ---                    | 39   | ---   | ---                | 33.8         | 26.7           |         |
| Sumner                            | OP                | 702          | ---  | ---   | 64                     | 9.6  | ---   | ---                    | 38   | ---   | ---                | 31.8         | 26.7           |         |
| Surefire                          | OP                | <b>1345</b>  | ---  | ---   | 123                    | 9.7  | ---   | ---                    | 40   | ---   | ---                | 31.7         | 26.6           |         |
| Wichita                           | OP                | <b>1370</b>  | ---  | ---   | 126                    | 9.9  | ---   | ---                    | 41   | ---   | ---                | 30.9         | 26.5           |         |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |       |                        |      |       |                    |              |                |         |
| QUARTZ                            | OP                | <b>1469</b>  | ---  | ---   | 135                    | 9.4  | ---   | ---                    | 41   | ---   | ---                | 33.2         | 25.8           |         |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |       |                        |      |       |                    |              |                |         |
| Torrington                        | OP                | <b>1263</b>  | ---  | ---   | 116                    | 9.9  | ---   | ---                    | 45   | ---   | ---                | 31.2         | 26.3           |         |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |       |                        |      |       |                    |              |                |         |
| Star 915W                         | OP                | 520          | ---  | ---   | 48                     | 8.3  | ---   | ---                    | 36   | ---   | ---                | 31.1         | 26.7           |         |
| Star 930W                         | OP                | <b>1106</b>  | ---  | ---   | 101                    | 9.5  | ---   | ---                    | 40   | ---   | ---                | 30.3         | 25.7           |         |
| <b>Mean</b>                       |                   | 1090         | ---  | ---   | ---                    | 9.6  | ---   | ---                    | 40   | ---   | ---                | 31.9         | 26.5           |         |
| <b>CV</b>                         |                   | ---          | ---  | ---   | ---                    | ---  | ---   | ---                    | ---  | ---   | ---                | 6.1          | 2.0            |         |
| <b>LSD (0.05)</b>                 |                   | 618          | ---  | ---   | ---                    | 0.6  | ---   | ---                    | ---  | ---   | ---                | NS           | NS             |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 17. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Walsh, CO**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Winter survival (0-10) |              |                | Plant height (in.) | Test    |             |  |
|--------------------------|-------------------|--------------|------|-------|------------------------|------|------|------------------------|--------------|----------------|--------------------|---------|-------------|--|
|                          |                   | 2019         | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.                  | Moisture (%) | weight (lb/bu) |                    | Oil (%) | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |      |       |                        |      |      |                        |              |                |                    |         |             |  |
| CWH189D                  | H                 | <b>900</b>   | ---  | ---   | 108                    | 9.1  | ---  | ---                    | 40           | ---            | ---                | 24.7    | 25.6        |  |
| CWH190D                  | H                 | <b>702</b>   | ---  | ---   | 84                     | 9.5  | ---  | ---                    | 34           | ---            | ---                | 24.7    | 25.3        |  |
| CWH249D                  | H                 | <b>685</b>   | ---  | ---   | 82                     | 9.4  | ---  | ---                    | 36           | ---            | ---                | 28.5    | 26.4        |  |
| CWH317D                  | H                 | <b>1254</b>  | ---  | ---   | 150                    | 9.6  | ---  | ---                    | 35           | ---            | ---                | 28.2    | 26.5        |  |
| <b>KWS-MOMONT</b>        |                   |              |      |       |                        |      |      |                        |              |                |                    |         |             |  |
| HAMOUR                   | H                 | 553          | ---  | ---   | 66                     | 9.1  | ---  | ---                    | 36           | ---            | ---                | 27.7    | 26.4        |  |
| MH 14ES125               | H                 | <b>776</b>   | ---  | ---   | 93                     | 9.4  | ---  | ---                    | 41           | ---            | ---                | 28.0    | 26.4        |  |
| MH 15AY085               | H                 | 363          | ---  | ---   | 44                     | 8.5  | ---  | ---                    | 36           | ---            | ---                | 26.3    | 26.5        |  |
| MH 15HT229               | H                 | <b>916</b>   | ---  | ---   | 110                    | 9.6  | ---  | ---                    | 39           | ---            | ---                | 31.0    | 26.4        |  |
| MH15HT227                | H                 | <b>784</b>   | ---  | ---   | 94                     | 9.7  | ---  | ---                    | 34           | ---            | ---                | 24.8    | 25.6        |  |
| <b>Limagrain Cereals</b> |                   |              |      |       |                        |      |      |                        |              |                |                    |         |             |  |
| Advocat                  | H                 | <b>858</b>   | ---  | ---   | 103                    | 9.8  | ---  | ---                    | 34           | ---            | ---                | 27.1    | 26.5        |  |
| Architect                | H                 | <b>1295</b>  | ---  | ---   | 155                    | 9.5  | ---  | ---                    | 37           | ---            | ---                | 29.6    | 26.9        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |      |       |                        |      |      |                        |              |                |                    |         |             |  |
| Phoenix CL               | H                 | <b>825</b>   | ---  | ---   | 99                     | 9.0  | ---  | ---                    | 37           | ---            | ---                | 28.4    | 25.5        |  |
| Plurax CL                | H                 | <b>716</b>   | ---  | ---   | 86                     | 9.7  | ---  | ---                    | 34           | ---            | ---                | 24.6    | 26.4        |  |
| Popular                  | H                 | <b>1048</b>  | ---  | ---   | 126                    | 9.9  | ---  | ---                    | 36           | ---            | ---                | 30.8    | 26.5        |  |
| <b>Mean</b>              |                   | 834          | ---  | ---   | ---                    | 9.4  | ---  | ---                    | 36           | ---            | ---                | 27.5    | 26.2        |  |
| <b>CV</b>                |                   | ---          | ---  | ---   | ---                    | ---  | ---  | ---                    | ---          | ---            | ---                | 14.1    | 1.5         |  |
| <b>LSD (0.05)</b>        |                   | 677          | ---  | ---   | ---                    | 0.7  | ---  | ---                    | ---          | ---            | ---                | NS      | 0.9         |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

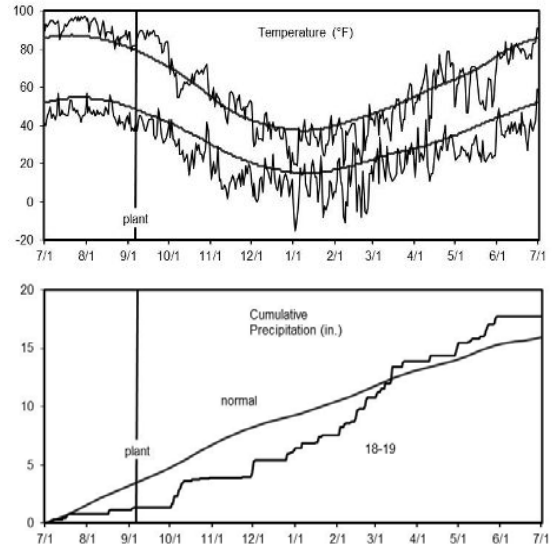
<sup>1</sup>Type: H=hybrid. OP=open pollinated.



**Yellow Jacket, Colorado**

Katie Russell  
Colorado State University

Planted: 9/7/2018  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Harvested: 7/29/2019  
 Herbicides: 22 oz/a Roundup preplant  
 Insecticides: None  
 Irrigation: None  
 Previous crop: Spring wheat  
 Soil test: NA  
 Fertilizer: NA  
 Soil type: Wetherill silt loam  
 Elevation: 6900 ft Latitude: 37° 32'N  
 Comments: Winter survival and yields have been challenged at this location for two consecutive years. However, oil contents have been very high.



**Table 18. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Yellow Jacket, CO**

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Plant height (in.) | 50% bloom (DOY) | Test weight (lb/bu) | Oil (%) | Protein (%) |             |
|-----------------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|--------------------|-----------------|---------------------|---------|-------------|-------------|
|                                   |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 |                    |                 |                     |         |             | 2-yr.       |
| <b>CROPLAN by WinField</b>        |                   |                           |      |       |                        |      |      |                    |                 |                     |         |             |             |
| CP115WRR                          | OP                | 1119                      | 383  | 751   | 116                    | 73   | 63   | 68                 | 43              | 162                 | 41.7    | 46.4        | 20.0        |
| CP225WRR                          | OP                | 752                       | 344  | 548   | 78                     | 50   | 65   | 58                 | 42              | 164                 | 43.7    | 46.5        | 19.1        |
| CP320WRR                          | OP                | 789                       | 537  | 663   | 82                     | 43   | 67   | 55                 | 38              | 169                 | 43.7    | 42.7        | <b>21.8</b> |
| <b>Kansas State University</b>    |                   |                           |      |       |                        |      |      |                    |                 |                     |         |             |             |
| KS4670                            | OP                | 809                       | 417  | 613   | 84                     | 50   | 70   | 60                 | 44              | 163                 | 42.0    | 44.4        | 20.5        |
| KS4719                            | OP                | 806                       | ---  | ---   | 84                     | 63   | ---  | ---                | 41              | 165                 | 45.8    | 43.5        | <b>22.4</b> |
| KSR4723                           | OP                | 1188                      | 322  | 755   | 124                    | 60   | 60   | 60                 | 41              | 164                 | 45.1    | 45.8        | 20.0        |
| KSR4767                           | OP                | 893                       | ---  | ---   | 93                     | 37   | ---  | ---                | 43              | 166                 | 44.5    | 43.7        | <b>22.2</b> |
| Riley                             | OP                | 1102                      | 448  | 775   | 115                    | 60   | 65   | 63                 | 38              | 162                 | 44.8    | 45.7        | 20.6        |
| Sumner                            | OP                | 773                       | 281  | 527   | 80                     | 47   | 63   | 55                 | 47              | 162                 | 42.4    | 46.1        | 20.9        |
| Surefire                          | OP                | 1255                      | 430  | 842   | 131                    | 63   | 77   | 70                 | 45              | 164                 | 43.1    | 44.7        | <b>22.8</b> |
| Wichita                           | OP                | 1039                      | 382  | 711   | 108                    | 53   | 67   | 60                 | 37              | 165                 | 43.8    | 45.1        | 21.7        |
| <b>KWS-MOMONT</b>                 |                   |                           |      |       |                        |      |      |                    |                 |                     |         |             |             |
| QUARTZ                            | OP                | 1455                      | 427  | 941   | 151                    | 60   | 60   | 60                 | 40              | 161                 | 44.9    | 46.2        | 19.4        |
| <b>Ohlde Seed Farms</b>           |                   |                           |      |       |                        |      |      |                    |                 |                     |         |             |             |
| Torrington                        | OP                | 828                       | 449  | 639   | 86                     | 53   | 67   | 60                 | 44              | 163                 | 40.8    | 42.2        | <b>22.6</b> |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |      |       |                        |      |      |                    |                 |                     |         |             |             |
| Star 915W                         | OP                | 838                       | 269  | 553   | 87                     | 60   | 57   | 58                 | 41              | 168                 | 43.0    | 46.3        | 21.2        |
| Star 930W                         | OP                | 809                       | 432  | 620   | 84                     | 37   | 67   | 52                 | 42              | 166                 | 44.2    | 44.0        | 21.7        |
| <b>Mean</b>                       |                   | 961                       | 396  | ---   | ---                    | 54   | 64   | ---                | 42              | 164                 | 43.7    | 44.9        | 21.1        |
| <b>CV</b>                         |                   | 28                        | 37   | ---   | ---                    | 34   | 14   | ---                | 8               | 1                   | 5.2     | 3.0         | 4.4         |
| <b>LSD (0.05)</b>                 |                   | NS                        | NS   | ---   | ---                    | NS   | 7    | ---                | NS              | 4                   | NS      | NS          | 2.0         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Table 19. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Yellow Jacket, CO**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |                |         | Plant height (in.) | 50% bloom (DOY) | Test        |  |
|--------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|----------------|---------|--------------------|-----------------|-------------|--|
|                          |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | weight (lb/bu) | Oil (%) |                    |                 | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| CWH189D                  | H                 | 1099                      | 368  | 733   | 91                     | 70   | 57   | 64                  | 42             | 166     | 44.4               | 46.8            | 19.1        |  |
| CWH190D                  | H                 | 882                       | 255  | 568   | 73                     | 43   | 55   | 49                  | 47             | 165     | 45.8               | <b>49.0</b>     | 18.9        |  |
| CWH249D                  | H                 | 1366                      | ---  | ---   | 114                    | 40   | ---  | ---                 | 48             | 163     | 43.1               | <b>47.7</b>     | 18.6        |  |
| CWH317D                  | H                 | 1133                      | ---  | ---   | 94                     | 63   | ---  | ---                 | 42             | 166     | 44.5               | 45.1            | 19.4        |  |
| <b>KWS-MOMONT</b>        |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| HAMOUR                   | H                 | 1230                      | 320  | 775   | 102                    | 73   | 60   | 67                  | 49             | 165     | 46.3               | <b>47.4</b>     | 17.5        |  |
| MH 14ES125               | H                 | 941                       | ---  | ---   | 78                     | 60   | ---  | ---                 | 44             | 164     | 42.6               | 45.6            | 21.4        |  |
| MH 15AY085               | H                 | 1121                      | 308  | 715   | 93                     | 73   | 60   | 67                  | 49             | 163     | 45.9               | <b>47.4</b>     | 18.1        |  |
| MH 15HT227               | H                 | 1243                      | ---  | ---   | 103                    | 57   | ---  | ---                 | 45             | 165     | 45.4               | <b>49.2</b>     | 17.8        |  |
| MH 15HT229               | H                 | 1007                      | 371  | 689   | 84                     | 73   | 70   | 72                  | 48             | 163     | 39.4               | <b>48.7</b>     | 18.9        |  |
| <b>Limagrain Cereals</b> |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| Advocat                  | H                 | 1191                      | ---  | ---   | 99                     | 47   | ---  | ---                 | 43             | 162     | 44.8               | <b>48.3</b>     | 19.1        |  |
| Architect                | H                 | 1909                      | ---  | ---   | 159                    | 67   | ---  | ---                 | 49             | 160     | 42.0               | <b>48.4</b>     | 18.1        |  |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |       |                        |      |      |                     |                |         |                    |                 |             |  |
| Phoenix CL               | H                 | 1216                      | 206  | 711   | 101                    | 60   | 42   | 51                  | 47             | 164     | 43.5               | <b>47.5</b>     | 18.2        |  |
| Plurax CL                | H                 | 1442                      | 443  | 942   | 120                    | 63   | 72   | 68                  | 42             | 161     | 45.7               | <b>47.9</b>     | 18.2        |  |
| Popular                  | H                 | 1049                      | 280  | 665   | 87                     | 53   | 53   | 53                  | 44             | 162     | 44.9               | <b>47.8</b>     | 18.3        |  |
| <b>Mean</b>              |                   | 1202                      | 330  | ---   | ---                    | 60   | 51   | ---                 | 46             | 163     | 44.1               | 47.6            | 18.7        |  |
| <b>CV</b>                |                   | 33                        | 54   | ---   | ---                    | 29   | 37   | ---                 | 7              | 2       | 4.8                | 2.2             | 5.7         |  |
| <b>LSD (0.05)</b>        |                   | NS                        | NS   | ---   | ---                    | NS   | NS   | ---                 | 5              | NS      | 3.7                | 2.2             | NS          |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

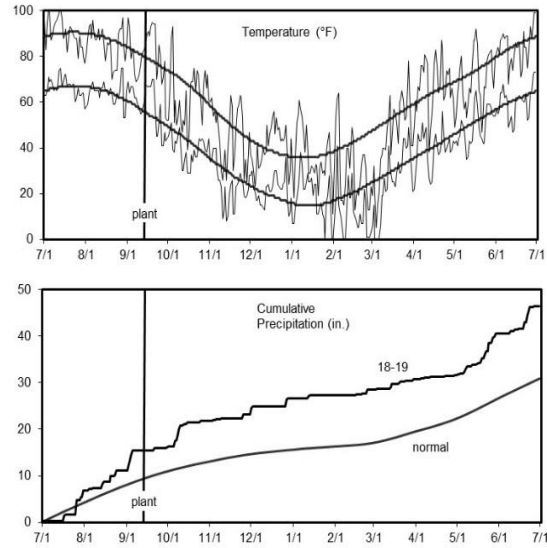
<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Belleville, Kansas**

Andrew Esser  
Kansas State University

Planted: 9/14/2018 in 10-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Swathed: 7/2/2019  
 Harvested: 7/15/2019  
 Herbicides: 10 oz/a Assure II  
 Insecticides: None  
 Irrigation: None  
 Previous crop: Wheat  
 Soil test: NA  
 Fertilizer: 0-0-0-0 lb N-P-K-S fertilizer in fall  
 90-0-0 lb N-P-K fertilizer in spring  
 Soil type: Crete silt loam  
 Elevation: 1530 ft Latitude: 39° 48'N  
 Comments: The location was challenged by a slow spring green up and poor spring vigor. Crown damage was caused by fluctuating winter temperatures.



**Table 20. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Belleville, KS**

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |         |     | Plant height (in.) | Moisture (%) | Test weight |  | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|---------|-----|--------------------|--------------|-------------|--|---------|-------------|
|                                   |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (lb/bu) | (%) |                    |              |             |  |         |             |
| <b>CROPLAN by WinField</b>        |                   |                           |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| CP115WRR                          | OP                | 488                       | ---  | ---   | 50                     | 47   | ---  | ---                 | ---     | 7.0 | 44.1               | 38.7         | <b>22.7</b> |  |         |             |
| CP225WRR                          | OP                | 589                       | ---  | ---   | 61                     | 27   | ---  | ---                 | ---     | 7.2 | 45.6               | 38.6         | 21.8        |  |         |             |
| CP320WRR                          | OP                | 758                       | ---  | ---   | 78                     | 62   | ---  | ---                 | ---     | 7.0 | 45.3               | 38.6         | 22.0        |  |         |             |
| <b>Kansas State University</b>    |                   |                           |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| KS4670                            | OP                | 794                       | ---  | ---   | 82                     | 57   | ---  | ---                 | ---     | 6.7 | 45.2               | 39.0         | 21.9        |  |         |             |
| KS4719                            | OP                | <b>1597</b>               | ---  | ---   | 165                    | 93   | ---  | ---                 | ---     | 7.1 | 45.0               | 39.2         | 21.6        |  |         |             |
| KSR4723                           | OP                | 1021                      | ---  | ---   | 105                    | 53   | ---  | ---                 | ---     | 6.8 | 46.9               | 39.5         | 21.9        |  |         |             |
| KSR4767                           | OP                | <b>1106</b>               | ---  | ---   | 114                    | 70   | ---  | ---                 | ---     | 7.5 | 45.5               | 39.3         | 22.1        |  |         |             |
| Riley                             | OP                | <b>1120</b>               | ---  | ---   | 116                    | 80   | ---  | ---                 | ---     | 6.4 | 45.6               | 39.5         | 22.1        |  |         |             |
| Sumner                            | OP                | 802                       | ---  | ---   | 83                     | 53   | ---  | ---                 | ---     | 7.1 | 43.3               | 38.6         | <b>23.0</b> |  |         |             |
| Surefire                          | OP                | 997                       | ---  | ---   | 103                    | 77   | ---  | ---                 | ---     | 7.2 | 45.6               | 38.9         | <b>23.0</b> |  |         |             |
| Wichita                           | OP                | <b>1107</b>               | ---  | ---   | 114                    | 65   | ---  | ---                 | ---     | 6.9 | 47.1               | 39.3         | <b>22.2</b> |  |         |             |
| <b>KWS-MOMONT</b>                 |                   |                           |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| QUARTZ                            | OP                | 841                       | ---  | ---   | 87                     | 57   | ---  | ---                 | ---     | 5.8 | 43.5               | 37.6         | 20.6        |  |         |             |
| <b>Ohlde Seed Farms</b>           |                   |                           |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| Torrington                        | OP                | <b>1412</b>               | ---  | ---   | 146                    | 85   | ---  | ---                 | ---     | 7.3 | 46.3               | 39.8         | 21.3        |  |         |             |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |      |       |                        |      |      |                     |         |     |                    |              |             |  |         |             |
| Star 915W                         | OP                | 910                       | ---  | ---   | 94                     | 52   | ---  | ---                 | ---     | 6.8 | 42.9               | 39.6         | <b>22.3</b> |  |         |             |
| Star 930W                         | OP                | <b>1155</b>               | ---  | ---   | 119                    | 72   | ---  | ---                 | ---     | 7.0 | 45.4               | 38.6         | 21.9        |  |         |             |
| <b>Mean</b>                       |                   | 969                       | ---  | ---   | ---                    | 63   | ---  | ---                 | ---     | 6.9 | 45.3               | 39.0         | 22.0        |  |         |             |
| <b>CV</b>                         |                   | 31                        | ---  | ---   | ---                    | 27   | ---  | ---                 | ---     | 5.5 | 6.9                | 2.1          | 1.8         |  |         |             |
| <b>LSD (0.05)</b>                 |                   | 526                       | ---  | ---   | ---                    | 28   | ---  | ---                 | ---     | 0.7 | NS                 | NS           | 0.8         |  |         |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Table 21. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Belleville, KS**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |              |                | Plant height (in.) | Test        |             |  |
|--------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|--------------|----------------|--------------------|-------------|-------------|--|
|                          |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | Moisture (%) | weight (lb/bu) |                    | Oil (%)     | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |                           |      |       |                        |      |      |                     |              |                |                    |             |             |  |
| CWH189D                  | H                 | <b>1491</b>               | ---  | ---   | 148                    | 57   | ---  | ---                 | ---          | 6.7            | 47.4               | 37.6        | <b>22.9</b> |  |
| CWH190D                  | H                 | <b>1769</b>               | ---  | ---   | 175                    | 67   | ---  | ---                 | ---          | 7.2            | 47.2               | <b>39.5</b> | <b>22.2</b> |  |
| CWH249D                  | H                 | <b>1857</b>               | ---  | ---   | 184                    | 70   | ---  | ---                 | ---          | 6.6            | 47.3               | 38.7        | <b>22.4</b> |  |
| CWH317D                  | H                 | <b>1642</b>               | ---  | ---   | 163                    | 87   | ---  | ---                 | ---          | 6.4            | 47.5               | 38.5        | <b>22.1</b> |  |
| <b>KWS-MOMONT</b>        |                   |                           |      |       |                        |      |      |                     |              |                |                    |             |             |  |
| HAMOUR                   | H                 | 377                       | ---  | ---   | 37                     | 10   | ---  | ---                 | ---          | 7.3            | 43.9               | 38.2        | 21.4        |  |
| MH 14ES125               | H                 | 728                       | ---  | ---   | 72                     | 17   | ---  | ---                 | ---          | 7.5            | 42.2               | 37.7        | <b>22.6</b> |  |
| MH 15AY085               | H                 | ---                       | ---  | ---   | ---                    | ---  | ---  | ---                 | ---          | ---            | ---                | ---         | ---         |  |
| MH 15HT227               | H                 | 527                       | ---  | ---   | 52                     | 27   | ---  | ---                 | ---          | 8.5            | 36.1               | <b>40.1</b> | 21.1        |  |
| MH 15HT229               | H                 | 845                       | ---  | ---   | 84                     | 43   | ---  | ---                 | ---          | 6.9            | 45.1               | <b>40.0</b> | <b>21.8</b> |  |
| <b>Limagrain Cereals</b> |                   |                           |      |       |                        |      |      |                     |              |                |                    |             |             |  |
| Advocat                  | H                 | 1257                      | ---  | ---   | 124                    | 53   | ---  | ---                 | ---          | 7.8            | 42.5               | <b>39.6</b> | 20.7        |  |
| Architect                | H                 | 780                       | ---  | ---   | 77                     | 27   | ---  | ---                 | ---          | 7.5            | 33.4               | <b>39.7</b> | 20.8        |  |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |       |                        |      |      |                     |              |                |                    |             |             |  |
| Phoenix CL               | H                 | 640                       | ---  | ---   | 63                     | 20   | ---  | ---                 | ---          | 6.6            | 38.1               | 38.5        | <b>21.8</b> |  |
| Plurax CL                | H                 | <b>1351</b>               | ---  | ---   | 134                    | 43   | ---  | ---                 | ---          | 7.6            | 48.6               | <b>40.4</b> | 21.4        |  |
| Popular                  | H                 | 1221                      | ---  | ---   | 121                    | 67   | ---  | ---                 | ---          | 7.0            | 47.1               | <b>41.5</b> | 20.4        |  |
| <b>Mean</b>              |                   | 1009                      | ---  | ---   | ---                    | 42   | ---  | ---                 | ---          | 7.2            | 43.5               | 39.3        | <b>21.7</b> |  |
| <b>CV</b>                |                   | 32                        | ---  | ---   | ---                    | 31   | ---  | ---                 | ---          | 11.3           | 11.0               | 2.3         | 2.4         |  |
| <b>LSD (0.05)</b>        |                   | 565                       | ---  | ---   | ---                    | 22   | ---  | ---                 | ---          | NS             | 9.0                | 2.1         | 1.2         |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

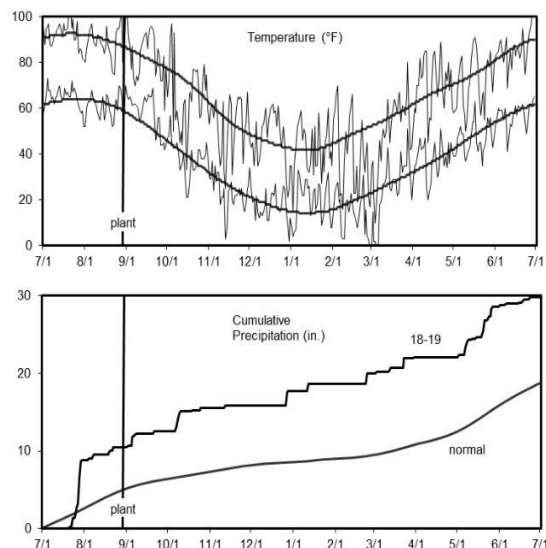
<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

### Garden City, Kansas

Johnathon Holman and Scott Maxwell  
Kansas State University

Planted: 8/30/2018 in 8-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested OP: 7/2/2019  
Harvested Hybrid: 7/9/2019  
Herbicides: 3 pt/a Prowl  
Insecticides: None  
Irrigation: 1.3 in.  
Previous crop: Fallow  
Soil test: NA  
Fertilizer: 0-0-0-0 lb N-P-K-S fertilizer in fall  
100-0-0 lb N-P-K fertilizer in spring  
Soil type: Ulysses Richfield silt loam  
Elevation: 2869 ft Latitude: 37° 58'N  
Comments: Above normal precipitation and excellent plant health resulted in record yields at this location.



**Table 22. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Garden City, KS**

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |         |      | Plant height (in.) | Moisture (%) | Test weight |  | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|---------------------|---------|------|--------------------|--------------|-------------|--|---------|-------------|
|                                   |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (lb/bu) | (%)  |                    |              |             |  |         |             |
| <b>CROPLAN by WinField</b>        |                   |                           |      |       |                        |      |      |                     |         |      |                    |              |             |  |         |             |
| CP115WRR                          | OP                | 2969                      | 353  | 1661  | 87                     | 90   | 75   | 83                  | 45      | 11.8 | 47.7               | 39.6         | <b>24.3</b> |  |         |             |
| CP225WRR                          | OP                | 3116                      | 633  | 1875  | 92                     | 91   | 48   | 70                  | 45      | 11.4 | 47.8               | 39.5         | <b>23.8</b> |  |         |             |
| CP320WRR                          | OP                | 3331                      | 777  | 2054  | 98                     | 96   | 82   | 89                  | 44      | 10.4 | 48.6               | 40.6         | <b>23.7</b> |  |         |             |
| <b>Kansas State University</b>    |                   |                           |      |       |                        |      |      |                     |         |      |                    |              |             |  |         |             |
| KS4670                            | OP                | 3465                      | 888  | 2177  | 102                    | 100  | 70   | 85                  | 47      | 13.7 | 48.0               | 39.9         | <b>23.7</b> |  |         |             |
| KS4719                            | OP                | 3317                      | ---  | ---   | 98                     | 84   | ---  | ---                 | 51      | 13.8 | 47.8               | 40.2         | <b>23.8</b> |  |         |             |
| KSR4723                           | OP                | 3216                      | 729  | 1973  | 95                     | 94   | 66   | 80                  | 47      | 11.5 | 48.1               | 41.4         | 22.9        |  |         |             |
| KSR4767                           | OP                | 3049                      | ---  | ---   | 90                     | 88   | ---  | ---                 | 47      | 12.5 | 46.0               | 39.8         | <b>24.5</b> |  |         |             |
| Riley                             | OP                | 3514                      | 896  | 2205  | 103                    | 80   | 81   | 80                  | 45      | 12.5 | 48.1               | 41.2         | <b>23.8</b> |  |         |             |
| Sumner                            | OP                | 3201                      | 954  | 2077  | 94                     | 85   | 73   | 79                  | 44      | 10.9 | 49.0               | 40.9         | <b>23.8</b> |  |         |             |
| Surefire                          | OP                | 3587                      | 888  | 2237  | 106                    | 92   | 60   | 76                  | 49      | 11.2 | 48.4               | 41.2         | <b>23.6</b> |  |         |             |
| Wichita                           | OP                | 3454                      | 750  | 2102  | 102                    | 92   | 90   | 91                  | 47      | 11.4 | 48.3               | 39.4         | <b>24.9</b> |  |         |             |
| <b>KWS-MOMONT</b>                 |                   |                           |      |       |                        |      |      |                     |         |      |                    |              |             |  |         |             |
| QUARTZ                            | OP                | 4002                      | 1436 | 2719  | 118                    | 88   | 67   | 77                  | 41      | 10.3 | 49.5               | <b>44.4</b>  | 20.0        |  |         |             |
| <b>Ohlde Seed Farms</b>           |                   |                           |      |       |                        |      |      |                     |         |      |                    |              |             |  |         |             |
| Torrington                        | OP                | 3492                      | 776  | 2134  | 103                    | 89   | 85   | 87                  | 48      | 13.0 | 48.1               | 41.1         | 23.4        |  |         |             |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |      |       |                        |      |      |                     |         |      |                    |              |             |  |         |             |
| Star 915W                         | OP                | 3786                      | 932  | 2359  | 112                    | 87   | 60   | 74                  | 45      | 12.7 | 47.4               | 40.6         | <b>23.6</b> |  |         |             |
| Star 930W                         | OP                | 3430                      | 877  | 2154  | 101                    | 88   | 70   | 79                  | 48      | 10.6 | 48.7               | 40.4         | 23.2        |  |         |             |
| <b>Mean</b>                       |                   | 3395                      | 801  | ---   | ---                    | 90   | 71   | ---                 | 46      | 11.8 | 48.1               | 40.7         | 23.5        |  |         |             |
| <b>CV</b>                         |                   | 13                        | 42   | ---   | ---                    | 9    | 19   | ---                 | 4       | 6.7  | 1.6                | 2.1          | 2.7         |  |         |             |
| <b>LSD (0.05)</b>                 |                   | NS                        | NS   | ---   | ---                    | NS   | 24   | ---                 | 3       | 1.3  | 1.3                | 1.8          | 1.3         |  |         |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Table 23. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Garden City, KS**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |                |         | Plant height (in.) | Moisture (%) | Test        |  |
|--------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|----------------|---------|--------------------|--------------|-------------|--|
|                          |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | weight (lb/bu) | Oil (%) |                    |              | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |             |       |                        |      |      |                     |                |         |                    |              |             |  |
| CWH189D                  | H                 | <b>4244</b>  | <b>2206</b> | 3225  | 104                    | 96   | 72   | 84                  | 45             | 7.8     | 50.7               | 40.0         | <b>24.2</b> |  |
| CWH190D                  | H                 | <b>4248</b>  | <b>1908</b> | 3078  | 104                    | 100  | 90   | 95                  | 46             | 7.9     | 50.4               | <b>41.6</b>  | <b>23.1</b> |  |
| CWH249D                  | H                 | <b>4127</b>  | ---         | ---   | 101                    | 100  | ---  | ---                 | 43             | 8.1     | 50.0               | 39.2         | <b>24.3</b> |  |
| CWH317D                  | H                 | <b>4438</b>  | ---         | ---   | 109                    | 100  | ---  | ---                 | 44             | 9.3     | 50.2               | 39.3         | <b>23.3</b> |  |
| <b>KWS-MOMONT</b>        |                   |              |             |       |                        |      |      |                     |                |         |                    |              |             |  |
| HAMOUR                   | H                 | 3702         | 1181        | 2442  | 91                     | 92   | 65   | 79                  | 43             | 9.1     | 48.6               | <b>41.6</b>  | 22.3        |  |
| MH 14ES125               | H                 | <b>4362</b>  | ---         | ---   | 107                    | 95   | ---  | ---                 | 46             | 8.7     | 49.7               | 40.3         | <b>23.6</b> |  |
| MH 15AY085               | H                 | 3600         | 1672        | 2636  | 88                     | 87   | 47   | 67                  | 44             | 8.7     | 48.7               | 41.3         | 22.5        |  |
| MH 15HT227               | H                 | 3889         | ---         | ---   | 95                     | 100  | ---  | ---                 | 42             | 10.7    | 48.2               | <b>43.7</b>  | 21.2        |  |
| MH 15HT229               | H                 | <b>4442</b>  | 1867        | 3154  | 109                    | 82   | 55   | 68                  | 42             | 10.1    | 48.3               | <b>42.2</b>  | 22.9        |  |
| <b>Limagrain Cereals</b> |                   |              |             |       |                        |      |      |                     |                |         |                    |              |             |  |
| Advocat                  | H                 | 3986         | ---         | ---   | 98                     | 96   | ---  | ---                 | 44             | 8.4     | 49.5               | <b>42.0</b>  | 21.8        |  |
| Architect                | H                 | <b>4462</b>  | ---         | ---   | 109                    | 100  | ---  | ---                 | 44             | 9.6     | 48.8               | <b>42.2</b>  | 20.7        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |             |       |                        |      |      |                     |                |         |                    |              |             |  |
| Phoenix CL               | H                 | <b>4184</b>  | <b>2093</b> | 3139  | 102                    | 100  | 57   | 78                  | 46             | 8.0     | 49.9               | <b>41.8</b>  | 22.7        |  |
| Plurax CL                | H                 | 3651         | 910         | 2281  | 89                     | 90   | 68   | 79                  | 41             | 9.1     | 49.8               | <b>42.3</b>  | 21.6        |  |
| Popular                  | H                 | 3819         | 956         | 2388  | 94                     | 100  | 79   | 89                  | 42             | 8.6     | 49.5               | <b>43.3</b>  | 20.5        |  |
| <b>Mean</b>              |                   | 4082         | 1505        | ---   | ---                    | 96   | 65   | ---                 | 44             | 8.9     | 49.5               | 41.5         | 22.5        |  |
| <b>CV</b>                |                   | 6            | 13          | ---   | ---                    | 7    | 21   | ---                 | 3              | 6.1     | 1.4                | 2.4          | 2.7         |  |
| <b>LSD (0.05)</b>        |                   | 445          | 314         | ---   | ---                    | 10   | 22   | ---                 | 2              | 0.9     | 1.2                | 2.1          | 1.3         |  |

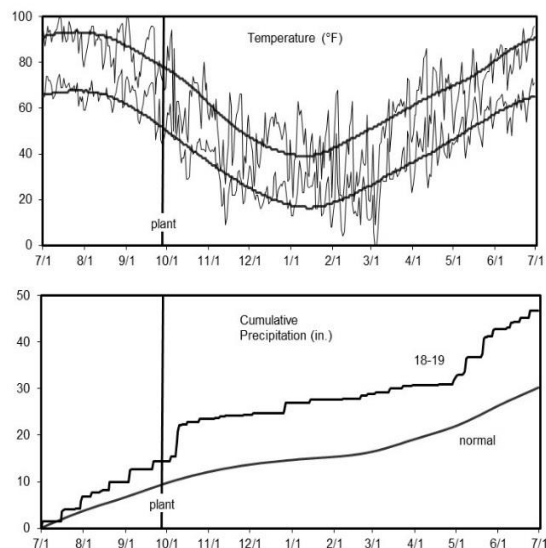
**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

### Hutchinson, Kansas

Jane Lingenfelter  
Kansas State University

Planted: 9/28/2018 in 10-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Swathed: 6/13/2019  
Harvested: 6/20/2019  
Herbicides: 1 qt/a Treflan, 10 oz/a Assure II  
Insecticides: None  
Irrigation: None  
Previous crop: Wheat  
Soil test: NA  
Fertilizer: 30-0-0-0 lb N-P-K-S fertilizer in fall  
90-0-0 lb N-P-K fertilizer in spring  
Soil type: Ost loam  
Elevation: 1540 ft Latitude: 37° 55'N  
Comments: Excellent overwintering and above normal moisture resulted in record yields at this location. No lodging from saturated soils was observed.



**Table 24. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Hutchinson, KS**

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       | Spring vigor | Spring stand <sup>3</sup> | Plant height | Oil         | Protein |
|-----------------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------|-------|--------------|---------------------------|--------------|-------------|---------|
|                                   |                   | 2019                      | 2017        | 2-yr. | 2019                   | 2019 | 2017 | 2-yr.               | (1-5) | (%)          | (in.)                     | (%)          | (%)         |         |
| <b>CROPLAN by WinField</b>        |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| CP115WRR                          | OP                | 3156                      | 2474        | 2815  | 95                     | ---  | 97   | ---                 | 4.0   | 90           | 40                        | 39.9         | <b>23.6</b> |         |
| CP225WRR                          | OP                | 3129                      | 2241        | 2685  | 94                     | ---  | 96   | ---                 | 3.3   | 94           | 40                        | 40.3         | <b>22.6</b> |         |
| CP320WRR                          | OP                | 3423                      | 2647        | 3035  | 103                    | ---  | 99   | ---                 | 4.0   | 95           | 39                        | 40.5         | <b>22.7</b> |         |
| <b>Kansas State University</b>    |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| KS4670                            | OP                | 3325                      | ---         | ---   | 100                    | ---  | ---  | ---                 | 3.5   | 88           | 40                        | 40.4         | <b>22.5</b> |         |
| KS4719                            | OP                | <b>3547</b>               | ---         | ---   | 106                    | ---  | ---  | ---                 | 4.0   | 100          | 44                        | 40.1         | <b>22.4</b> |         |
| KSR4723                           | OP                | 3308                      | ---         | ---   | 99                     | ---  | ---  | ---                 | 3.3   | 88           | 41                        | 40.4         | 22.2        |         |
| KSR4767                           | OP                | 3061                      | ---         | ---   | 92                     | ---  | ---  | ---                 | 3.5   | 94           | 42                        | 40.1         | <b>23.2</b> |         |
| Riley                             | OP                | 3321                      | 2723        | 3022  | 100                    | ---  | 98   | ---                 | 3.3   | 89           | 40                        | 41.9         | 22.0        |         |
| Sumner                            | OP                | <b>3540</b>               | 2538        | 3039  | 106                    | ---  | 99   | ---                 | 3.8   | 94           | 42                        | 40.8         | <b>22.8</b> |         |
| Surefire                          | OP                | <b>3608</b>               | 2743        | 3175  | 108                    | ---  | 100  | ---                 | 3.8   | 95           | 43                        | 40.4         | <b>23.0</b> |         |
| Wichita                           | OP                | 3394                      | 2374        | 2884  | 102                    | ---  | 99   | ---                 | 3.8   | 89           | 40                        | 39.9         | <b>23.1</b> |         |
| <b>KWS-MOMONT</b>                 |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| QUARTZ                            | OP                | <b>3870</b>               | <b>3423</b> | 3646  | 116                    | ---  | 99   | ---                 | 3.5   | 90           | 39                        | <b>42.8</b>  | 21.2        |         |
| <b>Ohlde Seed Farms</b>           |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| Torrington                        | OP                | <b>3542</b>               | 2935        | 3238  | 106                    | ---  | 100  | ---                 | 4.0   | 90           | 44                        | 40.6         | <b>23.0</b> |         |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| Star 915W                         | OP                | 2648                      | 2421        | 2534  | 79                     | ---  | 99   | ---                 | 2.8   | 79           | 40                        | 39.8         | <b>23.5</b> |         |
| Star 930W                         | OP                | 3170                      | 2316        | 2743  | 95                     | ---  | 99   | ---                 | 4.0   | 100          | 41                        | 40.3         | 21.9        |         |
| <b>Mean</b>                       |                   | 3336                      | 2500        | ---   | ---                    | ---  | 97   | ---                 | 3.6   | 92           | 41                        | 40.5         | <b>22.7</b> |         |
| <b>CV</b>                         |                   | 5                         | 10          | ---   | ---                    | ---  | 3    | ---                 | 6.6   | 7            | 3                         | 1.2          | 1.9         |         |
| <b>LSD (0.05)</b>                 |                   | 335                       | 421         | ---   | ---                    | ---  | 4    | ---                 | 0.5   | NS           | 3                         | 1.1          | 0.9         |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Only two replications were analyzed in each trial because of standing water in the third replication.

<sup>3</sup>Spring stand is reported as percent of stand remaining from overwintering and losses following heavy rainfall.



**Table 25. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Hutchinson, KS**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       | Spring vigor | Spring stand <sup>3</sup> | Plant height | Oil         | Protein |
|--------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------|-------|--------------|---------------------------|--------------|-------------|---------|
|                          |                   | 2019                      | 2017        | 2-yr. | 2019                   | 2019 | 2017 | 2-yr.               | (1-5) | (%)          | (in.)                     | (%)          | (%)         |         |
| <b>Bayer CropScience</b> |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| CWH189D                  | H                 | 3834                      | <b>3502</b> | 3668  | 99                     | ---  | 99   | ---                 | 3.8   | 76           | 44                        | 40.7         | 22.7        |         |
| CWH190D                  | H                 | 3714                      | <b>3261</b> | 3487  | 96                     | ---  | 100  | ---                 | 3.3   | 75           | 44                        | 41.2         | <b>23.0</b> |         |
| CWH249D                  | H                 | <b>4380</b>               | ---         | ---   | 113                    | ---  | ---  | ---                 | 4.3   | 88           | 43                        | 40.9         | 22.5        |         |
| CWH317D                  | H                 | <b>4260</b>               | ---         | ---   | 110                    | ---  | ---  | ---                 | 4.0   | 89           | 43                        | 40.6         | 21.8        |         |
| <b>KWS-MOMONT</b>        |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| HAMOUR                   | H                 | 3371                      | 2906        | 3138  | 87                     | ---  | 89   | ---                 | 3.3   | 67           | 42                        | 40.0         | 22.2        |         |
| MH 14ES125               | H                 | 3449                      | ---         | ---   | 89                     | ---  | ---  | ---                 | 4.0   | 84           | 46                        | 40.4         | <b>23.6</b> |         |
| MH 15AY085               | H                 | 3104                      | ---         | ---   | 80                     | ---  | ---  | ---                 | 2.8   | 63           | 44                        | 39.6         | 22.8        |         |
| MH 15HT227               | H                 | 3779                      | ---         | ---   | 98                     | ---  | ---  | ---                 | 4.5   | 78           | 43                        | <b>44.1</b>  | 20.5        |         |
| MH 15HT229               | H                 | <b>4134</b>               | ---         | ---   | 107                    | ---  | ---  | ---                 | 4.3   | 84           | 42                        | 42.0         | 22.0        |         |
| <b>Limagrain Cereals</b> |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| Advocat                  | H                 | <b>4131</b>               | ---         | ---   | 107                    | ---  | ---  | ---                 | 5.0   | 90           | 43                        | 42.2         | 20.8        |         |
| Architect                | H                 | 3932                      | ---         | ---   | 102                    | ---  | ---  | ---                 | 4.8   | 94           | 44                        | 43.0         | 20.5        |         |
| <b>Rubisco Seeds LLC</b> |                   |                           |             |       |                        |      |      |                     |       |              |                           |              |             |         |
| Phoenix CL               | H                 | 3813                      | ---         | ---   | 99                     | ---  | ---  | ---                 | 3.8   | 78           | 43                        | 41.7         | 21.7        |         |
| Plurax CL                | H                 | <b>4287</b>               | 2996        | 3642  | 111                    | ---  | 2996 | ---                 | 4.5   | 88           | 44                        | 42.2         | 21.2        |         |
| Popular                  | H                 | 3993                      | <b>3204</b> | 3599  | 103                    | ---  | 3204 | ---                 | 4.0   | 94           | 43                        | 43.0         | 21.2        |         |
| <b>Mean</b>              |                   | 3870                      | 3102        | ---   | ---                    | ---  | 95   | ---                 | 4.0   | 82           | 43                        | 41.5         | 22.0        |         |
| <b>CV</b>                |                   | 4                         | 6           | ---   | ---                    | ---  | 6    | ---                 | 8.4   | 10           | 3                         | 1.0          | 1.4         |         |
| <b>LSD (0.05)</b>        |                   | 362                       | 319         | ---   | ---                    | ---  | 319  | ---                 | 0.7   | 18           | NS                        | 0.9          | 0.7         |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Only two replications were analyzed in each trial because of standing water in the third replication.

<sup>3</sup>Spring stand is reported as percent of stand remaining from overwintering and losses following heavy rainfall.

Kiowa, Kansas

Bob Shrock

Planted: 9/24/2018 in 10-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Swathed: 6/5/2019  
 Harvested: 6/12/2019  
 Herbicides: 10 oz/a Assure II  
 Insecticides: None  
 Irrigation: None  
 Previous crop: Wheat  
 Soil test: 45-0-0-0 lb N-P-K-S  
 Fertilizer: 60-15-0-15 lb N-P-K-S fertilizer in spring  
 Soil type: Pond Creek silt loam  
 Elevation: 1280 ft Latitude: 36° 58'N  
 Comments: Establishment and survival were excellent. Yields were above average despite severe lodging from crown rot and overly saturated soils in the OPs.

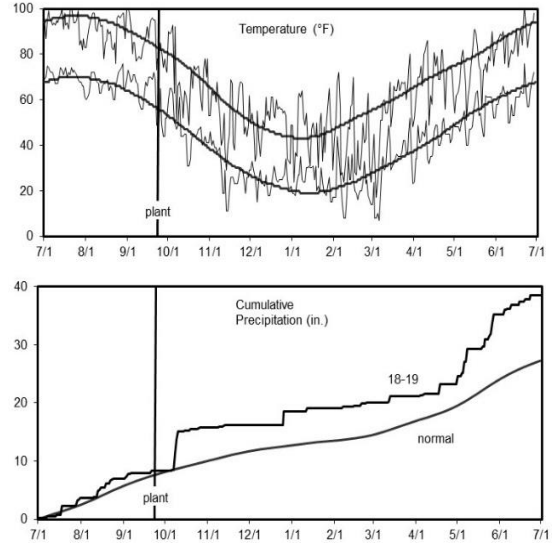


Table 26. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Kiowa, KS

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |       | Winter survival (%) | 50% bloom (DOY) | Lodging (%) | Test weight (lb/bu) | Oil (%) | Protein (%) |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|-------|---------------------|-----------------|-------------|---------------------|---------|-------------|
|                                   |                   | 2019         | 2018 | 2-yr. | 2019                   | 2018 | 2-yr. | 2019                | 2018            | 2-yr.       | (%)                 | (lb/bu) | (%)         |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |       |                     |                 |             |                     |         |             |
| CP115WRR                          | OP                | 3008         | ---  | ---   | 105                    | ---  | ---   | ---                 | 101             | 45          | 51.4                | 41.2    | 22.1        |
| CP225WRR                          | OP                | 2347         | ---  | ---   | 82                     | ---  | ---   | ---                 | 102             | 37          | 50.8                | 41.1    | 21.7        |
| CP320WRR                          | OP                | 2831         | ---  | ---   | 99                     | ---  | ---   | ---                 | 102             | 38          | 50.6                | 39.2    | 22.5        |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |       |                     |                 |             |                     |         |             |
| KS4670                            | OP                | 2978         | ---  | ---   | 104                    | ---  | ---   | ---                 | 101             | 13          | 51.8                | 40.2    | 21.3        |
| KS4719                            | OP                | 2563         | ---  | ---   | 89                     | ---  | ---   | ---                 | 104             | 0           | 47.5                | 40.7    | 21.7        |
| KSR4723                           | OP                | 2843         | ---  | ---   | 99                     | ---  | ---   | ---                 | 102             | 0           | 45.5                | 40.4    | 21.8        |
| KSR4767                           | OP                | 2625         | ---  | ---   | 92                     | ---  | ---   | ---                 | 103             | 2           | 53.0                | 39.5    | 22.4        |
| Riley                             | OP                | <b>3123</b>  | ---  | ---   | 109                    | ---  | ---   | ---                 | 100             | 0           | 52.0                | 41.7    | 21.5        |
| Sumner                            | OP                | 2917         | ---  | ---   | 102                    | ---  | ---   | ---                 | 101             | 7           | 51.7                | 39.7    | 22.2        |
| Surefire                          | OP                | 2849         | ---  | ---   | 99                     | ---  | ---   | ---                 | 103             | 2           | 52.1                | 39.9    | 22.0        |
| Wichita                           | OP                | <b>3164</b>  | ---  | ---   | 110                    | ---  | ---   | ---                 | 102             | 30          | 52.4                | 40.1    | 21.6        |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |       |                     |                 |             |                     |         |             |
| QUARTZ                            | OP                | <b>3610</b>  | ---  | ---   | 126                    | ---  | ---   | ---                 | 102             | 0           | 47.2                | 43.1    | 20.4        |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |       |                     |                 |             |                     |         |             |
| Torrington                        | OP                | 2817         | ---  | ---   | 98                     | ---  | ---   | ---                 | 101             | 3           | 52.2                | 40.7    | 21.3        |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |       |                     |                 |             |                     |         |             |
| Star 915W                         | OP                | 2528         | ---  | ---   | 88                     | ---  | ---   | ---                 | 103             | 10          | 48.5                | 40.3    | 22.2        |
| Star 930W                         | OP                | 2728         | ---  | ---   | 95                     | ---  | ---   | ---                 | 102             | 23          | 51.6                | 39.6    | 21.7        |
| <b>Mean</b>                       |                   | 2869         | ---  | ---   | ---                    | ---  | ---   | ---                 | 102             | 14          | 50.5                | 40.5    | 21.8        |
| <b>CV</b>                         |                   | 11           | ---  | ---   | ---                    | ---  | ---   | ---                 | 1               | 101         | 7.8                 | 2.7     | 3.2         |
| <b>LSD (0.05)</b>                 |                   | 538          | ---  | ---   | ---                    | ---  | ---   | ---                 | 1               | 24          | NS                  | NS      | NS          |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 27. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Kiowa, KS**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |       |             | 50% bloom      |             | Test        |  |
|--------------------------|-------------------|--------------|------|-------|------------------------|------|------|---------------------|-------|-------------|----------------|-------------|-------------|--|
|                          |                   | 2019         | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (DOY) | Lodging (%) | weight (lb/bu) | Oil (%)     | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |      |       |                        |      |      |                     |       |             |                |             |             |  |
| CWH189D                  | H                 | 3536         | ---  | ---   | 98                     | ---  | ---  | ---                 | 103   | 7           | 53.1           | 39.9        | 21.8        |  |
| CWH190D                  | H                 | 3241         | ---  | ---   | 90                     | ---  | ---  | ---                 | 103   | 0           | 53.1           | 40.2        | 21.8        |  |
| CWH249D                  | H                 | <b>3835</b>  | ---  | ---   | 106                    | ---  | ---  | ---                 | 103   | 7           | 52.4           | 39.8        | 22.0        |  |
| CWH317D                  | H                 | <b>3901</b>  | ---  | ---   | 108                    | ---  | ---  | ---                 | 101   | 0           | 50.6           | 40.5        | 20.7        |  |
| <b>KWS-MOMONT</b>        |                   |              |      |       |                        |      |      |                     |       |             |                |             |             |  |
| HAMOUR                   | H                 | 3475         | ---  | ---   | 96                     | ---  | ---  | ---                 | 103   | 0           | 51.8           | 40.6        | 21.0        |  |
| MH 14ES125               | H                 | 3553         | ---  | ---   | 98                     | ---  | ---  | ---                 | 105   | 0           | 49.3           | 40.5        | 21.7        |  |
| MH 15AY085               | H                 | 3169         | ---  | ---   | 88                     | ---  | ---  | ---                 | 103   | 0           | 50.6           | <b>41.5</b> | 21.0        |  |
| MH 15HT227               | H                 | <b>3733</b>  | ---  | ---   | 103                    | ---  | ---  | ---                 | 102   | 0           | 48.6           | <b>42.9</b> | 19.9        |  |
| MH 15HT229               | H                 | <b>3723</b>  | ---  | ---   | 103                    | ---  | ---  | ---                 | 102   | 0           | 48.2           | <b>42.0</b> | 20.8        |  |
| <b>Limagrain Cereals</b> |                   |              |      |       |                        |      |      |                     |       |             |                |             |             |  |
| Advocat                  | H                 | 3615         | ---  | ---   | 100                    | ---  | ---  | ---                 | 102   | 3           | 49.8           | <b>43.4</b> | 20.2        |  |
| Architect                | H                 | 3618         | ---  | ---   | 100                    | ---  | ---  | ---                 | 102   | 0           | 49.5           | <b>43.0</b> | 19.6        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |      |       |                        |      |      |                     |       |             |                |             |             |  |
| Phoenix CL               | H                 | <b>4007</b>  | ---  | ---   | 111                    | ---  | ---  | ---                 | 102   | 0           | 51.4           | 41.1        | 19.9        |  |
| Plurax CL                | H                 | <b>3780</b>  | ---  | ---   | 104                    | ---  | ---  | ---                 | 100   | 0           | 53.1           | <b>42.9</b> | 20.1        |  |
| Popular                  | H                 | 3568         | ---  | ---   | 99                     | ---  | ---  | ---                 | 101   | 0           | 53.1           | <b>41.8</b> | 20.4        |  |
| <b>Mean</b>              |                   | 3618         | ---  | ---   | ---                    | ---  | ---  | ---                 | 102   | 1           | 51.0           | 41.3        | 20.9        |  |
| <b>CV</b>                |                   | 5            | ---  | ---   | ---                    | ---  | ---  | ---                 | 1     | 361         | 1.5            | 2.1         | 4.2         |  |
| <b>LSD (0.05)</b>        |                   | 336          | ---  | ---   | ---                    | ---  | ---  | ---                 | 1     | NS          | 1.3            | 1.9         | NS          |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

Manhattan, Kansas

Michael Stamm and Scott Dooley  
Kansas State University

Planted: 9/18/2018 in 10-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Swathed: 6/17/2019  
Harvested: 6/27/2019  
Herbicides: 1 qt/a Treflan  
Insecticides: None  
Irrigation: None  
Previous crop: Fallow  
Soil test: 26-32-7 ppm N-P-S  
Fertilizer: 14-0-0-30 lb N-P-K-S fertilizer in fall  
75-0-0 lb N-P-K fertilizer in spring  
Soil type: Smolan silt loam  
Elevation: 1064 ft Latitude: 39° 12'N  
Comments: A wetter than normal spring resulted in overly saturated soils. This in combination with crown rot led to severe lodging, especially in the OPs.

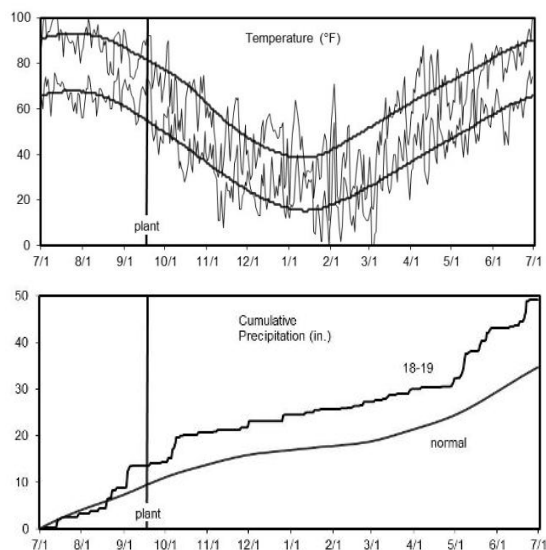


Table 28. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Manhattan, KS

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       | 50% bloom | Plant height | Lodging <sup>3</sup> | Oil (%)     | Protein (%) |
|-----------------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------|-------|-----------|--------------|----------------------|-------------|-------------|
|                                   |                   | 2019                      | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (DOY) | (in.)     | (1-5)        | (%)                  | (%)         |             |
| <b>CROPLAN by WinField</b>        |                   |                           |             |       |                        |      |      |                     |       |           |              |                      |             |             |
| CP115WRR                          | OP                | 2333                      | 1640        | 1986  | 80                     | ---  | 95   | ---                 | 109   | 55        | 3.7          | 39.5                 | <b>23.1</b> |             |
| CP225WRR                          | OP                | 2741                      | <b>1764</b> | 2252  | 94                     | ---  | 90   | ---                 | 110   | 55        | 4.0          | 39.6                 | <b>23.3</b> |             |
| CP320WRR                          | OP                | <b>2931</b>               | 1411        | 2171  | 101                    | ---  | 88   | ---                 | 109   | 53        | 3.2          | 39.4                 | <b>23.1</b> |             |
| <b>Kansas State University</b>    |                   |                           |             |       |                        |      |      |                     |       |           |              |                      |             |             |
| KS4670                            | OP                | <b>3054</b>               | <b>2108</b> | 2581  | 105                    | ---  | 98   | ---                 | 109   | 59        | 3.3          | 39.5                 | 22.4        |             |
| KS4719                            | OP                | <b>2895</b>               | ---         | ---   | 99                     | ---  | ---  | ---                 | 112   | 59        | 3.8          | 39.7                 | <b>22.9</b> |             |
| KSR4723                           | OP                | 2807                      | <b>1847</b> | 2327  | 96                     | ---  | 93   | ---                 | 110   | 53        | 2.5          | 40.0                 | 22.6        |             |
| KSR4767                           | OP                | <b>3112</b>               | ---         | ---   | 107                    | ---  | ---  | ---                 | 110   | 61        | 3.7          | 39.7                 | <b>23.5</b> |             |
| Riley                             | OP                | <b>3367</b>               | <b>1943</b> | 2655  | 116                    | ---  | 95   | ---                 | 108   | 55        | 2.8          | <b>41.6</b>          | 21.9        |             |
| Sumner                            | OP                | <b>2992</b>               | <b>1760</b> | 2376  | 103                    | ---  | 98   | ---                 | 109   | 56        | 3.8          | 40.6                 | 22.5        |             |
| Surefire                          | OP                | <b>2936</b>               | <b>2320</b> | 2628  | 101                    | ---  | 93   | ---                 | 110   | 53        | 3.0          | 40.1                 | <b>22.9</b> |             |
| Wichita                           | OP                | <b>3256</b>               | <b>1790</b> | 2523  | 112                    | ---  | 92   | ---                 | 110   | 53        | 3.0          | 39.5                 | <b>24.0</b> |             |
| <b>KWS-MOMONT</b>                 |                   |                           |             |       |                        |      |      |                     |       |           |              |                      |             |             |
| QUARTZ                            | OP                | <b>3142</b>               | 1109        | 2125  | 108                    | ---  | 84   | ---                 | 111   | 57        | 4.0          | <b>41.8</b>          | 20.2        |             |
| <b>Ohlde Seed Farms</b>           |                   |                           |             |       |                        |      |      |                     |       |           |              |                      |             |             |
| Torrington                        | OP                | <b>3127</b>               | 1721        | 2424  | 107                    | ---  | 89   | ---                 | 110   | 59        | 3.0          | 40.5                 | 22.4        |             |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |             |       |                        |      |      |                     |       |           |              |                      |             |             |
| Star 915W                         | OP                | 2319                      | 1359        | 1839  | 80                     | ---  | 83   | ---                 | 112   | 53        | 3.2          | 40.0                 | 22.8        |             |
| Star 930W                         | OP                | <b>3015</b>               | <b>1997</b> | 2506  | 104                    | ---  | 95   | ---                 | 109   | 59        | 4.0          | 39.4                 | 22.7        |             |
| <b>Mean</b>                       |                   | <b>2912</b>               | 1797        | ---   | ---                    | ---  | 92   | ---                 | 110   | 56        | 3.4          | 40.0                 | 22.7        |             |
| <b>CV</b>                         |                   | 12                        | 18          | ---   | ---                    | ---  | 8    | ---                 | 0.4   | 6         | 20.1         | 1.3                  | 2.3         |             |
| <b>LSD (0.05)</b>                 |                   | 502                       | 576         | ---   | ---                    | ---  | NS   | ---                 | 1     | 6         | 0.7          | 1.1                  | 1.1         |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Yield in the OP trial is significant at P<0.1.

<sup>3</sup>Lodging rated on a 1=completely flat to 5=completely upright scale and significant at P<0.2.

**Table 29. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Manhattan, KS**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       | 50% bloom | Plant height | Lodging <sup>3</sup> | Oil         | Protein |
|--------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|-------|-----------|--------------|----------------------|-------------|---------|
|                          |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (DOY) | (in.)     | (1-5)        | (%)                  | (%)         |         |
| <b>Bayer CropScience</b> |                   |              |             |       |                        |      |      |                     |       |           |              |                      |             |         |
| CWH189D                  | H                 | <b>3789</b>  | <b>2301</b> | 3045  | 109                    | ---  | 97   | ---                 | 111   | 59        | 4.3          | 39.5                 | <b>22.8</b> |         |
| CWH190D                  | H                 | 3210         | <b>2291</b> | 2751  | 92                     | ---  | 91   | ---                 | 110   | 59        | 3.8          | 41.8                 | <b>21.9</b> |         |
| CWH249D                  | H                 | <b>3874</b>  | ---         | ---   | 111                    | ---  | ---  | ---                 | 111   | 58        | 4.0          | 40.1                 | <b>22.9</b> |         |
| CWH317D                  | H                 | <b>3904</b>  | ---         | ---   | 112                    | ---  | ---  | ---                 | 110   | 59        | 4.2          | 41.1                 | 21.0        |         |
| <b>KWS-MOMONT</b>        |                   |              |             |       |                        |      |      |                     |       |           |              |                      |             |         |
| HAMOUR                   | H                 | 3033         | <b>2303</b> | 2668  | 87                     | ---  | 80   | ---                 | 111   | 59        | 4.2          | 41.3                 | 20.6        |         |
| MH 14ES125               | H                 | <b>4001</b>  | ---         | ---   | 115                    | ---  | ---  | ---                 | 112   | 61        | 4.2          | 41.0                 | <b>22.0</b> |         |
| MH 15AY085               | H                 | 2748         | 1316        | 2032  | 79                     | ---  | 60   | ---                 | 110   | 60        | 4.2          | 41.7                 | 21.2        |         |
| MH 15HT227               | H                 | 3182         | ---         | ---   | 91                     | ---  | ---  | ---                 | 111   | 59        | 4.2          | 44.0                 | 19.4        |         |
| MH 15HT229               | H                 | <b>4033</b>  | <b>2055</b> | 3044  | 116                    | ---  | 88   | ---                 | 111   | 63        | 4.2          | 42.4                 | 21.5        |         |
| <b>Limagrain Cereals</b> |                   |              |             |       |                        |      |      |                     |       |           |              |                      |             |         |
| Advocat                  | H                 | 3254         | ---         | ---   | 93                     | ---  | ---  | ---                 | 110   | 61        | 3.8          | 42.9                 | 20.5        |         |
| Architect                | H                 | <b>3570</b>  | ---         | ---   | 102                    | ---  | ---  | ---                 | 110   | 59        | 4.3          | 42.3                 | 20.0        |         |
| <b>Rubisco Seeds LLC</b> |                   |              |             |       |                        |      |      |                     |       |           |              |                      |             |         |
| Phoenix CL               | H                 | <b>3646</b>  | 1751        | 2699  | 105                    | ---  | 83   | ---                 | 110   | 58        | 4.3          | 42.2                 | 21.2        |         |
| Plurax CL                | H                 | 3309         | <b>2188</b> | 2749  | 95                     | ---  | 90   | ---                 | 109   | 56        | 4.2          | 43.9                 | 20.0        |         |
| Popular                  | H                 | 3270         | <b>2104</b> | 2687  | 94                     | ---  | 87   | ---                 | 109   | 59        | 4.3          | <b>45.3</b>          | 19.2        |         |
| <b>Mean</b>              |                   | 3487         | 1874        | ---   | ---                    | ---  | 82   | ---                 | 110   | 59        | 4.2          | 42.1                 | 21.0        |         |
| <b>CV</b>                |                   | 9            | 15          | ---   | ---                    | ---  | 13   | ---                 | 0.4   | 4         | 7.3          | 1.5                  | 2.3         |         |
| <b>LSD (0.05)</b>        |                   | 518          | 462         | ---   | ---                    | ---  | 18   | ---                 | 1     | NS        | NS           | 1.3                  | 1.1         |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Yield in the OP trial is significant at P<0.1.

<sup>3</sup>Lodging rated on a 1=completely flat to 5=completely upright scale and significant at P<0.2.

Norwich, Kansas

Cody and David Swinehart

Planted: 9/24/2018 in 10-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Swathed: 6/4/2019, hybrid trial only  
 Harvested: Hybrid 6/11/2019, OP 6/12/2019  
 Herbicides: 1 qt/a Treflan, 10 oz/a Assure II  
 Insecticides: None  
 Irrigation: None  
 Previous crop: Wheat  
 Soil test: NA  
 Fertilizer: 14-14-0-4 lb N-P-K-S fertilizer in fall  
 90-0-0-9 lb N-P-K-S fertilizer in spring  
 Soil type: Renfrow clay loam  
 Elevation: 1420 ft Latitude: 37° 24'N  
 Comments: Despite a wet fall, establishment and survival were excellent. Overly saturated soils in the spring and crown rot led to severe lodging in the OPs.

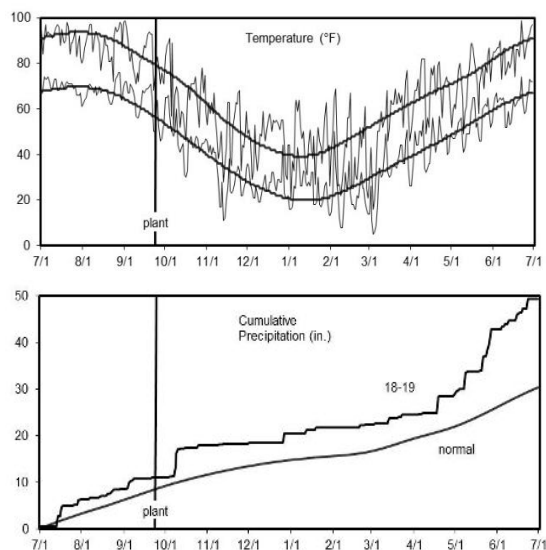


Table 30. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Norwich, KS

| Name                              | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |             | Test         |                |             |             |  |
|-----------------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|-------------|--------------|----------------|-------------|-------------|--|
|                                   |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | Lodging (%) | Moisture (%) | weight (lb/bu) | Oil (%)     | Protein (%) |  |
| <b>CROPLAN by WinField</b>        |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| CP115WRR                          | OP                | 825          | 814         | 820   | 72                     | ---  | 60   | ---                 | 50          | 9.7          | 54.6           | 35.4        | <b>23.6</b> |  |
| CP225WRR                          | OP                | 790          | <b>1516</b> | 1153  | 69                     | ---  | 80   | ---                 | 60          | 9.9          | 46.2           | 35.7        | 22.6        |  |
| CP320WRR                          | OP                | 774          | <b>1635</b> | 1205  | 68                     | ---  | 70   | ---                 | 75          | 10.4         | 51.0           | 35.6        | 22.9        |  |
| <b>Kansas State University</b>    |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| KS4670                            | OP                | 1462         | <b>1615</b> | 1538  | 128                    | ---  | 70   | ---                 | 23          | 11.8         | 53.5           | 35.9        | 22.5        |  |
| KS4719                            | OP                | 1150         | ---         | ---   | 100                    | ---  | ---  | ---                 | 10          | 11.2         | 56.5           | 34.6        | 22.8        |  |
| KSR4723                           | OP                | 966          | <b>1435</b> | 1201  | 84                     | ---  | 70   | ---                 | 45          | 10.0         | 55.9           | 34.9        | 23.2        |  |
| KSR4767                           | OP                | 1186         | ---         | ---   | 104                    | ---  | ---  | ---                 | 40          | 9.4          | 52.6           | 34.4        | <b>23.4</b> |  |
| Riley                             | OP                | 1311         | <b>1685</b> | 1498  | 115                    | ---  | 80   | ---                 | 20          | 10.5         | 54.9           | 36.9        | 22.5        |  |
| Sumner                            | OP                | 1155         | <b>1527</b> | 1341  | 101                    | ---  | 75   | ---                 | 42          | 14.2         | 56.1           | 36.2        | 22.4        |  |
| Surefire                          | OP                | 1129         | <b>1639</b> | 1384  | 99                     | ---  | 75   | ---                 | 35          | 12.2         | 54.8           | 35.0        | 23.0        |  |
| Wichita                           | OP                | 1078         | <b>1708</b> | 1393  | 94                     | ---  | 80   | ---                 | 57          | 10.8         | 52.3           | 35.7        | 22.8        |  |
| <b>KWS-MOMONT</b>                 |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| QUARTZ                            | OP                | <b>2574</b>  | <b>1520</b> | 2047  | 225                    | ---  | 70   | ---                 | 2           | 14.9         | 48.0           | <b>41.4</b> | 18.7        |  |
| <b>Ohlde Seed Farms</b>           |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| Torrington                        | OP                | 1248         | <b>1612</b> | 1430  | 109                    | ---  | 75   | ---                 | 18          | 11.7         | 52.8           | 35.9        | 22.4        |  |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| Star 915W                         | OP                | 552          | 892         | 722   | 48                     | ---  | 70   | ---                 | 88          | 9.6          | 36.4           | 32.8        | <b>24.9</b> |  |
| Star 930W                         | OP                | 967          | <b>1485</b> | 1226  | 85                     | ---  | 75   | ---                 | 67          | 10.4         | 53.0           | 34.4        | 22.6        |  |
| <b>Mean</b>                       |                   | 1144         | 1443        | ---   | ---                    | ---  | 71   | ---                 | 42          | 11.1         | 51.9           | 35.7        | 22.7        |  |
| <b>CV</b>                         |                   | 16           | 11          | ---   | ---                    | ---  | 13   | ---                 | 44          | 17.0         | 7.7            | 2.4         | 3.0         |  |
| <b>LSD (0.05)</b>                 |                   | 304          | 321         | ---   | ---                    | ---  | NS   | ---                 | 31          | 3.2          | 6.7            | 1.8         | 1.5         |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 31. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Norwich, KS**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |             |              | Test           |             |             |  |
|--------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|-------------|--------------|----------------|-------------|-------------|--|
|                          |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | Lodging (%) | Moisture (%) | weight (lb/bu) | Oil (%)     | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| CWH189D                  | H                 | <b>3088</b>  | <b>1687</b> | 2388  | 112                    | ---  | 73   | ---                 | ---         | 6.9          | 53.2           | 40.4        | 20.1        |  |
| CWH190D                  | H                 | 2475         | 1482        | 1979  | 90                     | ---  | 73   | ---                 | ---         | 6.7          | 56.1           | 38.9        | <b>20.6</b> |  |
| CWH249D                  | H                 | <b>3448</b>  | ---         | ---   | 125                    | ---  | ---  | ---                 | ---         | 6.5          | 53.1           | <b>42.4</b> | 19.6        |  |
| CWH317D                  | H                 | <b>3495</b>  | ---         | ---   | 127                    | ---  | ---  | ---                 | ---         | 7.5          | 52.8           | <b>42.0</b> | 19.2        |  |
| <b>KWS-MOMONT</b>        |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| HAMOUR                   | H                 | 2076         | <b>1788</b> | 1932  | 75                     | ---  | 73   | ---                 | ---         | 6.5          | 56.2           | 38.1        | <b>21.0</b> |  |
| MH 14ES125               | H                 | 2137         | ---         | ---   | 78                     | ---  | ---  | ---                 | ---         | 7.0          | 55.1           | 36.8        | <b>21.8</b> |  |
| MH 15AY085               | H                 | 2261         | 1236        | 1749  | 82                     | ---  | 60   | ---                 | ---         | 6.3          | 54.2           | 39.4        | 20.1        |  |
| MH 15HT227               | H                 | <b>3506</b>  | ---         | ---   | 127                    | ---  | ---  | ---                 | ---         | 8.1          | 50.7           | <b>43.0</b> | 18.8        |  |
| MH 15HT229               | H                 | <b>3357</b>  | <b>1758</b> | 2557  | 122                    | ---  | 73   | ---                 | ---         | 7.3          | 50.5           | <b>43.6</b> | 19.2        |  |
| <b>Limagrain Cereals</b> |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| Advocat                  | H                 | 2937         | ---         | ---   | 107                    | ---  | ---  | ---                 | ---         | 7.5          | 51.3           | <b>41.0</b> | 19.0        |  |
| Architect                | H                 | 2968         | ---         | ---   | 108                    | ---  | ---  | ---                 | ---         | 8.0          | 51.5           | 40.6        | 19.8        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |             |       |                        |      |      |                     |             |              |                |             |             |  |
| Phoenix CL               | H                 | <b>2979</b>  | 1198        | 2088  | 108                    | ---  | 67   | ---                 | ---         | 7.1          | 52.7           | <b>41.7</b> | 19.6        |  |
| Plurax CL                | H                 | 2291         | <b>1902</b> | 2097  | 83                     | ---  | 80   | ---                 | ---         | 7.5          | 55.1           | <b>41.7</b> | 18.8        |  |
| Popular                  | H                 | 2288         | <b>1850</b> | 2069  | 83                     | ---  | 80   | ---                 | ---         | 6.7          | 56.1           | <b>41.5</b> | 18.7        |  |
| <b>Mean</b>              |                   | 2813         | 1572        | ---   | ---                    | ---  | 71   | ---                 | ---         | 7.1          | 53.5           | 40.7        | 19.8        |  |
| <b>CV</b>                |                   | 10           | 14          | ---   | ---                    | ---  | 12   | ---                 | ---         | 7.5          | 2.2            | 2.9         | 3.3         |  |
| <b>LSD (0.05)</b>        |                   | 528          | 367         | ---   | ---                    | ---  | 12   | ---                 | ---         | 1.0          | 2.1            | 2.6         | 1.4         |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.



Scottsbluff, Nebraska

Dipak Santra  
University of Nebraska-Lincoln

Planted: 9/2/2018  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 8/2/2019  
Herbicides: None  
Insecticides: None  
Irrigation: 5 in.  
Previous crop: NA  
Soil test: NA  
Fertilizer: NA  
Soil type: Tripp fine sandy loam  
Elevation: 3940 ft Latitude: 41° 51'N  
Comments: Above normal precipitation set the stage for high yields; however, severe hailstorms on 5/27/2019 and 6/7/2019 limited yield potential.

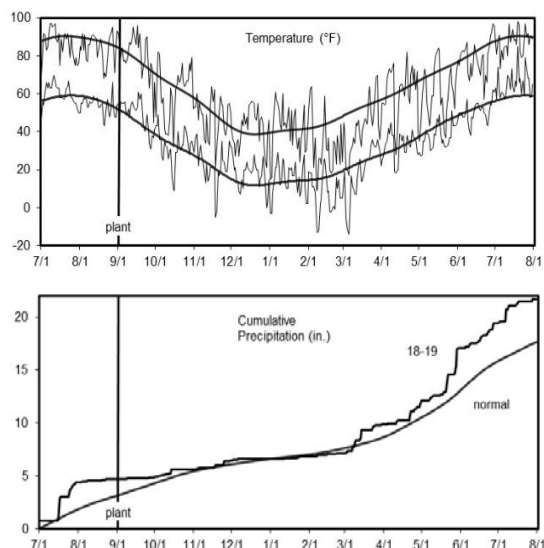


Table 32. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Scottsbluff, NE

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       |       | 50% bloom | Plant height | Shatter | Oil | Protein |
|-----------------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------|-------|-------|-----------|--------------|---------|-----|---------|
|                                   |                   | 2019                      | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (DOY) | (in.) | (%)       | (%)          | (%)     | (%) |         |
| <b>CROPLAN by WinField</b>        |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| CP115WRR                          | OP                | 511                       | <b>3447</b> | 1979  | 61                     | 89   | 67   | 78                  | 148   | 39    | 8.3       | ---          | ---     |     |         |
| CP225WRR                          | OP                | 493                       | 2672        | 1582  | 59                     | 79   | 43   | 61                  | 150   | 41    | 10.0      | ---          | ---     |     |         |
| CP320WRR                          | OP                | <b>971</b>                | <b>3025</b> | 1998  | 116                    | 93   | 67   | 80                  | 144   | 42    | 6.7       | ---          | ---     |     |         |
| <b>Kansas State University</b>    |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| KS4670                            | OP                | 761                       | ---         | ---   | 91                     | 94   | ---  | ---                 | 141   | 43    | 11.7      | ---          | ---     |     |         |
| KS4719                            | OP                | <b>1217</b>               | ---         | ---   | 146                    | 93   | ---  | ---                 | 144   | 42    | 6.7       | ---          | ---     |     |         |
| KSR4723                           | OP                | 648                       | ---         | ---   | 78                     | 89   | ---  | ---                 | 146   | 39    | 15.0      | ---          | ---     |     |         |
| KSR4767                           | OP                | 790                       | ---         | ---   | 95                     | 90   | ---  | ---                 | 144   | 44    | 5.0       | ---          | ---     |     |         |
| Riley                             | OP                | <b>918</b>                | <b>3506</b> | 2212  | 110                    | 93   | 53   | 73                  | 141   | 42    | 10.0      | ---          | ---     |     |         |
| Sumner                            | OP                | 570                       | 2603        | 1586  | 68                     | 87   | 33   | 60                  | 146   | 38    | 8.3       | ---          | ---     |     |         |
| Surefire                          | OP                | <b>1078</b>               | <b>3339</b> | 2209  | 129                    | 87   | 50   | 68                  | 148   | 43    | 8.3       | ---          | ---     |     |         |
| Wichita                           | OP                | <b>871</b>                | <b>2989</b> | 1930  | 104                    | 79   | 27   | 53                  | 150   | 40    | 11.7      | ---          | ---     |     |         |
| <b>KWS-MOMONT</b>                 |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| QUARTZ                            | OP                | 717                       | <b>3563</b> | 2140  | 86                     | 87   | 57   | 72                  | 146   | 36    | 5.0       | ---          | ---     |     |         |
| <b>Ohlde Seed Farms</b>           |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| Torrington                        | OP                | <b>1124</b>               | <b>3089</b> | 2106  | 134                    | 90   | 60   | 75                  | 141   | 45    | 6.7       | ---          | ---     |     |         |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| Star 915W                         | OP                | <b>879</b>                | 2313        | 1596  | 105                    | 93   | 12   | 53                  | 150   | 40    | 8.3       | ---          | ---     |     |         |
| Star 930W                         | OP                | <b>985</b>                | <b>3470</b> | 2227  | 118                    | 90   | 70   | 80                  | 144   | 41    | 8.3       | ---          | ---     |     |         |
| <b>Mean</b>                       |                   | 835                       | 2925        | ---   | ---                    | 90   | 46   | ---                 | 146   | 41    | 8.7       | ---          | ---     |     |         |
| <b>CV</b>                         |                   | 26                        | 18          | ---   | ---                    | 5    | 30   | ---                 | 3     | 7     | 44.9      | ---          | ---     |     |         |
| <b>LSD (0.05)</b>                 |                   | 358                       | 892         | ---   | ---                    | 8    | 23   | ---                 | NS    | 4     | NS        | ---          | ---     |     |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Table 33. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Scottsbluff, NE**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       |       | 50% bloom | Plant height | Shatter | Oil | Protein |
|--------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------|-------|-------|-----------|--------------|---------|-----|---------|
|                          |                   | 2019                      | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (DOY) | (in.) | (%)       | (%)          | (%)     | (%) |         |
| <b>Bayer CropScience</b> |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| CWH189D                  | H                 | 1044                      | <b>3383</b> | 2214  | 95                     | 57   | 57   | 57                  | 146   | 45    | 3.3       | ---          | ---     |     |         |
| CWH190D                  | H                 | 1066                      | <b>3248</b> | 2157  | 97                     | 100  | 50   | 75                  | 143   | 45    | 3.3       | ---          | ---     |     |         |
| CWH249D                  | H                 | 1260                      | ---         | ---   | 114                    | 90   | ---  | ---                 | 146   | 45    | 3.3       | ---          | ---     |     |         |
| CWH317D                  | H                 | 927                       | ---         | ---   | 84                     | 83   | ---  | ---                 | 145   | 41    | 1.7       | ---          | ---     |     |         |
| <b>KWS-MOMONT</b>        |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| HAMOUR                   | H                 | 1181                      | 1914        | 1548  | 107                    | 60   | 7    | 34                  | 150   | 46    | 6.7       | ---          | ---     |     |         |
| MH 14ES125               | H                 | 1276                      | ---         | ---   | 116                    | 70   | ---  | ---                 | 150   | 46    | 8.3       | ---          | ---     |     |         |
| MH 15AY085               | H                 | 701                       | ---         | ---   | 64                     | 23   | ---  | ---                 | 153   | 46    | 3.3       | ---          | ---     |     |         |
| MH 15HT227               | H                 | 1262                      | ---         | ---   | 115                    | 83   | ---  | ---                 | 148   | 45    | 1.7       | ---          | ---     |     |         |
| MH 15HT229               | H                 | 1229                      | ---         | ---   | 112                    | 83   | ---  | ---                 | 139   | 46    | 5.0       | ---          | ---     |     |         |
| <b>Limagrain Cereals</b> |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| Advocat                  | H                 | 1206                      | ---         | ---   | 109                    | 80   | ---  | ---                 | 146   | 44    | 5.0       | ---          | ---     |     |         |
| Architect                | H                 | 847                       | ---         | ---   | 77                     | 50   | ---  | ---                 | 148   | 44    | 1.7       | ---          | ---     |     |         |
| <b>Rubisco Seeds LLC</b> |                   |                           |             |       |                        |      |      |                     |       |       |           |              |         |     |         |
| Phoenix CL               | H                 | 1281                      | ---         | ---   | 116                    | 87   | ---  | ---                 | 141   | 43    | 3.3       | ---          | ---     |     |         |
| Plurax CL                | H                 | 1113                      | <b>2945</b> | 2029  | 101                    | 77   | 33   | 55                  | 141   | 44    | 1.7       | ---          | ---     |     |         |
| Popular                  | H                 | 1035                      | 2503        | 1769  | 94                     | 90   | 4    | 47                  | 139   | 43    | 6.7       | ---          | ---     |     |         |
| <b>Mean</b>              |                   | 1102                      | 2581        | ---   | ---                    | 74   | 24   | ---                 | 145   | 44    | 3.9       | ---          | ---     |     |         |
| <b>CV</b>                |                   | 27                        | 18          | ---   | ---                    | 22   | 40   | ---                 | 4     | 6     | 79.5      | ---          | ---     |     |         |
| <b>LSD (0.05)</b>        |                   | NS                        | 837         | ---   | ---                    | 28   | 16   | ---                 | NS    | NS    | NS        | ---          | ---     |     |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

Clovis, New Mexico

Sangu Angadi and Sultan Begna  
New Mexico State University

Planted: 9/11/2018 in 6-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Desiccant: 2 pt/a Diquat on 6/12/2019  
Harvested: 6/19/2019  
Herbicides: 1.5 pt/a Treflan, 5.33 oz/a Section 3  
Insecticides: 20 oz/a Prevathon, 6.4 oz/a Leverage  
Irrigation: 8.3 in.  
Previous crop: Wheat  
Soil test: P=19.0 ppm, K=531 ppm, pH=7.9, OM=2.10%  
Fertilizer: 150-40-0-30 lb N-P-K-S fertilizer in fall  
Soil type: Olton clay loam  
Elevation: 4437 ft Latitude: 34° 36'N  
Comments: Above normal precipitation and cooler temperatures during flowering and grain filling contributed to excellent yields at this location.

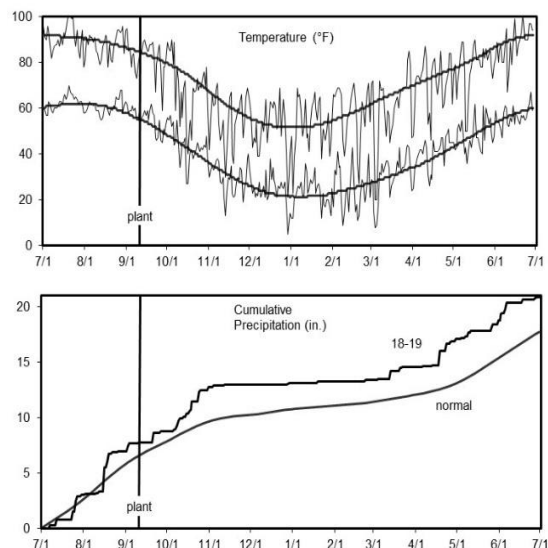


Table 34. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Clovis, NM

| Name                              | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) | 50% bloom (DOY) | Plant height (in.) | Test  |                |         |
|-----------------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|-----------------|--------------------|-------|----------------|---------|
|                                   |                   | 2019         | 2018        | 2-yr. | 2019                   | 2019 | 2018 |                     |                 |                    | 2-yr. | weight (lb/bu) | Oil (%) |
| <b>CROPLAN by WinField</b>        |                   |              |             |       |                        |      |      |                     |                 |                    |       |                |         |
| CP115WRR                          | OP                | 1894         | <b>2821</b> | 2358  | 59                     | 97   | ---  | ---                 | 91              | 36                 | 49.5  | 38.8           | 27.5    |
| CP225WRR                          | OP                | 2840         | <b>2844</b> | 2842  | 89                     | 93   | ---  | ---                 | 93              | 39                 | 50.2  | 41.6           | 22.3    |
| CP320WRR                          | OP                | 2855         | <b>2947</b> | 2901  | 90                     | 97   | ---  | ---                 | 91              | 39                 | 50.2  | 41.6           | 22.7    |
| <b>Kansas State University</b>    |                   |              |             |       |                        |      |      |                     |                 |                    |       |                |         |
| KS4670                            | OP                | 2815         | <b>2977</b> | 2896  | 88                     | 92   | ---  | ---                 | 92              | 39                 | 50.0  | 40.4           | 25.2    |
| KS4719                            | OP                | <b>3431</b>  | ---         | ---   | 108                    | 97   | ---  | ---                 | 99              | 43                 | 50.4  | 42.7           | 22.5    |
| KSR4723                           | OP                | <b>3547</b>  | <b>2561</b> | 3054  | 111                    | 92   | ---  | ---                 | 92              | 41                 | 49.9  | 42.3           | 22.2    |
| KSR4767                           | OP                | <b>3513</b>  | ---         | ---   | 110                    | 97   | ---  | ---                 | 94              | 43                 | 50.3  | 42.2           | 22.8    |
| Riley                             | OP                | <b>3500</b>  | <b>3208</b> | 3354  | 110                    | 97   | ---  | ---                 | 91              | 39                 | 50.5  | 41.7           | 23.9    |
| Sumner                            | OP                | <b>3111</b>  | <b>3136</b> | 3123  | 98                     | 85   | ---  | ---                 | 92              | 37                 | 50.9  | 39.5           | 26.2    |
| Surefire                          | OP                | <b>3219</b>  | <b>3100</b> | 3159  | 101                    | 97   | ---  | ---                 | 95              | 43                 | 50.1  | 42.1           | 22.6    |
| Wichita                           | OP                | <b>3322</b>  | <b>2679</b> | 3001  | 104                    | 97   | ---  | ---                 | 93              | 40                 | 50.4  | 41.0           | 24.3    |
| <b>KWS-MOMONT</b>                 |                   |              |             |       |                        |      |      |                     |                 |                    |       |                |         |
| QUARTZ                            | OP                | <b>3872</b>  | 2373        | 3122  | 121                    | 98   | ---  | ---                 | 99              | 37                 | 50.4  | 41.0           | 24.0    |
| <b>Ohlde Seed Farms</b>           |                   |              |             |       |                        |      |      |                     |                 |                    |       |                |         |
| Torrington                        | OP                | <b>3326</b>  | <b>3016</b> | 3171  | 104                    | 97   | ---  | ---                 | 91              | 41                 | 50.4  | 41.0           | 24.3    |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |             |       |                        |      |      |                     |                 |                    |       |                |         |
| Star 915W                         | OP                | <b>3407</b>  | 1995        | 2701  | 107                    | 90   | ---  | ---                 | 92              | 39                 | 50.2  | 40.4           | 25.7    |
| Star 930W                         | OP                | <b>3171</b>  | <b>2904</b> | 3037  | 99                     | 95   | ---  | ---                 | 92              | 39                 | 50.1  | 40.6           | 24.4    |
| <b>Mean</b>                       |                   | 3188         | 2830        | ---   | ---                    | 95   | ---  | ---                 | 93              | 40                 | 50.2  | 41.1           | 24.0    |
| <b>CV</b>                         |                   | 16           | 19          | ---   | ---                    | 5    | ---  | ---                 | 1               | 8                  | 1.4   | 3.7            | 7.1     |
| <b>LSD (0.05)</b>                 |                   | 870          | 869         | ---   | ---                    | 8    | ---  | ---                 | 2               | 5                  | 1.1   | NS             | NS      |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 35. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Clovis, NM**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |       | 50% bloom | Plant height | Test weight |      | Oil | Protein |
|--------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------|-------|-----------|--------------|-------------|------|-----|---------|
|                          |                   | 2019                      | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (DOY) | (in.)     | (lb/bu)      | (%)         | (%)  |     |         |
| <b>Bayer CropScience</b> |                   |                           |             |       |                        |      |      |                     |       |           |              |             |      |     |         |
| CWH189D                  | H                 | <b>3734</b>               | 3013        | 3374  | 108                    | 95   | ---  | ---                 | 95    | 39        | 50.0         | 38.3        | 24.9 |     |         |
| CWH190D                  | H                 | <b>3896</b>               | <b>3292</b> | 3594  | 113                    | 95   | ---  | ---                 | 95    | 41        | 51.1         | 40.8        | 23.6 |     |         |
| CWH249D                  | H                 | <b>3684</b>               | ---         | ---   | 107                    | 95   | ---  | ---                 | 93    | 39        | 50.4         | <b>41.5</b> | 23.8 |     |         |
| CWH317D                  | H                 | <b>3119</b>               | ---         | ---   | 90                     | 95   | ---  | ---                 | 91    | 37        | 49.7         | 38.0        | 24.9 |     |         |
| <b>KWS-MOMONT</b>        |                   |                           |             |       |                        |      |      |                     |       |           |              |             |      |     |         |
| HAMOUR                   | H                 | <b>3919</b>               | <b>3364</b> | 3641  | 113                    | 95   | ---  | ---                 | 98    | 42        | 51.2         | <b>41.4</b> | 23.3 |     |         |
| MH 14ES125               | H                 | <b>3839</b>               | ---         | ---   | 111                    | 95   | ---  | ---                 | 94    | 44        | 49.6         | <b>41.8</b> | 22.9 |     |         |
| MH 15AY085               | H                 | <b>3439</b>               | <b>3302</b> | 3371  | 99                     | 95   | ---  | ---                 | 96    | 39        | 50.0         | 39.5        | 23.7 |     |         |
| MH 15HT227               | H                 | <b>4046</b>               | ---         | ---   | 117                    | 95   | ---  | ---                 | 92    | 43        | 49.7         | <b>42.7</b> | 23.2 |     |         |
| MH 15HT229               | H                 | <b>3974</b>               | <b>3363</b> | 3669  | 115                    | 95   | ---  | ---                 | 92    | 39        | 49.5         | <b>42.3</b> | 23.7 |     |         |
| <b>Limagrain Cereals</b> |                   |                           |             |       |                        |      |      |                     |       |           |              |             |      |     |         |
| Advocat                  | H                 | 2568                      | ---         | ---   | 74                     | 95   | ---  | ---                 | 91    | 41        | 49.7         | 41.1        | 23.3 |     |         |
| Architect                | H                 | <b>2989</b>               | ---         | ---   | 86                     | 95   | ---  | ---                 | 94    | 45        | 49.0         | <b>43.1</b> | 22.5 |     |         |
| <b>Rubisco Seeds LLC</b> |                   |                           |             |       |                        |      |      |                     |       |           |              |             |      |     |         |
| Phoenix CL               | H                 | <b>2861</b>               | <b>3295</b> | 3078  | 83                     | 95   | ---  | ---                 | 91    | 41        | 50.4         | 40.8        | 23.9 |     |         |
| Plurax CL                | H                 | <b>3045</b>               | <b>3428</b> | 3237  | 88                     | 95   | ---  | ---                 | 89    | 39        | 50.8         | <b>43.3</b> | 21.3 |     |         |
| Popular                  | H                 | <b>3298</b>               | <b>3605</b> | 3451  | 95                     | 95   | ---  | ---                 | 90    | 38        | 50.9         | <b>42.4</b> | 22.5 |     |         |
| <b>Mean</b>              |                   | 3458                      | 3367        | ---   | ---                    | 95   | ---  | ---                 | 93    | 41        | 50.1         | 41.2        | 23.4 |     |         |
| <b>CV</b>                |                   | 21                        | 8           | ---   | ---                    | 0    | ---  | ---                 | 1     | 7         | 1.5          | 2.4         | 4.8  |     |         |
| <b>LSD (0.05)</b>        |                   | 1230                      | 450         | ---   | ---                    | 0    | ---  | ---                 | 2     | 5         | 1.2          | 2.2         | NS   |     |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

Chickasha, Oklahoma

Josh Lofton  
Oklahoma State University

Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Previous crop: Wheat  
Soil test: 58-188 ppm P-K, pH=6.9  
Soil type: McClain silty clay loam  
Elevation: 1085 ft Latitude: 35° 02'N  
Comments: Average yields and oil contents were reported at this location.

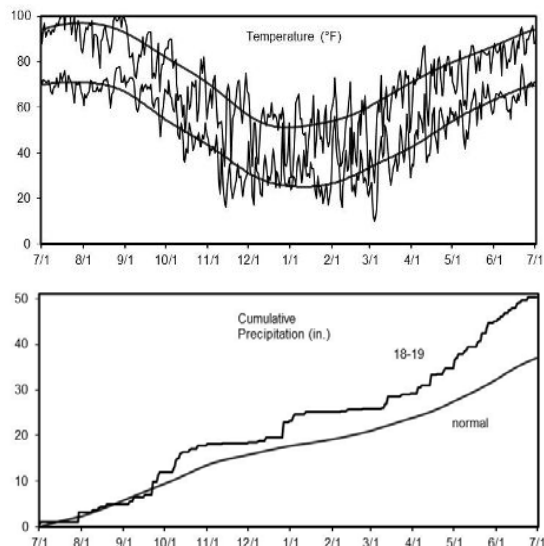


Table 36. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Chickasha, OK

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Plant height (in.) | Moisture (%) | Test weight |             |      |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|------|--------------------|--------------|-------------|-------------|------|
|                                   |                   | 2019         | 2017 | 2-yr. | 2019                   | 2019 | 2017 |                    |              | 2-yr.       | (lb/bu)     | (%)  |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |      |                    |              |             |             |      |
| CP115WRR                          | OP                | 1427         | 3747 | 2587  | 91                     | ---  | ---  | ---                | 8.0          | 47.0        | <b>41.3</b> | 24.2 |
| CP225WRR                          | OP                | 2173         | 3381 | 2777  | 139                    | ---  | ---  | ---                | 8.1          | 49.5        | 38.5        | 25.3 |
| CP320WRR                          | OP                | 2238         | 3659 | 2949  | 143                    | ---  | ---  | ---                | 8.3          | 48.8        | 38.4        | 25.3 |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |      |                    |              |             |             |      |
| KS4670                            | OP                | 1505         | ---  | ---   | 96                     | ---  | ---  | ---                | 8.0          | 49.7        | <b>40.1</b> | 24.1 |
| KS4719                            | OP                | 2129         | ---  | ---   | 136                    | ---  | ---  | ---                | 8.7          | 49.3        | 38.5        | 25.3 |
| KSR4723                           | OP                | 842          | ---  | ---   | 54                     | ---  | ---  | ---                | 8.9          | 50.0        | <b>40.5</b> | 24.1 |
| KSR4767                           | OP                | 1152         | ---  | ---   | 74                     | ---  | ---  | ---                | 9.4          | 48.7        | <b>40.3</b> | 24.1 |
| Riley                             | OP                | 2112         | 3106 | 2609  | 135                    | ---  | ---  | ---                | 8.0          | 48.3        | <b>40.5</b> | 24.5 |
| Sumner                            | OP                | 1104         | 3247 | 2176  | 70                     | ---  | ---  | ---                | 8.2          | 49.9        | <b>41.2</b> | 24.1 |
| Surefire                          | OP                | 1584         | 3717 | 2650  | 101                    | ---  | ---  | ---                | 8.9          | 50.3        | <b>40.1</b> | 24.7 |
| Wichita                           | OP                | 1658         | 3182 | 2420  | 106                    | ---  | ---  | ---                | 8.8          | 49.5        | <b>40.6</b> | 24.4 |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |      |                    |              |             |             |      |
| QUARTZ                            | OP                | 1558         | 3947 | 2752  | 99                     | ---  | ---  | ---                | 8.3          | 50.5        | <b>41.2</b> | 23.3 |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |      |                    |              |             |             |      |
| Torrington                        | OP                | 1361         | 4167 | 2764  | 87                     | ---  | ---  | ---                | 8.9          | 49.5        | <b>41.0</b> | 23.5 |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |      |                    |              |             |             |      |
| Star 915W                         | OP                | 1588         | 3664 | 2626  | 101                    | ---  | ---  | ---                | 7.8          | 50.3        | <b>40.2</b> | 25.0 |
| Star 930W                         | OP                | 1065         | 3598 | 2332  | 68                     | ---  | ---  | ---                | 10.1         | 50.2        | <b>41.2</b> | 23.4 |
| <b>Mean</b>                       |                   | 1566         | 3400 | ---   | ---                    | ---  | ---  | ---                | 8.6          | 49.4        | <b>40.2</b> | 24.4 |
| <b>CV</b>                         |                   | ---          | 17   | ---   | ---                    | ---  | ---  | ---                | ---          | ---         | 2.3         | 3.3  |
| <b>LSD (0.05)</b>                 |                   | ---          | NS   | ---   | ---                    | ---  | ---  | ---                | ---          | ---         | 2.0         | NS   |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

**Table 37. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Chickasha, OK**

| Name                     | Type <sup>1</sup> | Yield (lb/a) |             |       | Yield (% of test avg.) |      |      | Winter survival (%) |              |                | Plant height (in.) | Test        |             |  |
|--------------------------|-------------------|--------------|-------------|-------|------------------------|------|------|---------------------|--------------|----------------|--------------------|-------------|-------------|--|
|                          |                   | 2019         | 2017        | 2-yr. | 2019                   | 2019 | 2017 | 2-yr.               | Moisture (%) | weight (lb/bu) |                    | Oil (%)     | Protein (%) |  |
| <b>Bayer CropScience</b> |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| CWH189D                  | H                 | 1627         | <b>5836</b> | 3732  | 67                     | ---  | ---  | ---                 | ---          | 9.4            | 49.4               | 38.6        | 25.1        |  |
| CWH190D                  | H                 | 2051         | <b>4909</b> | 3480  | 85                     | ---  | ---  | ---                 | ---          | 10.1           | 51.0               | 39.8        | 25.1        |  |
| CWH249D                  | H                 | 2325         | ---         | ---   | 96                     | ---  | ---  | ---                 | ---          | 8.7            | 49.9               | <b>41.2</b> | 23.6        |  |
| CWH317D                  | H                 | 2513         | ---         | ---   | 104                    | ---  | ---  | ---                 | ---          | 9.1            | 49.5               | 40.4        | 22.8        |  |
| <b>KWS-MOMONT</b>        |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| HAMOUR                   | H                 | 1514         | ---         | ---   | 63                     | ---  | ---  | ---                 | ---          | 5.6            | 33.9               | <b>41.6</b> | 23.8        |  |
| MH 14ES125               | H                 | 2600         | ---         | ---   | 108                    | ---  | ---  | ---                 | ---          | 8.7            | 48.5               | 39.3        | 24.6        |  |
| MH 15AY085               | H                 | 2365         | ---         | ---   | 98                     | ---  | ---  | ---                 | ---          | 8.9            | 50.7               | <b>41.2</b> | 24.3        |  |
| MH 15HT227               | H                 | 2971         | ---         | ---   | 123                    | ---  | ---  | ---                 | ---          | 8.6            | 47.2               | <b>42.8</b> | 23.1        |  |
| MH 15HT229               | H                 | 2810         | ---         | ---   | 116                    | ---  | ---  | ---                 | ---          | 8.7            | 48.9               | <b>41.8</b> | 24.6        |  |
| <b>Limagrain Cereals</b> |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| Advocat                  | H                 | 2740         | ---         | ---   | 113                    | ---  | ---  | ---                 | ---          | 9.5            | 48.8               | <b>41.4</b> | 23.0        |  |
| Architect                | H                 | 3285         | ---         | ---   | 136                    | ---  | ---  | ---                 | ---          | 9.0            | 48.8               | <b>41.7</b> | 23.1        |  |
| <b>Rubisco Seeds LLC</b> |                   |              |             |       |                        |      |      |                     |              |                |                    |             |             |  |
| Phoenix CL               | H                 | 2897         | ---         | ---   | 120                    | ---  | ---  | ---                 | ---          | 8.3            | 49.6               | <b>42.8</b> | 22.6        |  |
| Plurax CL                | H                 | 2491         | 4571        | 3531  | 103                    | ---  | ---  | ---                 | ---          | 8.9            | 50.4               | <b>42.6</b> | 21.9        |  |
| Popular                  | H                 | 1662         | 4343        | 3003  | 69                     | ---  | ---  | ---                 | ---          | 8.8            | 50.3               | <b>42.5</b> | 22.5        |  |
| <b>Mean</b>              |                   | 2418         | 4574        | ---   | ---                    | ---  | ---  | ---                 | ---          | 8.7            | 48.4               | 41.4        | 23.5        |  |
| <b>CV</b>                |                   | ---          | 13          | ---   | ---                    | ---  | ---  | ---                 | ---          | ---            | ---                | 2.5         | 3.8         |  |
| <b>LSD (0.05)</b>        |                   | ---          | 1004        | ---   | ---                    | ---  | ---  | ---                 | ---          | ---            | ---                | 2.3         | NS          |  |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

Bushland, Texas

Jourdan Bell  
Texas A&M University

Planted: 9/17/2018 in 30-in. rows  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 7/11/2019  
Herbicides: 1 pt/a Treflan  
Insecticides: None  
Irrigation: None  
Previous crop: Fallow  
Soil test: NA  
Fertilizer: 120-0-0 lb N-P-K fertilizer in spring  
Soil type: Pullman clay loam  
Elevation: 3825 ft Latitude: 35° 11'N  
Comments: Some winterkill was reported but yields were still very good as the crop was able to compensate for thinner stands. Yields for 2018 are an average of two planting dates.

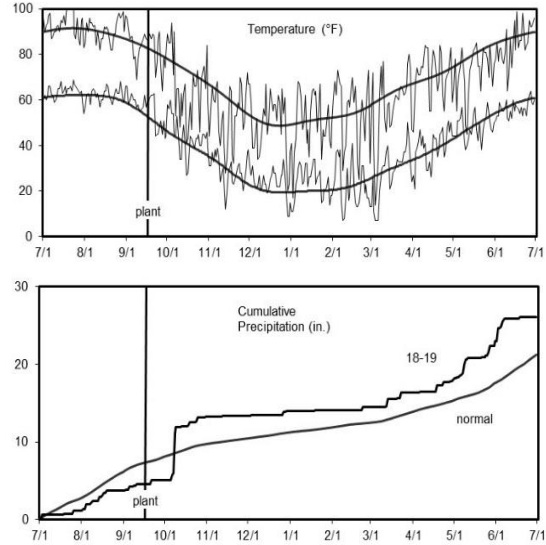


Table 38. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Bushland, TX

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |      | Winter survival (%) |        | Fall stand | Fall vigor | 50% bloom   | Oil  | Protein |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|------|---------------------|--------|------------|------------|-------------|------|---------|
|                                   |                   | 2019         | 2018 | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.               | (0-10) | (1-5)      | (DOY)      | (%)         | (%)  |         |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| CP115WRR                          | OP                | 1459         | 466  | 962   | 94                     | 78   | ---  | ---                 | 8.3    | 4.1        | 98         | <b>34.6</b> | 26.9 |         |
| CP225WRR                          | OP                | 1287         | 557  | 922   | 83                     | 70   | ---  | ---                 | 7.5    | 3.8        | 102        | <b>35.3</b> | 28.0 |         |
| CP320WRR                          | OP                | <b>1784</b>  | ---  | ---   | 115                    | 73   | ---  | ---                 | 7.3    | 3.6        | 98         | 33.5        | 26.7 |         |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| Riley                             | OP                | 1212         | 512  | 862   | 78                     | 83   | ---  | ---                 | 8.5    | 4.3        | 100        | 32.6        | 26.4 |         |
| Surefire                          | OP                | 1339         | ---  | ---   | 86                     | 90   | ---  | ---                 | 8.8    | 4.4        | 100        | <b>35.0</b> | 28.1 |         |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| QUARTZ                            | OP                | <b>1935</b>  | 726  | 1331  | 124                    | 73   | ---  | ---                 | 8.8    | 4.4        | 98         | <b>35.0</b> | 25.8 |         |
| <b>Limagrain Cereals</b>          |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| Advocat                           | H                 | 1498         | ---  | ---   | 96                     | 80   | ---  | ---                 | 8.3    | 4.1        | 99         | 33.0        | 27.1 |         |
| Architect                         | H                 | <b>1766</b>  | ---  | ---   | 113                    | 80   | ---  | ---                 | 8.5    | 4.3        | 98         | 34.1        | 27.2 |         |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| Torrington                        | OP                | 1526         | ---  | ---   | 98                     | 80   | ---  | ---                 | 8.3    | 4.1        | 99         | 33.3        | 27.1 |         |
| <b>Rubisco Seeds LLC</b>          |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| Phoenix CL                        | H                 | 1547         | 733  | 1140  | 99                     | 60   | ---  | ---                 | 6.3    | 3.1        | 99         | 33.1        | 26.7 |         |
| Plurax CL                         | H                 | <b>1898</b>  | 618  | 1258  | 122                    | 73   | ---  | ---                 | 7.3    | 3.6        | 98         | <b>36.7</b> | 26.2 |         |
| Popular                           | H                 | <b>1752</b>  | 497  | 1124  | 112                    | 85   | ---  | ---                 | 8.5    | 4.3        | 98         | <b>35.6</b> | 26.1 |         |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |      |                     |        |            |            |             |      |         |
| Star 915W                         | OP                | 1108         | 723  | 915   | 71                     | 70   | ---  | ---                 | 8.5    | 4.3        | 100        | 30.8        | 27.1 |         |
| Star 930W                         | OP                | <b>1705</b>  | 718  | 1211  | 109                    | 73   | ---  | ---                 | 8.3    | 4.1        | 101        | 33.9        | 26.3 |         |
| <b>Mean</b>                       |                   | 1558         | ---  | ---   | ---                    | 75   | ---  | ---                 | 8.0    | 4.0        | 99         | 34.0        | 26.8 |         |
| <b>CV</b>                         |                   | 14           | ---  | ---   | ---                    | 17   | ---  | ---                 | 13.4   | 13.4       | 2          | 3.2         | 2.8  |         |
| <b>LSD (0.05)</b>                 |                   | 378          | ---  | ---   | ---                    | 18   | ---  | ---                 | 15.1   | 0.8        | 3          | 2.4         | NS   |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

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Chillicothe, Texas

Emi Kimura  
Texas A&M University

Planted: 10/1/2018  
Seeding Rate OP: 500,000 seeds/a  
Seeding Rate Hybrid: 300,000 seeds/a  
Harvested: 6/11/2019  
Herbicides: None  
Insecticides: None  
Irrigation: None  
Previous crop: Fallow  
Soil test: NA  
Fertilizer: None  
Soil type: Abilene clay loam  
Elevation: 1401 ft Latitude: 34° 11'N  
Comments: Stands were thinned by winterkill but the plants compensated well. Hybrids yielded more than the OPs.

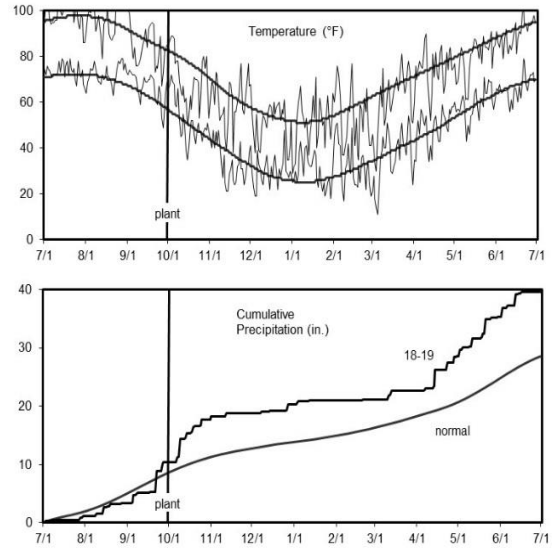


Table 39. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Chillicothe, TX

| Name                              | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |      | Plant height (in.) | Moisture (%) | Test weight |         |      |
|-----------------------------------|-------------------|---------------------------|------|-------|------------------------|------|------|--------------------|--------------|-------------|---------|------|
|                                   |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2019 | 2018 |                    |              | 2-yr.       | (lb/bu) | (%)  |
| <b>CROPLAN by WinField</b>        |                   |                           |      |       |                        |      |      |                    |              |             |         |      |
| CP115WRR                          | OP                | 702                       | ---  | ---   | 79                     | 60   | ---  | ---                | 6.9          | 47.3        | 42.2    | 24.3 |
| CP225WRR                          | OP                | 859                       | ---  | ---   | 97                     | 50   | ---  | ---                | 8.7          | 48.1        | 41.9    | 23.1 |
| CP320WRR                          | OP                | 872                       | ---  | ---   | 98                     | 53   | ---  | ---                | 6.8          | 50.7        | 40.9    | 23.6 |
| <b>Kansas State University</b>    |                   |                           |      |       |                        |      |      |                    |              |             |         |      |
| KS4670                            | OP                | 698                       | ---  | ---   | 79                     | 63   | ---  | ---                | 6.8          | 49.2        | 41.6    | 23.4 |
| KS4719                            | OP                | 917                       | ---  | ---   | 103                    | 70   | ---  | ---                | 7.6          | 47.5        | 40.0    | 24.3 |
| KSR4723                           | OP                | 933                       | ---  | ---   | 105                    | 67   | ---  | ---                | 7.0          | 48.8        | 40.1    | 24.5 |
| KSR4767                           | OP                | 637                       | ---  | ---   | 72                     | 57   | ---  | ---                | 7.0          | 48.3        | 40.7    | 24.1 |
| Riley                             | OP                | 792                       | ---  | ---   | 89                     | 50   | ---  | ---                | 7.5          | 47.2        | 42.6    | 22.9 |
| Sumner                            | OP                | 739                       | ---  | ---   | 83                     | 53   | ---  | ---                | 7.0          | 48.9        | 41.9    | 23.7 |
| Surefire                          | OP                | 915                       | ---  | ---   | 103                    | 67   | ---  | ---                | 7.2          | 49.4        | 41.8    | 23.8 |
| Wichita                           | OP                | 1104                      | ---  | ---   | 124                    | 67   | ---  | ---                | 7.6          | 48.6        | 40.8    | 25.0 |
| <b>KWS-MOMONT</b>                 |                   |                           |      |       |                        |      |      |                    |              |             |         |      |
| QUARTZ                            | OP                | <b>1527</b>               | ---  | ---   | 172                    | 67   | ---  | ---                | 7.1          | 47.5        | 41.4    | 23.5 |
| <b>Ohlde Seed Farms</b>           |                   |                           |      |       |                        |      |      |                    |              |             |         |      |
| Torrington                        | OP                | 978                       | ---  | ---   | 110                    | 80   | ---  | ---                | 7.3          | 47.1        | 41.1    | 23.9 |
| <b>Star Specialty Seeds, Inc.</b> |                   |                           |      |       |                        |      |      |                    |              |             |         |      |
| Star 915W                         | OP                | 743                       | ---  | ---   | 84                     | 73   | ---  | ---                | 7.2          | 50.1        | 41.3    | 24.7 |
| Star 930W                         | OP                | 915                       | ---  | ---   | 103                    | 67   | ---  | ---                | 7.2          | 49.6        | 39.5    | 24.7 |
| <b>Mean</b>                       |                   | 889                       | ---  | ---   | ---                    | 63   | ---  | ---                | 7.3          | 48.5        | 41.2    | 24.0 |
| <b>CV</b>                         |                   | 24                        | ---  | ---   | ---                    | 24   | ---  | ---                | 12.7         | 3.2         | 2.3     | 3.0  |
| <b>LSD (0.05)</b>                 |                   | 353                       | ---  | ---   | ---                    | NS   | ---  | ---                | NS           | 1.6         | NS      | NS   |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

**Table 40. Results for the 2019 National Winter Canola Variety Trial, hybrid cultivars, at Chillicothe, TX**

| Name                     | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |      |       | Yield (% of test avg.) |      |       | Winter survival (%) |      |       | Plant height (in.) | Test         |                |         |
|--------------------------|-------------------|---------------------------|------|-------|------------------------|------|-------|---------------------|------|-------|--------------------|--------------|----------------|---------|
|                          |                   | 2019                      | 2018 | 2-yr. | 2019                   | 2018 | 2-yr. | 2019                | 2018 | 2-yr. |                    | Moisture (%) | weight (lb/bu) | Oil (%) |
| <b>Bayer CropScience</b> |                   |                           |      |       |                        |      |       |                     |      |       |                    |              |                |         |
| CWH189D                  | H                 | <b>1796</b>               | ---  | ---   | 128                    | 67   | ---   | ---                 | ---  | 7.0   | 49.5               | 39.6         | 24.6           |         |
| CWH190D                  | H                 | <b>1393</b>               | ---  | ---   | 99                     | 40   | ---   | ---                 | ---  | 6.9   | 50.1               | <b>42.6</b>  | 23.8           |         |
| CWH249D                  | H                 | 937                       | ---  | ---   | 67                     | 47   | ---   | ---                 | ---  | 6.7   | 47.7               | 40.2         | 25.3           |         |
| CWH317D                  | H                 | <b>1686</b>               | ---  | ---   | 120                    | 60   | ---   | ---                 | ---  | 7.3   | 47.1               | 40.1         | 24.1           |         |
| <b>KWS-MOMONT</b>        |                   |                           |      |       |                        |      |       |                     |      |       |                    |              |                |         |
| HAMOUR                   | H                 | 1122                      | ---  | ---   | 80                     | 53   | ---   | ---                 | ---  | 7.5   | 48.0               | <b>42.6</b>  | 22.6           |         |
| MH 14ES125               | H                 | <b>1472</b>               | ---  | ---   | 105                    | 68   | ---   | ---                 | ---  | 7.7   | 47.9               | 39.8         | 24.7           |         |
| MH 15AY085               | H                 | 1307                      | ---  | ---   | 93                     | 60   | ---   | ---                 | ---  | 7.5   | 45.7               | 41.6         | 23.2           |         |
| MH 15HT227               | H                 | <b>1526</b>               | ---  | ---   | 109                    | 47   | ---   | ---                 | ---  | 8.4   | 44.9               | <b>42.5</b>  | 24.5           |         |
| MH 15HT229               | H                 | <b>1728</b>               | ---  | ---   | 123                    | 60   | ---   | ---                 | ---  | 7.6   | 43.0               | <b>42.7</b>  | 23.8           |         |
| <b>Limagrain Cereals</b> |                   |                           |      |       |                        |      |       |                     |      |       |                    |              |                |         |
| Advocat                  | H                 | 1045                      | ---  | ---   | 75                     | 60   | ---   | ---                 | ---  | 7.4   | 45.1               | 41.7         | 23.5           |         |
| Architect                | H                 | <b>1867</b>               | ---  | ---   | 133                    | 73   | ---   | ---                 | ---  | 7.8   | 48.1               | <b>42.3</b>  | 22.8           |         |
| <b>Rubisco Seeds LLC</b> |                   |                           |      |       |                        |      |       |                     |      |       |                    |              |                |         |
| Phoenix CL               | H                 | 1151                      | ---  | ---   | 82                     | 53   | ---   | ---                 | ---  | 7.8   | 46.0               | 41.0         | 24.2           |         |
| Plurax CL                | H                 | 1065                      | ---  | ---   | 76                     | 50   | ---   | ---                 | ---  | 6.8   | 49.4               | <b>44.0</b>  | 21.9           |         |
| Popular                  | H                 | <b>1508</b>               | ---  | ---   | 108                    | 65   | ---   | ---                 | ---  | 7.1   | 49.1               | <b>42.7</b>  | 22.8           |         |
| <b>Mean</b>              |                   | 1400                      | ---  | ---   | ---                    | 57   | ---   | ---                 | ---  | 7.4   | 47.3               | 41.7         | 23.7           |         |
| <b>CV</b>                |                   | 28                        | ---  | ---   | ---                    | 22   | ---   | ---                 | ---  | 7.1   | 4.3                | 2.5          | 5.1            |         |
| <b>LSD (0.05)</b>        |                   | 540                       | ---  | ---   | ---                    | 14   | ---   | ---                 | ---  | 0.9   | 3.4                | 2.2          | NS             |         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

Havre, Montana

Maryse Bourgault  
Montana State University

Planted: 9/13/2018 in 12-in. rows  
 Seeding Rate OP: 500,000 seeds/a  
 Seeding Rate Hybrid: 300,000 seeds/a  
 Harvested: 8/13/2019  
 Herbicides: 1 qt/a Treflan, 10 oz/a Assure II  
 Insecticides: None  
 Irrigation: None  
 Previous crop: Fallow  
 Soil test: 10.5-20-254 ppm N-P-K, pH=7.7  
 Fertilizer: NA  
 Soil type: Scobey clay loam  
 Elevation: 2563 ft Latitude: 48° 33'N  
 Comments: The trial overcame some challenging spring conditions and performed relatively well.

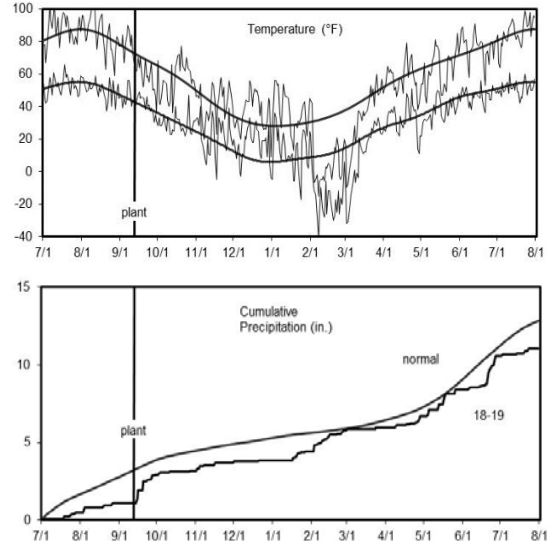


Table 41. Results for the 2019 National Winter Canola Variety Trial at Havre, MT

| Name                              | Type <sup>1</sup> | Yield (lb/a) |      |       | Yield (% of test avg.) |      |       | Plant height (in.) | Moisture (%) | Test weight |         |             |
|-----------------------------------|-------------------|--------------|------|-------|------------------------|------|-------|--------------------|--------------|-------------|---------|-------------|
|                                   |                   | 2019         | 2018 | 2-yr. | 2019                   | 2018 | 2-yr. |                    |              | (lb/bu)     | Oil (%) | Protein (%) |
| <b>CROPLAN by WinField</b>        |                   |              |      |       |                        |      |       |                    |              |             |         |             |
| CP115WRR                          | OP                | 995          | ---  | ---   | 82                     | 29   | ---   | ---                | 5.0          | 51.8        | 37.1    | <b>25.4</b> |
| CP225WRR                          | OP                | 1007         | ---  | ---   | 83                     | 42   | ---   | ---                | 5.1          | 52.3        | 37.8    | 24.1        |
| CP320WRR                          | OP                | 1274         | ---  | ---   | 105                    | 38   | ---   | ---                | 4.9          | 52.6        | 37.7    | <b>24.7</b> |
| <b>Kansas State University</b>    |                   |              |      |       |                        |      |       |                    |              |             |         |             |
| Riley                             | OP                | <b>1394</b>  | ---  | ---   | 115                    | 65   | ---   | ---                | 4.9          | 51.8        | 38.6    | 24.1        |
| Surefire                          | OP                | <b>1479</b>  | ---  | ---   | 122                    | 57   | ---   | ---                | 4.8          | 53.1        | 37.2    | <b>25.1</b> |
| <b>KWS-MOMONT</b>                 |                   |              |      |       |                        |      |       |                    |              |             |         |             |
| QUARTZ                            | OP                | 1240         | ---  | ---   | 102                    | 39   | ---   | ---                | 5.1          | 51.5        | 36.3    | 22.5        |
| <b>Ohlde Seed Farms</b>           |                   |              |      |       |                        |      |       |                    |              |             |         |             |
| Torrington                        | OP                | <b>1322</b>  | ---  | ---   | 109                    | 35   | ---   | ---                | 5.0          | 52.4        | 38.4    | 23.7        |
| <b>Rubisco Seeds LLC</b>          |                   |              |      |       |                        |      |       |                    |              |             |         |             |
| Plurax CL                         | H                 | <b>1303</b>  | ---  | ---   | 108                    | 53   | ---   | ---                | 4.8          | 52.6        | 38.4    | 23.6        |
| <b>Star Specialty Seeds, Inc.</b> |                   |              |      |       |                        |      |       |                    |              |             |         |             |
| Star 915W                         | OP                | <b>1568</b>  | ---  | ---   | 130                    | 45   | ---   | ---                | 5.2          | 51.3        | 36.5    | <b>25.9</b> |
| Star 930W                         | OP                | 1076         | ---  | ---   | 89                     | 60   | ---   | ---                | 4.9          | 52.3        | 37.9    | 24.2        |
| <b>Mean</b>                       |                   | 1266         | ---  | ---   | ---                    | 46   | ---   | ---                | 5.0          | 52.2        | 37.6    | 24.3        |
| <b>CV</b>                         |                   | 13           | ---  | ---   | ---                    | 50   | ---   | ---                | 3.8          | 0.8         | 1.8     | 2.4         |
| <b>LSD (0.05)</b>                 |                   | 286          | ---  | ---   | ---                    | NS   | ---   | ---                | NS           | 0.7         | NS      | 1.3         |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

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Alburgh, Vermont

Heather Darby and Rory Malone  
University of Vermont

Planted: 8/31/2018  
Harvested: 7/30/2019  
Herbicides: None  
Insecticides: None  
Irrigation: None  
Previous crop: Spring barley  
Soil test: NA  
Fertilizer: 66-0-0 lb N-P-K fertilizer in spring  
Soil type: Benson rocky silt loam  
Elevation: 124 ft Latitude: 45° 0'N  
Comments: A cold spring resulted in a slow green up, but the plots overwintered well and yields were excellent.

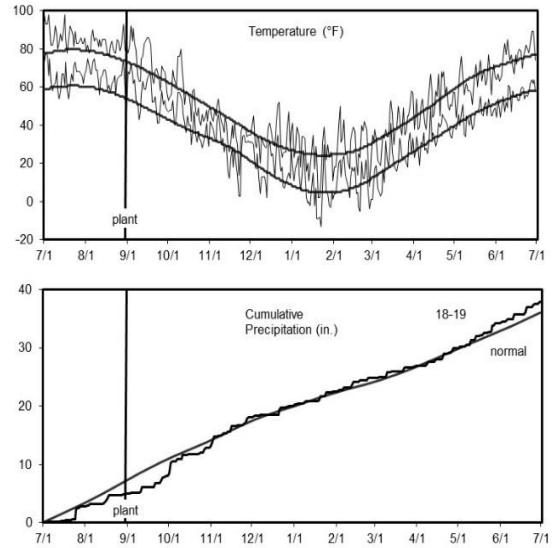


Table 42. Results for the 2019 National Winter Canola Variety Trial, open-pollinated cultivars, at Alburgh, VT

| Name                           | Type <sup>1</sup> | Yield (lb/a) <sup>2</sup> |             |       | Yield (% of test avg.) |      |      | Winter survival 50% bloom |       |     | Lodging (%) | Shatter (%) | Oil (%) | Protein (%) |
|--------------------------------|-------------------|---------------------------|-------------|-------|------------------------|------|------|---------------------------|-------|-----|-------------|-------------|---------|-------------|
|                                |                   | 2019                      | 2018        | 2-yr. | 2019                   | 2019 | 2018 | 2-yr.                     | (DOY) | (%) |             |             |         |             |
| <b>Bayer CropScience</b>       |                   |                           |             |       |                        |      |      |                           |       |     |             |             |         |             |
| CWH189D                        | H                 | 2559                      | <b>1792</b> | 2176  | 111                    | 68   | 77   | 73                        | 141   | 41  | 3.3         | 39.2        | 23.3    |             |
| CWH190D                        | H                 | 2005                      | <b>1634</b> | 1819  | 87                     | 91   | 68   | 80                        | 140   | 11  | 2.7         | 41.1        | 24.6    |             |
| CWH249D                        | H                 | 2494                      | ---         | ---   | 109                    | 82   | ---  | ---                       | 141   | 4   | 2.0         | 42.0        | 23.1    |             |
| CWH317D                        | H                 | 2003                      | ---         | ---   | 87                     | 70   | ---  | ---                       | 143   | 16  | 0.6         | 40.2        | 23.1    |             |
| <b>Kansas State University</b> |                   |                           |             |       |                        |      |      |                           |       |     |             |             |         |             |
| Riley                          | OP                | 2230                      | <b>1581</b> | 1906  | 97                     | 95   | 52   | 73                        | 143   | 18  | 3.0         | 41.5        | 23.4    |             |
| Surefire                       | OP                | 1899                      | <b>1580</b> | 1740  | 83                     | 89   | 60   | 75                        | 142   | 26  | 9.0         | 41.1        | 22.9    |             |
| <b>KWS-MOMONT</b>              |                   |                           |             |       |                        |      |      |                           |       |     |             |             |         |             |
| HAMOUR                         | H                 | 2038                      | 1140        | 1589  | 89                     | 89   | 53   | 71                        | 141   | 18  | 4.7         | 43.8        | 21.7    |             |
| QUARTZ                         | OP                | 2589                      | <b>1905</b> | 2247  | 113                    | 88   | 82   | 85                        | 141   | 7   | 4.0         | 41.4        | 21.5    |             |
| <b>Limagrain Cereals</b>       |                   |                           |             |       |                        |      |      |                           |       |     |             |             |         |             |
| Advocat                        | H                 | 1982                      | ---         | ---   | 86                     | 93   | ---  | ---                       | 142   | 15  | 3.0         | 39.3        | 24.4    |             |
| Architect                      | H                 | 2581                      | ---         | ---   | 112                    | 78   | ---  | ---                       | 141   | 22  | 2.7         | 39.6        | 24.7    |             |
| <b>Ohlde Seed Farms</b>        |                   |                           |             |       |                        |      |      |                           |       |     |             |             |         |             |
| Torrington                     | OP                | 1959                      | ---         | ---   | 85                     | 78   | ---  | ---                       | 141   | 26  | 2.0         | 41.1        | 24.3    |             |
| <b>Rubisco Seeds LLC</b>       |                   |                           |             |       |                        |      |      |                           |       |     |             |             |         |             |
| Phoenix CL                     | H                 | 2360                      | 556         | 1458  | 103                    | 68   | 23   | 46                        | 140   | 23  | 10.2        | 40.9        | 23.7    |             |
| Plurax CL                      | H                 | 1603                      | 880         | 1242  | 70                     | 87   | 48   | 68                        | 144   | 19  | 5.7         | 39.1        | 24.6    |             |
| Popular                        | H                 | 2748                      | 1111        | 1930  | 120                    | 91   | 52   | 71                        | 140   | 5   | 3.2         | 40.4        | 24.1    |             |
| <b>Mean</b>                    |                   | 2207                      | 1191        | ---   | ---                    | 84   | 51   | ---                       | 141   | 18  | 3.9         | 40.8        | 23.5    |             |
| <b>CV</b>                      |                   | 34                        | 33          | ---   | ---                    | 16   | 31   | ---                       | 1     | 128 | 83.7        | 3.4         | 4.0     |             |
| <b>LSD (0.05)</b>              |                   | NS                        | 660         | ---   | ---                    | NS   | 26   | ---                       | NS    | NS  | NS          | NS          | NS      |             |

**Bold:** Superior LSD group. Unless two entries differ by more than the LSD, little confidence can be placed in one being superior to the other.

<sup>1</sup>Type: H=hybrid. OP=open pollinated.

<sup>2</sup>Use yield data with caution. A CV greater than 20 indicates higher experimental error. Make variety selection decisions based on more than one year's data.

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**Table 43. Results for the 2019 Blackleg (*Leptosphaeria maculans*) Trial, at Stillwater, OK**

**National Winter Canola Variety Trial**

J.P. Damicone, D.L. Teeter, C. Harris, and J.J. Lofton, Oklahoma State University

M.J. Stamm, Kansas State University

| <b>Entry</b>                      | <b>Yield<sup>1</sup><br/>(lb/a)</b> | <b>Incidence<sup>2</sup><br/>(%)</b> | <b>Incidence (≥3)<sup>3</sup><br/>(%)</b> | <b>Severity<sup>4</sup><br/>(1-5)</b> |
|-----------------------------------|-------------------------------------|--------------------------------------|---|---------------------------------------|
| <b>Checks</b>                     |                                     |                                      |   |                                       |
| Bristol                           | 1012 a                              | 98.1 ab                              | 75.6 abc                                  | 3.66 abc                              |
| Eurol                             | 2124 a                              | 98.1 ab                              | 95.6 a                                    | 3.81 ab                               |
| <b>Bayer CropScience</b>          |                                     |                                      |   |                                       |
| CWH189D                           | 1454 a                              | 70.0 b-f                             | 20.0 fgh                                  | 2.03 h-l                              |
| CWH190D                           | 1548 a                              | 93.1 abc                             | 50.6 b-e                                  | 2.81 d-h                              |
| CWH249D                           | 1960 a                              | 50.0 ef                              | 20.0 fgh                                  | 1.93 i-l                              |
| CWH317D                           | 1389 a                              | 48.1 efg                             | 15.6 gh                                   | 1.81 jkl                              |
| <b>CROPLAN by WinField</b>        |                                     |                                      |   |                                       |
| CP115WRR                          | 1162 a                              | 93.3 ab                              | 76.7 ab                                   | 3.37 a-d                              |
| CP225WRR                          | 2513 a                              | 98.1 ab                              | 75.6 abc                                  | 3.31 a-e                              |
| CP320WRR                          | 1357 a                              | 98.1 ab                              | 80.6 ab                                   | 3.31 a-e                              |
| <b>Kansas State University</b>    |                                     |                                      |   |                                       |
| KS4670                            | 1470 a                              | 90.0 abc                             | 66.6 a-d                                  | 3.17 b-e                              |
| KS4719                            | 1885 a                              | 98.1 ab                              | 85.6 a                                    | 3.56 a-d                              |
| KSR4723                           | 1253 a                              | 100.0 aw                             | 86.7 a                                    | 4.00 a                                |
| KSR4767                           | 1789 a                              | 100.0 a                              | 76.7 ab                                   | 2.97 c-g                              |
| Riley                             | 2877 a                              | 83.1 a-d                             | 40.6 d-g                                  | 2.56 e-j                              |
| Sumner                            | 2034 a                              | 100.0 a                              | 75.6 abc                                  | 3.06 b-f                              |
| Surefire                          | 1350 a                              | 96.7 ab                              | 80.0 ab                                   | 3.50 a-d                              |
| Wichita                           | 1287 a                              | 93.3 ab                              | 76.7 ab                                   | 3.27 b-e                              |
| <b>Limagrain Cereals</b>          |                                     |                                      |   |                                       |
| Advocat                           | 1963 a                              | 43.1 fg                              | 5.6 h                                     | 1.61 kl                               |
| Architect                         | 1638 a                              | 98.1 ab                              | 85.6 a                                    | 3.41 a-d                              |
| <b>KWS-MOMONT</b>                 |                                     |                                      |   |                                       |
| HAMOUR                            | 1834 a                              | 78.1 a-e                             | 10.6 gh                                   | 2.01 h-l                              |
| MH 14ES125                        | 1016 a                              | 90.0 abc                             | 26.7 e-h                                  | 2.37 f-k                              |
| MH 15AY085                        | 2641 a                              | 63.1 c-f                             | 10.6 gh                                   | 1.86 i-l                              |
| MH 15HT227                        | 1676 a                              | 23.3 g                               | 3.3 h                                     | 1.37 l                                |
| MH 15HT229                        | 2286 a                              | 46.7 fg                              | 16.7 gh                                   | 1.83 jkl                              |
| QUARTZ                            | 2188 a                              | 60.0 def                             | 6.7 h                                     | 1.67 kl                               |
| <b>Ohlde Seed Farms</b>           |                                     |                                      |   |                                       |
| Torrington                        | 1107 a                              | 98.1 ab                              | 95.6 a                                    | 3.46 a-d                              |
| <b>Rubisco Seeds LLC</b>          |                                     |                                      |   |                                       |
| Phoenix CL                        | 1404 a                              | 83.3 a-d                             | 36.7 efg                                  | 2.30 f-k                              |
| Plurax CL                         | 2530 a                              | 83.3 a-d                             | 46.7 c-f                                  | 2.60 e-i                              |
| Popular                           | 1906 a                              | 96.7 ab                              | 46.7 c-f                                  | 2.57 e-i                              |
| <b>Star Specialty Seeds, Inc.</b> |                                     |                                      |   |                                       |
| Star 915W                         | 1310 a                              | 98.1 ab                              | 85.6 a                                    | 3.51 a-d                              |
| Star 930W                         | 1881 a                              | 100.0 a                              | 73.3 abc                                  | 3.53 a-d                              |
| <b>P&gt;F</b>                     | 0.56                                | <0.01                                | <0.01                                     | <0.01                                 |
| <b>CV</b>                         | 43                                  | 18.7                                 | 33.9                                      | 15.4                                  |

<sup>1</sup>Values in a column followed by the same letter are not statistically different at P=0.05.

<sup>2</sup>Percentage of plants with blackleg after swathing on 11 June 2019.

<sup>3</sup>Percentage of plants with severe blackleg (severity rating of ≥3) after swathing on 11 June 2019.

<sup>4</sup>Severity of internal stem decay from blackleg on a 1 to 5 scale where 1 = no disease, 2 = >0 to ≤25% stem decay, 3 = >25 to ≤50% stem decay, 4 = >50% to ≤75% stem decay, 5 = >75% to <100% stem decay, 5 = 100% stem decay.

**Table 44. Seed sources for entries in the 2018-2019 National Winter Canola Variety Trial**

| Source   | Type <sup>1</sup> | Trait <sup>2</sup> | Release |                       | Source   | Type <sup>1</sup> | Trait <sup>2</sup> | Release |                       |
|--|-------------------|--------------------|---------|-----------------------|--|-------------------|--------------------|---------|-----------------------|
|  |                   |                    | Date    | Maturity <sup>3</sup> |  |                   |                    | Date    | Maturity <sup>3</sup> |
| <b>Bayer CropScience</b><br>Matthew Clarke (matthew.clarke@bayer.com)                        |                   |                    |         |                       | <b>Limagrain Cereals</b><br>Brent Conrady (brent.conrady@limagrain.com)  |                   |                    |         |                       |
| CWH189D  | H                 | SD, CL             | ---     | M                     | Advocat  | H                 | ---                | ---     | E                     |
| CWH190D  | H                 | SD, CL             | ---     | M                     | Architect  | H                 | ---                | ---     | E                     |
| CWH249D  | H                 | SD, CL             | ---     | M                     | <hr/>  |                   |                    |         |                       |
| CWH317D  | H                 | SD                 | ---     | M                     | <b>Ohlde Seed Farms</b><br>Shane Ohlde (shane@ohldeseed.com)             |                   |                    |         |                       |
| <hr/>  |                   |                    |         |                       | Torrington   | OP                | ---                | 2016    | M                     |
| <b>CROPLAN by WinField</b><br>Mark Torno (Mtorno@landolakes.com)                             |                   |                    |         |                       | <hr/>  |                   |                    |         |                       |
| CP115WRR   | OP                | RR/SURT            | 2008    | E                     | <b>Rubisco Seeds LLC</b><br>Claire Caldbeck (info@rubiscoseeds.com)      |                   |                    |         |                       |
| CP225WRR   | OP                | RR/SURT            | 2010    | M                     | Phoenix CL   | H                 | CL                 | 2018    | M                     |
| CP320WRR   | OP                | RR                 | 2017    | E                     | Plurax CL  | H                 | CL                 | 2018    | E                     |
| <hr/>  |                   |                    |         |                       | Popular  | H                 | ---                | 2016    | E                     |
| <b>Kansas State University Canola Breeding Program</b><br>Michael J. Stamm (mjstamm@ksu.edu) |                   |                    |         |                       | <hr/>  |                   |                    |         |                       |
| KS4670   | OP                | ---                | ---     | M                     | <b>Star Specialty Seeds, Inc.</b><br>Jim Johnson (jimj_star@hotmail.com) |                   |                    |         |                       |
| KS4719   | OP                | ---                | ---     | F                     | Star 915W  | OP                | RR/SURT            | 2014    | M                     |
| KSR4723  | OP                | RR                 | ---     | M                     | Star 930W  | OP                | RR                 | 2013    | ME                    |
| KSR4767  | OP                | RR                 | ---     | M                     | <hr/>  |                   |                    |         |                       |
| Riley  | OP                | ---                | 2010    | M                     |  |                   |                    |         |                       |
| Sumner   | OP                | SU                 | 2003    | E                     |  |                   |                    |         |                       |
| Surefire   | OP                | SU                 | 2017    | MF                    |  |                   |                    |         |                       |
| Wichita  | OP                | ---                | 1999    | M                     | <hr/>  |                   |                    |         |                       |
| <hr/>  |                   |                    |         |                       |  |                   |                    |         |                       |
| <b>KWS-MOMONT</b><br>Thierry Momont (thierry.momont@kws.com)                                 |                   |                    |         |                       |  |                   |                    |         |                       |
| <b>Photosyntech</b><br>Bob Amstrup (bob.amstrup@photosyntech.com)                            |                   |                    |         |                       |  |                   |                    |         |                       |
| HAMOUR   | H                 | ---                | ---     | M                     |  |                   |                    |         |                       |
| MH 14ES125   | H                 | ---                | ---     | M                     |  |                   |                    |         |                       |
| MH 15AY085   | H                 | ---                | ---     | M                     |  |                   |                    |         |                       |
| MH 15HT227   | H                 | ---                | ---     | M                     |  |                   |                    |         |                       |
| MH 15HT229   | H                 | ---                | ---     | M                     |  |                   |                    |         |                       |
| QUARTZ   | OP                | ---                | 2015    | M                     | <hr/>  |                   |                    |         |                       |

<sup>1</sup>OP=open pollinated. H=hybrid.

<sup>2</sup>CL=Clearfield (imidazolinone resistant). RR=Roundup Ready (glyphosate resistant). SD=semi-dwarf hybrid. SU, SURT=sulfonylurea carryover tolerant.

<sup>3</sup>E=Early. ME=Medium early. M=Medium. MF=Medium full. F=Full.



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