WASHINGTON OILSEEDS COMMISSION
Project No.:
Title: Large-Scale Winter and Canola Variety Trials
Personnel: Isaac Madsen, Ph.D. (PI) and Ian C. Burke, PhD. (Co-PI)
Reporting Period: October 2021 - October 2022

Accomplishments:

1. Completed spring canola variety trials including stand counts and pod counts at Davenport and Cloverland.
2. Completed large-scale winter canola trials near Almira and Brewster.
3. Field days were hosted feature these trials in Brewster, Almira, and Cloverland.

Results: Two spring and two winter canola variety trial were harvested in 2022. The spring variety trials were planted near Cloverland, and Davenport WA (Table 1). A third location was planned for near Albion. However, due to constraints in the cooperators schedule this site was never established. Variety was a significant factor at both locations in the winter variety trials. However, there was no difference in the spring canola variety trials at either location. At Cloverland the average yields only varied 130 lbs/a from the top yielding variety (L343 P) to the lowest yielding variety (CP930). At Davenport the top yielding variety (NCC 101 s) only yielded 70 more lbs/a than the lowest yielding variety CP9978TF. In addition to the yield data plant count, stand count, and plant nutrient data has been collected at multiple locations within the large-scale variety trials since 2019. Previous analysis of these data has showed few no relationships between plant counts and pod counts and yield. In some instances, nutrient concentration was a significant predictor of crop yield within the large-scale variety trials.

At both locations in the winter canola variety trials the hybrids (Kicker, Plurax, Mercedes, and PST19085) yielded significantly greater than the open pollinated varieties (Surefire and Claremore). At the Almira location there was further separation in varieties with Kicker performing significantly better than any of the other hybrids and PST19085 performing significantly worse than any of the other hybrids. Additional winter survival data was collected at the Almira location and PST19085 was found to have a significantly higher crown height and lower winter survival than even the open pollinated varieties.

Over the last several years a few trends have remained consistent in the large-scale variety trials. In the winter canola variety trials, the hybrids have consistently outperformed the open pollinated varieties. In the spring canola variety trials, the top varieties have rarely showed a significant difference and the influx of improved genetics into the Pacific Northwest has led to significant differences due to variety becoming increasingly rare. Additional data on plant density and pod count collected from 2019-2022 did not show significant relationship to yield across the region or between years. This indicates that the greatest sources of variation in yield cannot be assessed using a quadrant to count stand density. As with many crops the environmental stressors (cold springs, droughts, and heat at flowering) appear to have the greatest impact on yield across locations and years.

Spring and winter canola yield (lbs/A)							
	Winter Canola			Spring Canola			
	Almira	Brewster		Cloverland		Davenport	

Kicker	3130	a	2200	a	In Vigor L343 P	1580	a	1620	a
Plurax	2970	b	2020	a	In Vigor LR344 PC	1570	a	1620	a
Mercedes	2960	b	2190	a	NCC 101 s	1550	a	1660	a
PST19085	2580	c	2050	a	CP9978TF	1500	a	1550	a
Surefire	2280	d	1570	b	CP930RR	1450	a	1560	a
Claremore	2090	e	1390	b					
LSD	156		425			252		121	

Publications:

Ford, J. and Madsen, I.J. (2022) Winter Survival Observations from Almira Variety Trial. Field Day Abstracts: Highlights of Research Progress (pp. 45). Pullman, WA: Washington State University. https://css.wsu.edu/extension/field-day-abstracts/