

Final Report - House Bill 2427

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Oregon State University Contributors

Carol Mallory-Smith, Professor
Pete Berry, PhD Graduate Student
Gabriel Flick, PhD Graduate Student
Department of Crop and Soil Science

Cynthia Ocamb, Associate Professor
Brianna Claassen, MS Graduate Student
Department of Botany and Plant Pathology

Jessica Green, Senior Research Assistant
Department of Horticulture

EXECUTIVE SUMMARY

In 2013, House Bill 2427 provided funding to assess the potential for co-existence between canola and other Brassicaceae seed crops in the Willamette Valley. The data collected provide valid, science-based insight into volunteer, disease, and insect pest differences among Brassicaceae seed crops in the years studied. However, it is important not to extrapolate these data to predict that there would never be an issue or to state positively that unlimited Brassicaceae crop production within the Willamette Valley would not result in production problems. Changes in crop varieties, pest management, cultural practices, or the introduction of new pests and diseases could affect production of Brassicaceae seed crops over time as could dramatic shifts in acreage of any other Brassicaceae crops such as cover crops or fresh market vegetables.

The results of this research provide no reasons, agronomic or biological, that canola production should be prohibited in the Willamette Valley when there are no restrictions on the production of other Brassicaceae crops. Although there were some differences among crops monitored, there were no pest issues unique to canola compared to the other Brassicaceae crops. If canola fields were pinned within the Willamette Valley Specialty Seed Association system to maintain isolation distances with sexually compatible crops then cross-pollination could be avoided.

One of the issues with the designation of specialty seed Brassicaceae crops is that there is no distinction between the crops being grown for the production of seed for forages or the cover crop markets and the vegetable seed market. The forage and cover crop markets may not have as stringent of requirements for genetic purity or pest tolerances (disease and insects) as the vegetable seed markets. Some specialty seed markets require inspection to meet phytosanitary requirements. It is not true that all specialty seed is inspected or tested for pest problems. It is incumbent on the entire agricultural industry to maintain good stewardship practices to protect the status of the Willamette Valley as a premier seed production region.

Findings:

Genetics, isolation and pinning

- Canola should be treated the same as other Brassicaceae crops in relation to establishing isolation distances.
- Isolation is required between canola and other *B. napus* crops to maintain seed purity.
- Isolation is required between canola and *B. rapa* crops to maintain seed purity.
- No isolation is needed between canola and *B. oleracea* crops to maintain seed purity.
- No isolation is needed between canola and radish to maintain seed purity.
- Isolation distances are generally set by consensus within the industry within a state or country and are not the same from place to place.
- In Oregon, pinning Brassicaceae crops with the exception of canola is voluntary.
- In Washington, pinning *Brassica* crops is required by state law.
- In New Zealand and Idaho, pinning is voluntary.
- In Europe, mapping is required and fields are inspected to ensure isolation.
- There are different pinning systems including private, public, and combinations of the two.
- Canola production districts vary by state and country.

- Oregon and Idaho have Protected Districts where canola is prohibited.
- Washington does not prohibit canola production but does require that it be pinned.
- France, New Zealand, and the UK do not prohibit the production of canola or restrict its production to certain areas.

Potential acres for canola production

- *Brassica* seed production in the Willamette Valley ranged from 2,020 to 3,375 estimated acres from 2012 through 2017 excluding canola acreage for 2014 through 2017.
- The number of *Brassica* fields ranged from 156 to 225 in the years 2012 through 2017.
- A map of areas of *Brassica* specialty seed crop densities, which might have led to the recommendation of canola exclusion zones, could not be created without *Brassica* GPS coordinates and species identification or industry validation.
- Based on the number of acres that are planted to wheat and grass seed, an expansion of canola acres is reasonable and feasible.

Monitoring

- Canola volunteer persistence was not different for turnip, daikon radish, or forage rape.
- Volunteer control was effective using available herbicides.
- Volunteer plants associated with monitored fields have not spread along roadsides or to adjacent areas.
- No insect pest was unique to winter canola, nor more prevalent than related fall-seeded crops.
- In general, spring-seeded Brassicaceae crops (daikon radish and spring canola) had greater insect activity than fall-seeded Brassicaceae (winter canola, turnip, and forage rape).
- Canola did not exhibit an overall greater incidence or severity of diseases relative to turnip or forage rape seed crops in western Oregon.
- Daikon radish seed crops had fewer diseases and lower disease levels compared to *Brassica* crops examined during this research.
- Brassicaceae weeds with black leg and light leaf spot were found along Interstate-5 within 20 miles of Washington and California and along roadsides in the Willamette Valley. These weed populations likely lead to wider spread of the diseases.

Recommendations:

Option A-1. Limit acreage of canola grown for oil to a level that would allow expansion of the industry while continuing to provide consideration for the established *Brassica* specialty seed industry.

This is a conservative approach that requires a designation of a specific number of acres for canola production beyond the 500 acres now permitted annually under HB 3382. Based on the number of acres that are planted to wheat and grass seed, an expansion of canola acreage within those acres would be reasonable and feasible. (See section on Potential Acres Available for Canola Production)

To date, all of the canola seed that is being produced in the Willamette Valley is delivered to Willamette Biomass Producers (WBP) to be crushed. Because the facility is certified to produce organic products, it does not accept genetically modified (GM) seed. The facility could produce food quality oil if canola production was at 5,000 acres (Craig Parker, CEO and President,

personal communication). The canola oil produced could be labeled and marketed under the Non-GMO Project Verified.

Willamette Valley canola growers could consider putting in place a *Grower Opportunity Zone*, similar to those in place in California and Idaho for the production of either GM or non-GM alfalfa (www.alfalfa.org/pdf/GOZseed.pdf). The zones were established by growers to produce either GM seed or non-GM seed in a designated area. In California, the growers defined the zone and a >80% approval was needed to establish it as either a GM or non-GM zone. The Willamette Valley Oilseed Producers Association (WVOPA) would need to decide if they wanted to pursue this process. The canola growers would need to vote to form the GM-free zone.

2. Establish a pinning system that is transparent and open to Brassicaceae seed crop and canola producers with equal rights for all.

Options Considered to Accommodate Co-existence Between Brassicaceae Specialty Seed Crops and Canola

Ideally, all Brassicaceae seed crops and canola fields in the Willamette Valley would be pinned in order to ensure that seed purity is maintained. The authority for required pinning would most likely come through legislation or the Oregon Department of Agriculture. A better option is to find a path forward where pinning is voluntary rather than regulatory. Regardless of the option chosen, there should be an advisory group that represents both the specialty seed industry and the oilseed industry to continually update rules and address issues in the pinning system or other concerns as they arise.

Isolation distances required between canola and other Brassicaceae seed crops should be based on genetics of the crops and the potential for cross-pollination, rather than an arbitrary distance. The same rules that govern the isolation of other Brassicaceae seed crops should be applied to canola. (See section on *Brassica* genetics)

A. Options for co-existence of canola and other Brassicaceae crops in the Willamette Valley

Option A-1. Limit acreage of canola grown for oil to a level that would allow expansion of the industry while continuing to provide consideration for the established Brassicaceae specialty seed industry.

This is a conservative approach that requires a designation of a specific number of acres for canola production beyond the 500 acres now permitted annually under HB 3382. Based on the number of acres that are planted to wheat and grass seed, an expansion of canola acreage within those acres would be reasonable and feasible. (See section on Potential Acres Available for Canola Production)

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Option A-2. Use existing Willamette Valley Specialty Seed Association (WVSSA) pinning data to construct accurate maps of Brassicaceae seed crop production acres and field locations, including cover crop seed and vegetable seed crops based on chromosome number. The maps could be used

for spatial density analysis to determine areas of Brassicaceae specialty seed crop concentration and could potentially lead to the designation of a canola exclusion zone if warranted.

Option A-2 requires that the WVSSA provide the pinning data to a third party and assist in validation of the maps and cooperate in the process. Before this option is considered, the data would need to be provided up front and maps constructed so that the results could be evaluated by the Oregon Department of Agriculture for use in its final recommendation.

Option A-3. Do not limit canola acreage in the Willamette Valley as long it is pinned under the same rules as the Brassicaceae specialty seed crops.

Option A-3 provides no extra protection of the specialty seed industry for their stated concerns about international market repercussions from canola production in the Willamette Valley. Nor does it provide any precaution for the potential increase in pests and diseases that could accompany uncontrolled expansion of Brassicaceae crops. However, this option puts canola on the same footing as the Brassicaceae crops such as radish, forage rape, and turnip, which are now being grown on larger acreages to produce seed for the cover crop market.

Note: An option to ban or exclude canola from the Willamette Valley was not considered because it does not lead to an outcome of co-existence between canola and specialty Brassicaceae seed crops.

Recommendation: Option A-1 is the recommended option because it allows for limited expansion of canola production. In addition, the canola growers are encouraged to explore the option of the *Grower Opportunity Zone*.

B. Options for pinning systems.

Option B-1. Use the WVSSA system currently used for pinning specialty seed crops. Changes in pinning rights would be necessary to expand membership so that growers not contracting with a WVSSA company member would have access to pinning and equal rights to the pinning system. If pinning is regulatory rather than voluntary, this system likely would not be feasible.

Option B-2. Contract with the California Crop Improvement Association to provide pinning for Oregon growers. This system is currently used by producers in Idaho as well as California. This option would be cheaper than creating a new pinning system. The most expensive maps created to date cost about \$5,500 to generate (Katy Solden, California Crop Improvement Association, personal communication). Once the isolation maps are established, there is a \$10.00 fee for each field pinned. Rules established by specialty seed and canola growers for pinning in Oregon would need to be implemented for the maps.

Option B-3. Create a new pinning system that would be a joint public and private partnership. The public entity could either be the Oregon Department of Agriculture or Oregon State University Seed Certification working with a company not affiliated with either WVSSA or WVOPA to oversee the

pinning system. Contracting with the California Crop Improvement Association could be one option.

Option B-4. Turn the pinning system over to either of the public entities listed in Option B-3 and leave the decision up to the entity on how to proceed.

Options B-1 and B-2 would be the most cost effective. Option B-1 brings the depth of understanding for the Oregon specialty seed industry while Options B-2 or B-3 would provide greater options for a reset to overcome the contentious atmosphere that has plagued the discussion of co-existence between canola and the specialty seed industry.

A one year transition period might be required to accommodate the priority pins that members now hold so that production would not be unduly disrupted. After the transition period, canola growers would be able to obtain priority rights. Or, it is possible that priority rights would no longer be part of the system. Growers in Washington State start over each year using a lottery system to determine who pins first.

Recommendation: None of the specific options is recommended over another, only that a pinning system is put in place that is transparent and provides equal access and treatment for all growers.