

about the field tours based at our large-scale canola variety trials can be viewed on pg. 34. Record canola acreage in Washington (60,000) and the 4-state PNW region (221,000) in 2017 underscores the importance of continued education and outreach, and the WOCS team is up to the task!

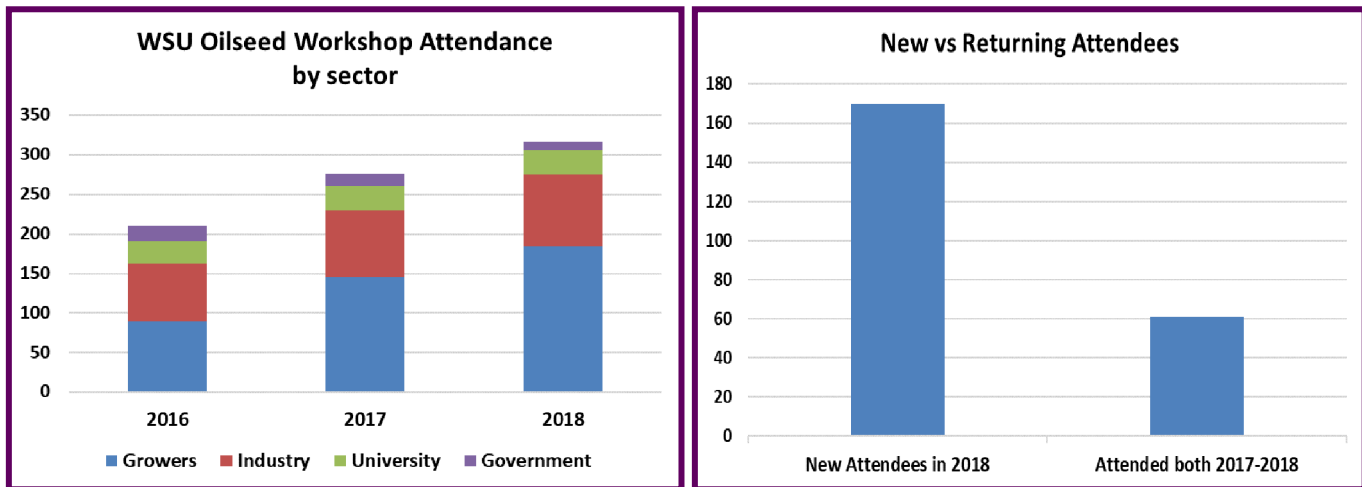


Figure 1. Attendance trends at the last three WSU-WOCS Oilseed Workshops (left), and first-time attendees in 2018 (right).

2017 Pacific Northwest Variety Trial Results

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The acreage of canola (*Brassica napus*, *B. juncea*, and *B. rapa*) in the Pacific Northwest continues to slowly increase as more growers show an interest in the crop. This is due in part to canola offering growers an alternative crop for rotations in an agricultural system that is predominated by small cereal grains. Currently depressed prices for wheat, caused by a worldwide surplus, have also contributed to the increased interest in canola.

To support the grower community, comprehensive yield trials are needed to evaluate new cultivars throughout the varied environments found in the Inland Pacific Northwest. With this objective in mind, researchers at the University of Idaho established the PNW Spring Canola Variety Trial in 1994 and the PNW Winter Canola Variety Trial in the fall of 1995. These trials have successfully attracted cultivar entries from numerous seed companies, with 176 winter varieties from 22 companies and 326 spring varieties from 33 companies submitted for testing over the lifespan of the trials. The trials are currently funded by USDA-NIFA Supplemental and Alternative Crops Competitive Grants Program and by the commercial companies that submitted their cultivars or advanced breeding lines to be tested in the PNW trials.

In 2017, 13 different commercial companies and public breeding programs submitted 52 distinct cultivars or breeding lines for testing, 21 winter types and 31 spring types. Three control varieties were included in each trial, for a total of 24 winter and 34 spring entries. Winter trials were grown at eight sites; Moscow, Genesee, Craigmont, and Grangeville, Idaho; Odessa and LaCrosse, Washington; and Pendleton and Hermiston, Oregon. Spring trials were grown at nine sites; Bonners Ferry, Moscow, Genesee, and Craigmont, Idaho; Davenport, Fairfield, and Dayton, Washington; and Pendleton and Hermiston, Oregon. The sites at Odessa and Hermiston were irrigated; the remaining sites were rainfed.

Winter cultivar yields ranged from 3,562 to 4,427 lbs. per acre when averaged across all sites. Mean seed yield varied widely between sites, with mean yields at individual sites ranging from 2,093 to 5,486 lbs. per acre, with an overall trial mean of 3,910 lbs. per acre. The five commercial canola cultivars with highest yields were 'Mercedes', 'Plurax CL', 'Edimax CL', 'Arsenal', and 'Atenzo.' The next best performing cultivars were 'Durola' rapeseed, 'Amanda' and 'Torrington.' Some winter damage was seen at the LaCrosse site, and Arsenal and Atenzo showed more mortality than the other entries.

Spring cultivar yields ranged from 1,125 to 1,838 lbs. per acre when averaged across the seven dryland sites. (Hermiston was excluded from the means because of not all varieties were grown at that site.) Mean seed yield by site ranged from 800 lbs. per acre to 2,479 lbs. per acre, with an overall mean of 1,512 lbs. per acre. The five cultivars with highest yields were 'HyCLASS 930 RR', 'NCC 101S', 'HyCLASS 955 RR', 'DKL 71-14BL RR', and 'DynaGro 200 CL'. The trials at several sites, including Bonners Ferry, Moscow, and Fairfield, yielded less than expected due to delayed seeding caused by wet weather during the optimum seeding window.

Detailed reports with data tables are available at: <http://www.cals.uidaho.edu/brassica/>.

Ongoing Experiments to Protect Canola Seedlings from Horned Lark Depredation



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Horned lark (*Eremophila alpestris* L.) depredation of pre-emerged and newly-emerged canola seedlings is an increasing concern for both dryland and irrigated farmers in the Inland PNW. Horned lark (Fig. 1) is a native bird species throughout Canada, the United States, and most of Mexico. They are permanent year-round residents of the PNW.

The first report of horned lark damage to canola was at Lind in 2006 where they destroyed a 0.25-acre winter canola experiment. The geographic range of their canola seedling depredation has since extended into Adams, Grant, Douglas, Lincoln, and Spokane Counties. Some canola farmers have recurrent problems with this bird whereas neighboring canola farmers have never been affected. There are two documented cases at separate locations in Adams County where entire 125-acre irrigated circles of both winter and spring canola were destroyed by horned larks.

Many attempts have been made to control horned lark feeding on canola seedlings. These have included loud propane-powered noise cannons, placement of glittery flags and reflecting 'disco balls' in the field, mixing garlic powder with the canola seed before planting, and laser lights. These control strategies have not been effective. The most effective control method tried to date was by an Adams County farmer who hired a falconer from the Tri-Cities to have several of these predator birds fly over his fields for several days when canola seedlings were emerging. This, obviously, is a very expensive control method.

We have a new experiment underway at Lind and Ritzville in 2018 for both spring and winter canola. A nontoxic seed treatment called Avipel™, registered and marketed by Arkion Life Sciences in Delaware, is widely used to effectively control black bird and crow damage to corn and rice seed. The active ingredient in Avipel is anthraquinone, and organic chemical that occurs naturally in dozens of plant species. Avipel imparts a bitter taste to the corn seed. However, horned larks do not eat the canola seed but rather the cotyledon leaves of the emerging seedling. We need the seed treatment to act 'systemically' or, in other words, get inside the canola plant tissue to impart a bitter taste in the coleoptile leaves. Dr. Ballinger feels he may have developed a means to do this and has treated some spring canola seed that we sent him. Replicated field experiments with and without seed treatment will be established both this spring (April) and in late August for winter canola.



Figure 1. The Horned Lark is a ground-dwelling bird commonly found in open areas and in fallow fields throughout North America. Photo by Terry Sohl (with permission).