CENTER FOR FOOD SAFETY

March 9, 2023

Chair Golden, Vice Chair Girod, and Committee Members:

Center for Food Safety advocates for a better food system on behalf of our 27,000 members in Oregon, including specialty seed growers in the Willamette Valley. CFS has worked for 25 years to prevent the harms of genetically engineered crops and secure better regulation of these novel organisms to protect farmers, consumers, and our environment and are recognized experts in the field. **We support SB 789.**

Most canola nationally is genetically engineered (GE) to resist herbicides, and there is no requirement not to use genetically engineered canola here in Oregon (except in Jackson County where an overwhelmingly supported county ordinance prevents the growing of any genetically engineered crops to protect traditional farmers and seed growers).[1] The Willamette Valley is unprotected from future planting of GE canola absent amendment to SB 789.

State protection of traditional farmers and independent specialty seed growers is crucial because, unfortunately, the U.S. Department of Agriculture (USDA) currently does not protect these farmers from transgenic contamination. In general, USDA's oversight has been found severely lacking by government reports and courts. GE contamination has cost American farmers literally billions of dollars. Federal oversight has gotten even worse with the recent changes to USDA's oversight of GE plants, which exempts crops engineered through gene-editing from *any* oversight.[2] Once GE plants escape field trials or commercial operations, they can be hard or impossible to eradicate.[3] The examples of GE bentgrass in Eastern Oregon and GE wheat in Oregon and Washington are unfortunate warnings of what can happen when GE crops move off-field to the detriment of other farmers and natural spaces.[4] Most GE plants, including canola, are engineered to resist herbicides

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[1] https://www.centerforfoodsafety.org/press-releases/4181/victory-jackson-county-oregon-ge-free-zone-successfully-protected-from-legal-challenge (CFS helped defend against a challenge to the Jackson County GMO-free ordinance, but statewide preemption prevents other counties from enacting similar laws to protect their farming communities from GE contamination).
[2] https://www.centerforfoodsafety.org/press-releases/6014/newly-finalized-federal-regulations-on-gmos-are-a-free-for-all-for-chemical-corporations; https://www.centerforfoodsafety.org/press-releases/6417/conservationists-and-farmers-sue-over-trump-administration-removal-of-most-genetically-engineered-organism-regulation.
[3] https://www.centerforfoodsafety.org/fact-sheets/3984/us-contamination-episodes-concerning-genetically-engineered-crops.
[4] https://www.hcn.org/issues/50.11/plants-genetically-modified-grass-creeps-across-eastern-oregon; https://www.oregonlive.com/news/erry-2018/07/75efd8154b4980/escaped_gmo_crop_creates_rift.html; https://www.npr.org/sections/thesalt/2013/07/17/202684064/in-oregon-the-gmo-wheat-mystery-

like glyphosate (the active ingredient in Roundup), and so removing feral or volunteer plants requires either mechanical methods or even more potent, toxic pesticides.

With no local control (beyond Jackson County), federal oversight lax or non-existent, and no liability assured after contamination except through expensive lawsuits after-the-fact,[5] seed growers in the Willamette Valley need the legislature to step in and protect what are not only high value crops but also the food that will actually feed people in Oregon and around the world.[6]

When ODA tried to allow canola growing the Valley in 2012 and 2013 (without public comment), we went to court to halt the new rule on behalf of family farmers and seed growers.[7] This legislature acted to limit commercial production of canola amid those legal challenges, and it has worked. As farmers testified at the public hearing on March 6, the current rules have worked to prevent contamination of valuable seed crops by canola.

We must continue that limit to protect the high value vegetable seeds from GE and/or canola contamination and protect those farmers' livelihoods from destruction. Canola is extremely susceptible to cross-pollination with brassica crops and based on our experience with GE crops, it is **not a question of *if*, but *when* contamination will happen**. The value per acre of brassica seed crops far outweighs the value of canola, as the new economic report shows (Highland Economics Report attached). Moreover, using high value farmland that is capable of being a primary supplier of nutritious vegetable seed instead for GE canola (or largescale growing of non-GE canola for animal feed or oil) is just bad food policy. For more information on the impacts of canola on seed growers in the Valley, please see our 2019 comments to ODA, attached.

Canola should be phased out in the Willamette Valley and because the value of brassica seed crops is so much higher than canola, penalties for any canola regulatory violations should be increased. Currently, the civil penalty is not to exceed $25,000. Now that we have the new

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deepens; https://www.nbcnews.com/news/us-news/monsanto-pay-350k-settle-more-wheat-related-lawsuits-n326811.

[5] https://olis.oregonlegislature.gov/liz/2017R1/Measures/Overview/HB2739 (bill would have created cause of action against patent holder when GE organism present on land without permission of owner/occupant).

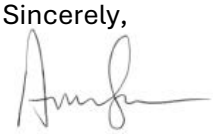
[6] Brassica seed is used to grow produce, which directly feeds people. Canola on the other hand is used for either animal feed or oil. And the key to the future are small, diverse farms, not large industrial farms monocropping or growing feed/fuel crops. https://medium.com/age-of-awareness/how-small-farms-can-sustainably-feed-the-future-45baf2ef6b4e; https://thehill.com/policy/equilibrium-sustainability/3841276-americans-want-farm-subsidies-to-go-to-human-food-not-animal-feed-survey/; https://www.ifad.org/en/web/latest/-/blog/why-small-farms-are-key-to-the-future-of-food-and-how-we-can-support-them.

[7] https://www.centerforfoodsafety.org/press-releases/2127/farmers-and-sustainable-ag-groups-file-lawsuit-challenging-new-canola-rule-that-threatens-100-million-industry; https://www.centerforfoodsafety.org/press-releases/2339/farm-groups-celebrate-as-oregon-senate-passes-hb-2427-to-ban-canola-production-in-the-willamette-valley-until-2019.

economic report, we know that amount would not even cover the loss of *one* acre of organic brassica seed, let alone a lifetime of it.

Enough years have gone by, we know what the Legislature must do to permanently protect seed growers and our amazing brassica seed growing potential in the Willamette Valley. **We ask the committee to pass SB 789 and protect our food and seed growers.**

Sincerely,



Amy van Saun
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CENTER FOR FOOD SAFETY

Potential Economic Impacts of Lifting the Canola Ban in the Willamette Valley on Brassica Seed Producers

February 12, 2023

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1 INTRODUCTION & KEY FINDINGS

Brassica is a large family of plants that includes popular vegetables such as broccoli, cabbage, turnips, Bok choy, cauliflower, Brussels sprouts, arugula, mustard greens, radish and kale. The Willamette Valley of Oregon is one of few places in the world with the ideal conditions to grow seed for these food crops, which has made the region a primary supplier of Brassica seed both domestically and internationally. While total area dedicated to Brassica seed production in the Willamette Valley is relatively small (likely a few thousand acres), the benefits it provides are large: Providing the seed that makes it possible to grow healthy food for countless people across the world.

The Willamette Valley's ideal conditions for Brassica seed are being threatened by another crop from the Brassica family: Canola. Because they share the same plant family, growing canola near other Brassicas can bring problems of cross-pollination, disease, and pests. As a result of these threats and because the Willamette Valley's extraordinary ability to produce Brassica seed, canola production has been restricted in the Valley since at least 2005. Those restrictions are set to end in 2023, which will open the possibility of unrestricted canola production and unprecedented pressures on Brassica seed producers.

This report begins by providing an overview of the value of Brassica seed production and the specific dangers posed by canola, which includes cross-pollination risks, GE traits, and an additional vector for common diseases and pests. While the risk of these issues is common to oilseed and seed production, the effects and incentives for controlling those effects are disproportionate to seed production because of the stringent quality control measures in the seed market, as well as financial profit potential, compared to oilseed production.

The sections below examine the potential economic consequences that increased canola production could have on Brassica seed in the Willamette Valley. We estimate the economic values that Brassica seed production generates in terms of revenues, profits, and jobs, which are all potentially at risk. Specifically, this study finds:

- The total revenue generated by Brassica seed production in the Willamette Valley is estimated to be between $8.2 million and $25.0 million per year, with an average value of $15.2 million.
- Brassica seed production supports roughly 190 jobs directly and indirectly, as well as $9.3 million in direct and indirect labor income.
- We estimate that Brassica seed generates roughly $6.5 million in profits annually.
- Canola is expected to provide approximately $190 per acre in profit to producers in the Willamette Valley, and thus over 37,000 acres of canola would have to be grown in the Willamette Valley in order to replace the profits generated from existing brassica seed production. This would represent a 7,468-percent increase from the current limit in the Willamette Valley, and 2.4 percent of the total Willamette Valley area (including non-agricultural land).
- To replace the jobs and labor income associated with brassica seed production there would need to be roughly 36,000 and 26,000 acres of canola produced in the Willamette Valley, respectively. This is two to three times the highest level of harvested canola acreage for the entire state (2013); and four to six times the average annual harvested canola acreage for the

state over the last ten years of data available (the most recent data available on canola acreage in Oregon is 2009-2018).

- A study from Oregon State University (OSU) in 2008 indicated there would be up to 53,000 acres available for oilseed crops after accounting for buffer areas and crop rotation limits. However, the study indicates it would be 'unrealistic' to expect processing capacity of this scale (5 million gallons annually) in the Willamette Valley, and a more reasonable expectation of 0.5 million gallons annually (5,000 acres of production) for canola is presented (Jaeger & Siegel, 2008).
- The economies of scale in oilseed processing, along with difficulties in transporting canola to a larger processor in the region are additional reasons to expect canola could not replace the profit generated from brassica seed production in the Willamette Valley.

We also discuss the costs of adapting to the problems associated with canola, which in many cases are too high to keep Brassica seed production economical. Specifically, this study finds the following:

- Netting carries an annualized cost of $0.91 per lineal foot, or about $9,958 per acre.[1] This expense would make it economically infeasible to cover anything but a very small and profitable operations. According to our crop budget analysis, netting would be uneconomical for any conventionally grown seed, which we estimate make up over 95 percent of Brassica seed acres in the Willamette Valley.
- Hot water treatments are economically infeasible to all conventionally grown seed (which our crop budget estimate typically fetch between $0.50 and $10 per pound), a large portion of organically grown seed (we estimate to generate an average of $70 per pound before costs). Hot water treatment for an entire crop of seed would require one person dedicating 1.3 to 3.3 forty-hour work weeks.[2] Higher yields could require many times that effort. For small owner/operators, these time requirements are infeasible.
- In our survey, 45 percent of respondents in the Willamette Valley stated that they did not plan to change their practices regarding Brassica seed production in response to the canola ban lifting, while 20 percent indicated that they planned to make some changes to cropping. Half of respondents indicated they had a "wait and see" approach, with many suggesting their actions would depend on how closely canola came to their fields, and some acknowledging that if conditions worsened, they would have to abandon Brassica seed production altogether.

2 Background and Context

This section describes Brassica seed production in the Willamette Valley and its significance in terms of domestic and global markets. This section also discusses the risks canola poses to Brassica seed production, as well as other crops.

[1] These estimates assume total labor costs of $23 per hour, labor requirements of 50 feet per hour, $33 per 150 of wire, $375 per 328 feet of insect netting, and a useful life of three years for materials.

[2] Based on treatment batches ranging from 6 ounces to 1 pound.

2.1 Brassica Seed Production in the Willamette Valley

The climate in the Willamette Valley offers ideal conditions for seed crops: warm, dry summers and mild winters. Only small number of other areas in the world offer similarly conducive conditions, making the Willamette Valley especially valuable as a supplier of seed crops.[3] This climatic advantage has allowed the Willamette Valley to become global leader in the production of grass seed and vegetable seed crops. In 2017, eight counties that host the Willamette Valley produced vegetable seed on over 9,800 acres with associated sales of roughly $19.4 million.[4] The Willamette Valley produces over 400,000 acres of grass seed.[5] In 2017, the sales value of grass seed in Oregon totaled approximately $536 million (Oregon State University, n.d.).[6]

The Willamette Valley produces a wide assortment of Brassica seed crops. These include multiple varieties of cabbage, turnips, Bok choy, broccoli, cabbage, cauliflower, Brussels sprouts, arugula, mustard greens, radish and kale. Previous studies have indicated that Brassica seed production in the Willamette Valley has ranged from 2,020 acres to 3,375 acres (Mallory-Smith, et al., 2017).

While this acreage is relatively small, it is important both to producers and consumers of the seed. One study from Oregon State University estimated the farmgate value of Brassica seed production in the Willamette Valley at approximately $33 million (Karow R. , 2010).[7] Despite the relatively modest production area, the Willamette Valley represents a majority of the world's Brassica seed production, producing over 90 percent of the European cabbage, Brussels sprouts, rutabaga, and turnip seed, and 20 to 30 percent of the world's radish and Chinese cabbage (Karow R. , 2010; Inglis, du Toit, & Miller, 2013). Combined with areas in Washington, Oregon has provided up to 50 percent of the domestic supply of Brassica seed (Inglis, du Toit, & Miller, 2013). Brassica seed is valuable not only because of its limited production environment, but also because of its ability to facilitate the production of large amounts of food. For example, one acre of seed production can produce about 2,000 pounds of cabbage seed, which can be used to plant 10,000 acres of cabbage, yielding 50 million pounds of cabbage for consumption (Inglis, du Toit, & Miller, 2013).

The market demand for brassica seed is aligned with the market for vegetables (for fresh and processing uses) globally, which is expected to grow at a rate of 2.8% annually from 2022 – 2028 (Grand View Research, 2022). In addition, producers in the Willamette Valley are also providing Daikon radish to Asian countries where they are commonly used as sprouts. In the US, varieties of Daikon radish are used in cover crop seed mixtures. Cover cropping, as an agricultural practice, grew by 50% in the United States between 2012 and 2017 (15.4 million in 2017 compared to 10.3 million in 2012) (Wallander,

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[3] These areas include the coastal areas of southwest British Columbia, and parts of Chile, the Mediterranean, and parts of Australia and New Zealand (Inglis, du Toit, & Miller, 2013; The Center for Food Safety, 2013).

[4] Vegetable seed acreage was estimated from the 2017 Census of Agriculture for eight counties that host the Willamette Valley: Benton, Clackamas, Lane, Linn, Marion, Polk, Washington, Yamhill (USDA NASS, 2022). The original value of $16.48 million was adjusted for inflation from 2017 to 2022 dollars using the Implicit Price Deflator for Gross Domestic Product (GDP) (Bureau of Economic Analysis, 2022).

[5] Estimated using 2021 data from USDA's CropScape data (National Agricultural Statistics Service, 2021).

[6] The original value of $455.21 million was adjusted for inflation from 2017 to 2022 dollars using the Implicit Price Deflator for GDP (Bureau of Economic Analysis, 2022).

[7] The original value of $25 million in 2010 dollars was adjusted for inflation to 2022 using the Implicit Price Deflator for GDP (Bureau of Economic Analysis, 2022).

2021). The international demand for brassica seed can be influenced by the strength of the dollar, relative to other currencies. With the wide range of brassica seed markets supplied by producers from the Willamette Valley, it is reasonable to expect future growth in demand within the Valley based on the rising popularity of cover crop practices domestically, as well as sprout, and vegetable seed demand globally. European Union organic regulations have mandated that, beginning in 2035, all organic products in Europe must be grown with organic seed (Bio Eco Actual, 2021). This has the potential to greatly expand global demand for Brassica seed, which the Willamette Valley has the unique ability to supply.

2.2 The Dangers Posed by Canola

Canola poses a number of risks to the production of Brassica seed. The first involves cross-pollination, a process whereby canola pollinates a Brassica crop intended for seed production and thus changes the genetic structure of the seed. Seeds that have been crossed with canola will produce plants that look and taste very different from their non-canola parent, which could make them unsaleable in fresh markets. Additionally, Brassicas are likely to be more bitter and less palatable when outcrossed with canola (Myers, 2022).

Another major problem with cross-pollination comes from the fact that the majority of canola grown for oil is genetically engineered (GE) for herbicide resistance (Inglis, du Toit, & Miller, 2013). Brassica seed that has inherited GE traits cannot be sold in organic markets, and many buyers of Brassica seed (especially countries that ban GE plants such as Japan, Europe, and New Zealand) would likely cease purchases from Willamette Valley growers if the Brassica seed was believed to have cross-pollinated with canola (Curry, 2019; Inglis, du Toit, & Miller, 2013). A buyer can reject seed if more than three per 1,000 (0.3 percent) are outcrossed (Karow R. , 2010). Some seed experts believe that demand for Willamette Valley Brassica seed would fall by roughly 90 percent if canola were widely grown in the Valley (Smith, 2022).

Canola comes in two varieties, *Brassica rapa* and *Brassica napus*, and depending which variety of canola is grown, some varieties of Brassica seed will be in more danger of cross-pollination than others. *Napus* is the variety that is commonly grown for oil in the U.S. and Canada and can cross-pollinate with other Brassica varieties in the *B. napus* family, which include rutabaga and Russian kale (also called Siberian or winter kale) (Myers, 2022). These species would be at greatest risk of cross-pollination if canola *napus* was widely grown. Canola *napus* would also pose a risk to species in a related family, *Brassica oleracea*, but less so than those in *B. napus* (Myers, 2022). These include cabbage, Brussels sprouts, broccoli, and cauliflower. If canola *rapa* was more widely grown, other Brassicas in the *B. rapa* family (bok choy, mizuna, mustard, and turnips) would be at the greatest risk of cross-pollination.

Other major risks posed by canola include diseases and pests. Because canola is a Brassica, and because diseases and pests tend to target genetically similar plants, canola can act as a vector for spreading disease and pests to other Brassica species. Cabbage maggot (Brassica weevil), white rot/mold, light leafspot, white leafspot, and black leg (Xanthomonas), and black rot (Phoma lingam) are a few of the pests and diseases that threaten Brassicas, and that can spread through canola (Karow R. , 2010; Inglis, du Toit, & Miller, 2013). Some of these are already present in the Willamette Valley, including white rot, white mold, black leg, black rot, and Brassica weevil (Karow R. , 2010; Kleeger, 2022; Myers, 2022; Billing, 2022). Any increase in canola is likely to further spread these diseases and pests.

The consequences of an infestation can be devastating. Some diseases, such as black leg, not only destroy the current crop but take years to rid from the soil (Myers, 2022). Testing positive for the disease can mean the entire crop of seeds is unsaleable, meaning the grower incurs all the costs of production but makes no money (Kleeger, 2022; Pence, 2022). Removing black leg from a crop of organic seed requires laborious hot water treatments, which could harm the seeds' viability (Myers, 2022; Kleeger, 2022). These treatments are not always effective, but even if they are, expensive tests are needed to verify the disease has been removed (Kleeger, 2022; Myers, 2022). The economic implications are further discussed in Section 3.3. These issues are already causing some buyers to look outside the Willamette Valley for their Brassica seed production, a trend that canola could exacerbate (Kleeger, 2022).

Concerns around cross-pollination, disease, and pests exist not only for intentionally produced canola, but feral canola, as well. Canola can easily spread from fields or roadways (during transport) into the edges of fields and roadsides where it can proliferate. In some ways, this canola poses a greater concern than cultivated canola because it is not tracked in crop pinning systems, is not monitored for diseases and pests, and is left to further propagate and spread to other areas unchecked.

There is strong concern among Brassica seed growers that canola cultivation lacks the economic incentives to contain pests and diseases, which will further endanger Brassica seed growers if canola production expands in the Willamette Valley. Because canola is a commodity crop that generates comparatively low gross revenues (estimated at $767/acre compared to over $10,000/acre for some Brassica seed), spending time and money on controlling pests and diseases reduces canola's already modest profit margins, which we estimate at roughly $190/acre. In some cases, canola is only used as green manure (incorporated into the soil while foliage is immature), which leaves even less direct economic incentive to control maladies. These same economic dynamics leave little incentive to control feral canola. Additionally, if disease infects a portion of a canola field, the crop can still be harvested and pressed into oil, leaving little incentive to combat the problem. Because Brassica seed is often grown on small plots of one acre or less, an infestation of pests or disease can be catastrophic to the entire crop. In this way, the difference in the economic incentives leaves canola growers with limited interest in controlling pests and diseases and Brassica seed producers with great concern.

The dangers of canola are summarized well by Takashi Ishizaki, owner of the Tohoku Seed Company headquartered in Utsunomiya, Japan. Takashi testified to the Oregon State Legislature in 2013 on the importance of protecting the Willamette Valley's Brassica seed production from canola. He highlighted the fact that his company (which was one of the top three vegetable seed companies in Japan at the time of his testimony) had relied on Brassica seed from the Willamette Valley for about 30 years and comprised 40 percent of its sales. The reliance was not unique to Takashi's company; all their competitors and all major seed companies worldwide had seed production in the Valley (Takashi, 2013). Takashi emphasized that canola production in the Willamette Valley was so threatening to his company's Brassica seed supply, that if canola were allowed to grow unrestricted, his company and others would immediately start looking for other places to produce their seed in order to have a secure seed supply before problems arose. In the absence of limits on canola, he considered the eventual spread of canola-associated problems (outcrossing, contamination, increased pest and disease pressure) to be inevitable, and cited the fact that they had seen these exact devastations occur in Europe, Australia, and southern California (Takashi, 2013).

Brassica seed is not the only crop that canola threatens; clover seed, a widely grown crop in the Willamette Valley, is also at risk. Canola causes contamination when its seeds are harvested with clover seed, hurting the salability of the clover seed (The Center for Food Safety, 2013; Lies, 2012). In 2017, over 27,000 acres were dedicated to clover seed production in the eight counties that host the Willamette Valley (National Agricultural Statistics Service, 2022). The total sales value of this seed has been estimated at over $31 million (The Center for Food Safety, 2013).[8] Increased canola production could put this value at risk.

Oilseed crops are often promoted as a beneficial addition to a crop rotation with grass and cereal grain crops. Studies have shown that oilseed crops can have positive impacts on subsequent crops through reducing pests, weeds, and improving soil conditions[9] which ultimately can improve crop yields for the other crops in the rotation.[10] While canola is the most commonly grown oilseed crop, it is important to note that other oilseeds would have similar rotational benefits (when part of a rotation with grass and cereal grains), but lack the threat of cross pollination. Specifically, these oilseed crops include flax, safflower, sunflower, yellow mustard, and camelina (Chastain, Garbacik, & Wysocki, 2011; Jaeger & Siegel, 2008). Some of these crops would still be vectors for pests and diseases common to Brassica seed crops but the cross-pollination threat to Brassica seed crops does not exist with these oilseed crops. Further, the market for camelina has expanded in recent years, as Sustainable Oils (subsidiary of Global Clean Energy Holdings who has a production contract with Exxon) is seeking production contracts for 1 million acres of the crop in Montana, Oregon, Washington, Idaho, Kansas, and Colorado (Sustainable Oils, 2023). Additionally, camelina that meets established food grade specifications, now has Generally Regarded As Safe (GRAS) status from the US Food & Drug Administration (FDA) (US FDA, 2023).[11]

2.3 The History of Canola Restrictions in the Willamette Valley & Elsewhere

The concerns over the dangers posed by canola to Brassica seed producers led to it being heavily regulated in the Willamette Valley for many years. In the first decade of this century, interest began to grow in producing canola in the Willamette Valley to produce biofuels and serve as a rotational crop for grass seed and wheat. The conflicting interests of canola and Brassica seed growers resulted in the passage of House Bill (HB) 2427 in 2013. This law established the Willamette Valley Protect District, which restricted canola production in the Willamette Valley.

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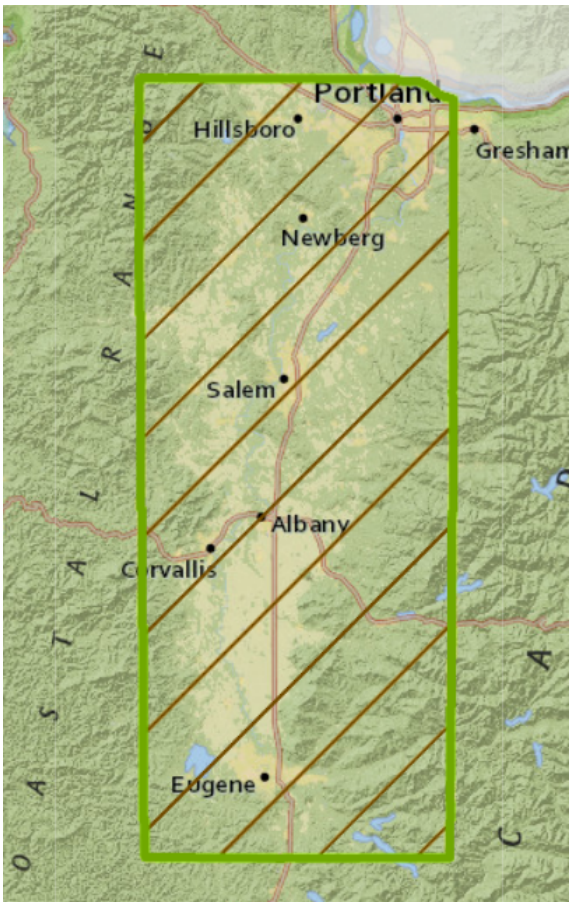
[8] The original value of $24 million in 2010 dollars was adjusted for inflation to 2022 using the Implicit Price Deflator for GDP (Bureau of Economic Analysis, 2022).

[9] The residue from most oilseed crops has a relatively low carbon: nitrogen ratio and will decompose quickly.

[10] Specifically, a rotational benefit might be expected from oilseed crops in fields where take-all, Cephalosporium stripe, eyespot (strawbreaker foot rot), and cereal cyst nematode are important pests (Jaeger & Siegel, 2008).

[11] Some anecdotal accounts suggest that camelina is not economically competitive with canola in the Willamette Valley due to lower yields and prices (Wysocki, 2023; Karow R. , 2023). In this study, we do not assess the economic viability of camelina, but only mention it as an alternative as a rotational crop, without the threat of cross-pollination.

Figure 2-1: Map of the Willamette Valley Protected District



Source: (Oregon Department of Agriculture, n.d.)

In 2015, the Oregon Legislature passed HB 3382, which limited canola production in the Willamette Valley to 500 acres and tasked the Oregon Department of Agriculture (ODA) with determining where canola could be grown "in a manner that is compatible with the growing of other crops" (Mallory-Smith, et al., 2017).[12] Accordingly, growing canola in the Willamette Valley required a permit from ODA. In cooperation with Oregon State University, Willamette Valley Oilseed Producers Association (WVOPA), and the Willamette Valley Specialty Seed Association (WVSSA), the WVSSA's map pinning system was used to track the location of canola and Brassica seed production (Oregon Department of Agriculture, 2018). A three-mile buffer between production areas is used to ensure cross-pollination does not occur. Using the system is voluntary for Brassica seed growers.

In 2019, the ODA proposed a 937,000-acre isolation area in the Willamette Valley where canola production would be prohibited. However, this proposed rule was made moot after SB 885 was passed, which maintained the restrictions on canola, required canola growers to get a license from ODA, and

[12] The Mallory-Smith report investigated the potential for co-existence between canola and Brassica seed production in the Willamette Valley. The report found that canola and Brassicas could be produced together in the same region given proper isolation distances were maintained but did not list an amount of canola acreage that would avoid problems with Brassicas, did not explore the economic implications of potential canola problems, and did not discuss seed purity contamination issues from genetically modified canola.

maintained the 500-acre cap and recommended isolation distances. The bill set a self-imposed expiration date of June 30, 2023, after which all restrictions on canola would be lifted unless further action was taken. The 2022 legislative session ended without any action on the canola restriction, and, as of the date of this report, the ODA has not indicated it will impose any new rules on canola. Therefore, without any further action from the Legislature or ODA, the restrictions on growing canola in the Willamette Valley will be lifted.

Washington state is also a major producer of brassica seed, primarily in the northwest counties of Clark, Clallam, Cowlitz, Island, Jefferson, Lewis, Snohomish and Whatcom; as well as portions of Grant and Adams. The Washington State Department of Agriculture (WSDA) regulations require Brassica seed growers to participate in cooperative events that identify (or 'pin') their crop locations. 'Pinning' the locations of seed crops with cross-pollinated potential started in the 1940's in Washington State. At a minimum, a half-mile distance is required between Brassica plantings of the same species. The distance is greater for different Brassica species. 'Pinning' days occur in March and June at the Extension Center in Mount Vernon as well as the offices of Grant and Adams County Extension (Shaul, 2017). In Washington, restrictions on canola differ between protected districts. In some districts, canola cannot be grown (nor can other non-seed crops). In other districts, canola can be grown but must be pinned and observe the designated isolation distances (Wohleb, 2023).

Separation distances are not only recommended for seed production plots and oilseed production but also within oilseed production between GE and non-GE oilseed production. In the European Union, there is a recommendation for a separation distance between GE and non-GE oilseed rape (canola and rapeseed) crops of 200 meters (Weekes, 2005). It should be noted here that 19 of the 27 member states of the European Union have banned all GE crops (European Commission, 2022). Further, a 400-meter buffer zone has been recommended for coexistence of GE and non-GE rapeseed crops in Australia (GTGC, 2003).

3 Economic Risks of Canola Production

This section explores the economic values at risk from increased production of canola in the Willamette Valley. To assess these economic values, we analyze two potential outcomes from unrestricted canola:

Scenario 1: The combined pressure of cross-pollination, disease, and pests from canola results in the loss of all Brassica seed production in the Willamette Valley and all associated economic benefits. In this scenario, we estimate how much canola production would be needed in order to offset the economic loss of Brassica seed.

Scenario 2: The presence of canola forces Brassica seed growers to implement costly mitigation measures to protect their crops, reducing profits and, in some cases, making production uneconomical.

3.1 Methods and Assumptions

The following subsections outline the methods and assumptions that are common between the two analysis scenarios.

3.1.1 Total Production Area

Estimating the economic activity supported by Brassica seed production requires an estimate of the total area under production. The best source of data for the total acreage of Brassica seed under production in the Willamette Valley is the WVSSA's map pinning system, in which Brassica seed growers indicate the location and species of Brassicas being grown. Because the system is voluntary and self-reported, it would not necessarily be comprehensive or perfectly accurate; however, it stills represent the best data available. Unfortunately, the WVSSA was unwilling to share the pinning data to support this study for reasons they did not provide. A similar situation occurred in the 2017 study by Oregon State University that was legislatively mandated, where the WVSSA refused to provide the same data despite a request for cooperation from Governor of Oregon (Mallory-Smith, et al., 2017).

In the absence of WVSSA pinning data, the total area under Brassica seed production had to be estimated. We used a variety of sources to contribute it this estimate, which is explained in detail below. The results of this research indicate that the total area dedicated producing Brassica seed in the Willamette Valley is likely between 2,000 and 3,400 acres.

One useful source is the U.S. Department of Agriculture's (USDA) CropScape cropland data layer, which maps the location, area, and general species of crop being produced using aerial imagery and recognition algorithms. Because of the method of categorization, CropScape does not distinguish a crop grown for consumption from the same species grown for seed. For that reason, the CropScape data is can only estimate the total acreage dedicated to Brassica production (for both seed and consumption). CropScape data for the years 2011 to 2021 indicate the following relevant species were grown in the Willamette Valley: radishes, turnips, cauliflower, broccoli, cabbage, mustard, canola (rape seed), and greens (which may or may not be Brassica). Considering only the non-canola Brassica species, the total acreage varied from 5,773 in 2019 to 13,702 in 2017, and the annual average was about 8,500 acres (National Agricultural Statistics Service, 2021). The total area dedicated to all vegetable crops averaged about 35,200 acres.

According to the 2017 Census of Agriculture, the eight counties[13] that host the Willamette Valley grew about 9,800 acres of vegetable seed (National Agricultural Statistics Service, 2022). This area would include both Brassica and non-Brassica seed crops, and so the area dedicated to seed would be less than 9,800 acres. Combining the CropScape and Census data indicates that seed crops comprise about 28 percent of all vegetable acres in the Willamette Valley (9,800 out of 35,200 acres). If the proportion of seed-to-consumable acres is similar for Brassica crops as it is for vegetable crops as whole (around 28 percent), this would imply about 2,400 acres are dedicated to Brassica seed (28 percent of 9,800 acres). However, it is uncertain whether that is the case.

Data from the Farm Service Agency (FSA) provides another useful data point. FSA policy requires that producers who participate in certain FSA programs (such as the Agricultural Risk Coverage and Price Loss Coverage programs) report the crops they produce each year, along with associated acreages and intended use (such as fresh market or seed). The data is available by county. This data is useful for understanding Brassica seed production in the Willamette Valley but is limited to those producers who

[13] Benton, Clackamas, Lane, Linn, Marion, Polk, Washington, and Yamhill Counties.

participate in FSA programs. For that reason, the FSA data does not represent all Brassica seed acres under production.

FSA data for the eight-county area[14] indicates that, in the most recent five years (2018 to 2022), the average area planted in Brassicas[15] (and covered by FSA programs) was roughly 1,400 acres (Farm Service Agency, 2022). Of these, acres intended for seed comprised 40 percent of the total, whose other uses included 'Fresh' (44 percent), 'Forage' (2 percent), and 'Green Manure' (1 percent). If we assume the FSA data is representative and 40 percent of acres dedicated to Brassicas are intended for seed, of the 8,500 acres of Brassica production shown in the CropScape data, about 3,400 acres would be dedicated to seed. Once again, it is uncertain how closely this reflects the reality of Brassica seed production. If seed producers enroll their crops into FSA programs at higher rates than fresh market producers, the actual acreage dedicated to Brassica seed production would be lower than 3,400 acres. However, in the absence of better information, this data point contributes to our reasonable range of estimates.

One last source informs our estimates of the total acres of Brassica seed production in the Willamette Valley. The 2017 OSU study had to make similar estimates of the total acreage and did so using similar sources (as well as some limited pinning map data). Their results indicated that Brassica seed production ranged from 2,020 acres to 3,375 acres between 2012 and 2017 (Mallory-Smith, et al., 2017). These figures are quite similar to the 2,400 to 3,400 acres estimated using CropScape, Census, and FSA data. Given this, we find that the reasonable range for Brassica seed production in the Willamette Valley is approximately 2,000 to 3,400 acres.

3.1.2 Organic and Conventional Production

Brassica seed in the Willamette Valley is produced both conventionally and organically, and the economic impacts of these two production methods can be quite different. For that reason, we model the economics of both conventional and organic Brassica seed production and estimate how many acres are dedicated to each method. This section briefly summarizes differences between the two operations and our process for estimating the breakdown in total acreage.

Organic agriculture differs from conventional agriculture in that it does not use manmade chemicals (fertilizers, insecticides, pesticides, or herbicides) and does not use GM organisms. This means that the purchases made by farmers differ between those who grow conventionally versus organically, and therefore their economic impacts differ. Generally speaking, organic Brassica seed operations tend to be smaller than conventional operations; organic Brassica seed operations are often less than one acre (Bowell, 2022; Kleeger, 2022; Hardy, 2022; Koegh, 2022).

As with the total acreage, estimating the acreage dedicated to organic production requires compiling data from multiple sources. In order to be certified as 'USDA organic', growers must be certified by a USDA-accredited certifying agent that inspects the grower's parcel for compliance with USDA organic regulations. Additionally, growers are required to upload information to the USDA's Organic Integrity Database (OID), including their location and the crops they are growing under certification.

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[14] Benton, Clackamas, Lane, Linn, Marion, Polk, Washington, and Yamhill Counties.

[15] Brassica species in the analysis included mustard, broccoli, cabbage, cauliflower, rutabaga, Brussels sprouts, and greens (collards, common kale, arugula, and red Swiss chard).

OID records indicate that there are 118 certified organic growers in the eight-county area. Because the crop data is self-reported and crop names are not rigorously detailed, it is not clear how many of these growers produce Brassica seed. Twenty-three growers reported growing a seed crop (four of listed 'vegetable seeds' specifically) and 25 growers reported growing some variety of Brassica. Six growers definitively reported growing at least one variety of Brassica for seed (USDA Agriculture Marketing Service, 2022).

Oregon Tilth is a nonprofit organization that conducts organic certifications. In addition to the information collected by OID, their database contains the number of acres dedicated to the organic crops. Among the six growers who self-reported producing organic Brassica seed, the Oregon Tilth data indicates that the average production area was 1.5 acres.

The USDA's Organic Survey is a national follow-on surveys to the Census of Agriculture that surveys certified organic growers, with results shown at the state level. In 2019 (the most recent Organic Survey with available data), Oregon farmers grew 9,231 acres of vegetables organically, which comprised about 12 percent of the total vegetable acreage in the state for that year (National Agricultural Statistics Service, 2019; National Agricultural Statistics Service, 2022). The survey distinguished three Brassica crops specifically (broccoli, cabbage, and cauliflower), which were grown on a total of 248 acres. 'Other vegetables' comprised 329 acres, which would imply that organic Brassica production, at most, totaled 577 acres (if all 'Other vegetables' were Brassicas). This would encompass 3 to 6 percent of organic vegetable acres in Oregon. The survey did not distinguish organic seed-growing operations from those dedicated to crops for consumption. The average size of organic Brassica operations was 3 acres.

If we assume for organics, as we did for all vegetables, that about 28 percent of all acres are dedicated to seed, organic Brassica seed acreage would range from roughly 70 to 160 acres (28 percent of 248 to 577 acres). According to one Brassica seed expert, organic production comprises 1 to 5 percent of all Brassica seed production (Tipping, 2022). If this is the case, and Brassica seed production total 2,000 to 3,400 acres, organic seed production would total 20 to 170 acres. Based on these estimates and professional judgment, we find that the likely range for organic Brassica seed production is between 30 and 150 acres.

3.1.3 Brassica Grower Survey

In order to gather information on Brassica seed production from the largest number of growers possible, we conducted a survey that asked about production practices and their response to increased canola production. The survey was created in SurveyMonkey and distributed via email link to Organic Seed Alliance contacts, WVSSA members, the Specialty Seed Growers of Western Oregon, and other agricultural groups in Oregon. In total, 65 people responded to the survey between August 8 and October 31, 2022. Of all respondents, 27 were Brassica seed growers that provided answers to at least one substantive question, and of those, 20 were located in the Willamette Valley. It should be noted that the survey respondents were not randomly sampled, nor were the survey results sufficiently large to draw reliable statistical inference from the results. Still, responses from the growers provide useful perspective and helped inform the crop budget approach and the economic analysis scenarios that are described in the following sections. Meaningful results from the survey are provided where relevant in the remainder of this report.

3.1.4 Crop Budget Approach

To estimate the costs and revenues associated with Brassica seed and canola production, we created three crop budgets: one for conventionally grown Brassica seed, one grown for organically grown Brassica seed, and one for canola. These budgets aim to model all costs associated with production (including materials, labor, equipment depreciation, etc.) and all revenues. These crop budgets are not designed to model a particular farm or operation but are meant to capture the economics of the average or "typical" grower. Because there are many different varieties of Brassica, production practices (and associated costs) and revenues can vary widely. For that reason, we model a range of possible revenues and costs for each production practice. Since canola is a more uniform crop, we only use ranges to represent the yield, price received, and fertilizer. The full budgets are provided in the Appendix. The range of values were derived from a combination of published sources, the survey, and interviews with growers and purchasers.

To derive useful results (i.e., gross revenues and profits) from the range of values in the budgets, we used @Risk statistical software, which simulates the values occurring randomly according to a prescribed distribution. We used a Pert distribution for each cost and revenue item, which is defined by a low, most-likely, and high value (these values are included in the full budgets in the Appendix). For conventionally grown Brassica seed, we estimate the gross revenues range between $1,500 and $12,000 per acre, with a most-likely value of $3,200 per acre. For organically grown Brassica seed, we estimate that gross revenues range from $8,000 to $80,000 per acre, with a most-likely value of $40,000 per acre.

The results of the crop budget analysis indicate that conventionally grown Brassica seed produces average profits of about $1,400 per acre, while organically grown seed produces average profits of $32,000 per acre. While the returns for organic seed seem exceptionally high, there are several reasons to believe they are reasonable. First, the area dedicated to organic Brassica seed are typically very small, often less than one acre (Koegh, 2022; Synder & Varadi, 2022; Hardy, 2022). Secondly, demand for organic Brassica seed is a somewhat niche market with relatively low levels of demand, and seed companies commonly buy less than 20 pounds per year of a single variety (Pence, 2022; Kleeger, 2022). Lastly, results of the survey indicate that operations under 5 acres (those most likely to be organic) reported similarly high revenues, ranging between $13,800 and $120,000 per acre. The average revenue among this group of respondents was $52,300 per acre.

The canola budget was based on a 2020 budget from the University of Idaho, which we updated to 2022 prices using the Producer Price Index from the National Agricultural Statistics Service (Painter, 2020; National Agricultural Statistics Service, 2022). We also reached out to canola growers for feedback on this budget, and received comments that were incorporated into the analysis. We estimated that canola in the Willamette Valley produces between 2,273 and 4,000 pounds per acre (with a most likely value of 3,100) and fetches a likely price of $0.24 per pound.[16] Gross revenues range from of $600 to $940 per

[16] For most-likely price, we used the normalized average price of canola in Oregon from 2011 to 2018 (National Agricultural Statistics Service, 2022). This price is meant to represent the long-term normalized average price for canola in Oregon. The low ($0.19/lb) value was the minimum price observed during this time period. The high value ($0.31/lb) was the current price observed by a Willamette Valley canola grower (Hadley, 2023). We recognize that recent prices for canola are much higher than the average used in this analysis, due largely to increases in the price of wheat (which tends to increase wheat production and decrease oilseed production). However, we believe the major drivers for this price increase will only affect the relatively short-term. For the

acre, with a most likely value of $766 per acre. After netting out production costs, we estimate that canola generates between $50 and $330 per acre in profits, with a most likely value of $190 per acre.

3.2 Scenario 1: Loss of Brassica Seed Production

In this section, we present a possible 'worst-case' scenario: That unfettered spread of canola production in the Willamette Valley results in the loss of all Brassica seed production and all associated economic activity. As the previous sections have outlined, canola production threatens Brassica seed by causing cross-pollination and by spreading diseases and pests. It is therefore feasible that the Willamette Valley could become inhospitable to Brassica seed production if canola production became widespread. In our survey, 20 percent of respondents from the Willamette Valley stated that they would either stop growing Brassica seed when the canola ban was lifted or would move production elsewhere.

To assess the potential economic loss in this scenario, we estimate the total economic activity associated with Brassica seed production in the Willamette Valley. We did this by inputting into @Risk the range of estimates for the total production area (Section 3.1.1), the portion of production that is organic and conventionally grown (Section 3.1.2), and the revenue generated per acre (Section 3.1.4). Using the estimated total revenues, this scenario also examines how much canola would be needed to offset the loss of Brassica seed.

It is worth noting that if Brassica seed production in the Willamette Valley were to cease completely, it is likely that most of the land previously used for Brassica seed would be used to produce some other crop. In this way, some of the economic activity lost from Brassica seed will be regained through the production of other crops. Because it is uncertain what those crops would be and what economic activity they would induce, we do not incorporate this potential economic activity into our analysis.

Given the ranges of total production area, production method, and revenue per acre, we estimate the total revenue generated by Brassica seed production in the Willamette Valley to be between $8.2 million and $25.0 million per year, with an average value of $15.2 million. This estimate seems reasonable given that, in 2017, the total sales of all vegetable seed from Willamette Valley counties was $19.4 million, and some portion of the sales was from non-Brassica vegetable seed.[17] However, the estimate could also be conservative given that at least one previous report cited a total farmgate value of $33 million (Karow R. , 2010).[18] Since that report did not provide an explanation of how their estimate was generated, it is difficult to judge it its validity. According to our analysis, roughly three-quarters of

low-end yield, we adjusted the yield of canola in the North Central Region of Oregon as estimated in an Oregon State University study (2,500 lbs/ac) by the yields for wheat in similar studies: One in the North Central Region of Oregon (110 bu/ac) and one in the Willamette Valley (100 bu/ac) (Seavert, Petrie, & Macnab, 2012; Seavert, Petrie, & Macnab, 2012; Mellbye, Eleveld, Silberstein, Flowers, & Lahmann, 2010). For the high-end yield, we use the reported yield of a canola grower in the Willamette Valley (Hadley, 2023). For the most likely yield, we use an estimate in an OSU study (Jaeger & Siegel, 2008).

[17] Vegetable seed acreage was estimated from the 2017 Census of Agriculture for eight counties that host the Willamette Valley: Benton, Clackamas, Lane, Linn, Marion, Polk, Washington, Yamhill (USDA NASS, 2022). The original value of $16.48 million was adjusted for inflation from 2017 to 2022 dollars using the Implicit Price Deflator for Gross Domestic Product (GDP) (Bureau of Economic Analysis, 2022).

[18] The original value of $25 million in 2010 dollars was adjusted for inflation to 2022 using the Implicit Price Deflator for GDP (Bureau of Economic Analysis, 2022).

the revenue from Brassica seed comes from conventionally grown methods and the remaining quarter from organically grown seed.

Using data from IMPLAN, we estimate the statewide economic impacts of Brassica seed production in the Willamette Valley.[19] At a total production value of $15.2 million per year, Brassica seed production would support roughly 190 jobs directly and indirectly. It would also support $9.2 million in direct and indirect labor income. Direct impacts result from first-hand participation in seed production (i.e., the grower's own work), while indirect impacts result from spending that supports direct activity (e.g., a grower buying fertilizer). Induced impacts, which are also included in the above estimates, are the result of household spending that comes from labor income (e.g., a grower buying Christmas presents using revenues generated by Brassica seed sales).

In addition to the economic activity supported by production, Brassica seed supports economic activity in downstream industries, such as processing and wholesales. The Willamette Valley hosts several seed processers and wholesalers, including Territorial Seed Company, Universal Seed Company, Adaptive Seed, Lakeside Ag-Ventures, Grasslands Oregon, Restoration Seeds, and Wild West Seed. Of the respondents to our survey that answered the question, 73 percent reported selling their seed to at least one company in the Willamette Valley. These growers represented 99.8 percent of acres for those who answered the question.

While the survey is insufficient to provide a representative sample, these results suggest that nearly all Brassica seed grown in the Willamette Valley is processed and wholesaled by companies in the Willamette Valley. This is important because Brassica seed production supports downstream economic activity (jobs and income) in the Willamette Valley, which may not be the case for canola. Previously, all canola produced in the Willamette Valley was processed by Willamette Biomass Processors in a facility in Rickreall, Oregon, about 20 miles west of Salem. The according to the plant owner, the facility could produce food quality oil if canola production was 5,000 acres (Mallory-Smith, et al., 2017). In 2019, the plant was sold to a new owner under the name High Caliber Processing. The new owners claim the plant is "the only large-scale commercial oil seed processor in the state of Oregon with the capacity to store and process over 100,000,000 lbs. of seed annually." However, it is unclear if the plant is still in operation today. Its website is inaccessible and calls to its public phone number are immediately sent to a voicemail that does not identify the owner.

Next, we examine how much canola would be required to replace the economic activity lost from Brassica seed under this scenario. We estimate that Brassica seed generates $6.5 million in profits annually. As shown in the canola crop budget, we estimate the canola generates profits of about $190 per acre. Given this estimate, approximately 37,300 acres of canola would have to be grown in the Willamette Valley in order to replace the profits generated by less than 3,500 acres of Brassica seed; over 10 times the area of existing brassica seed.[20] Not only does canola provide lower profits, but it also generates smaller economic impacts. According to IMPLAN data, even with equivalent amounts of

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[19] The associated jobs and labor income were derived from IMPLAN's total impact multipliers in the "Vegetable and melon farming" sector for the State of Oregon (IMPLAN, 2017). These data suggest that, for every $1 million in direct output, vegetable farming supports about 12.6 jobs and $612,793 in labor income.

[20] In order to keep the @Risk estimates of acreage within a reasonable range, we restricted the profits for both canola and Brassica seed to their 5th and 95th percentile of their distributions.

revenue, oilseed farming (such as canola) generates only 56 percent of the jobs and 76 percent of the labor income that vegetable farming (such as Brassica seed) does (IMPLAN, 2017).[21] But because each acre of canola would produce lower revenues than Brassica seed, more acreage would be required to offset the economic activity. To replace the jobs supported by Brassica seed, over 36,000 acres would be needed (10 times the acreage of brassica seed), and over 26,000 acres would be needed to replace the labor income (7.5 times the acreage of brassica seed).

A study from OSU in 2008 indicated there would be up to 53,000 acres available for oilseed crops after accounting for buffer areas and crop rotation limits (Jaeger & Siegel, 2008).[22] This represents the maximum potential of canola production in the Willamette Valley. The OSU study evaluated a 'large scale' centralized processing facility that would process the canola from 53,000 acres per year (representing output of around 5 million gallons per year) for purposes of comparison, but characterized the potential for a Willamette Valley operation of this scale as "unrealistic" (Jaeger & Siegel, 2008).[23] This is largely due to the fact that the entire state of Oregon only produces a few thousand acres of canola annually, typically in the eastern part of the state.[24] Alternatively, without a local processing facility, there are transportation issues for Willamette-grown canola at this scale. The nearest known processing facility is about 300 miles from the Willamette Valley in Warden, Washington, and the route lacks low-cost rail options. Thus, due to the economies of scale in oilseed processing and difficulties in transporting to existing facilities in the region, it is unlikely that canola production in the Willamette Valley would be able to replace the profit generated from brassica seed production. Specifically, there would need to be between 53 and 67 percent of production potential (53,000 acres) realized from canola to replace the jobs and income supported by brassica seed production, respectively. This would represent two to three times the harvested canola acreage from the highest recorded level (2013) for the entire state; and four to six times the average harvested acreage over the last ten years of data available on acreage of canola harvested for the entire state (National Agricultural Statistics Service, 2022).

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[21] IMPLAN's total impact multipliers in the "Vegetable and melon farming" sector for the State of Oregon are 12.6 for jobs and 612,793 for labor income, compared to 7.0 for jobs and 467,775 for labor income in the oilseed sector (IMPLAN, 2017).

[22] Because this study is about 15 years old, we expect that the area available for canola production has changed since 2008 and has likely decreased due to urban development and production of other crops. This study also identified the cost of biodiesel production from an oilseed processing plant solely dependent on this level of acreage from the Willamette Valley (up to 53,000 acres) would be $6.84 per gallon (2008 dollars; or $9.65 per gallon in 2022 dollars after indexing with the CPI, all urban consumers series). So, significant subsidies and other incentives would be needed to make future biodiesel production sourced solely from canola grown in Willamette Valley competitive with other biodiesels (current price level is $5.60 per gallon) (US Department of Energy, 2022)

[23] The study authors present the costs associated with a small scale (0.5 million gallons per year) pressing operation which would require 5,000 acres of production annually as a more reasonable projection of the scale of operation that would be supported by canola acreage in the Willamette Valley (Jaeger & Siegel, 2008)

[24] NASS data indicates the highest level of canola acres harvested in Oregon over the most recent ten years of available data has been 12,100 acres in 2013; average acreage harvested over the most recent ten years is 6,120 acres and the most recent data is from 2009-2018 (National Agricultural Statistics Service, 2022).

3.3 Scenario 2: Mitigation Costs

Under this scenario, we explore the possibility that increased canola production will force Brassica seed growers to implement costly production practices in order to mitigate the negative impacts of canola (cross-pollination, pests, and disease). These measures may make it possible to continue growing viable Brassica seed, but as this analysis shows, would make it less profitable and in some case uneconomical.

Brassica seed growers have several options to combat cross-pollination, pests, and disease. One method is to install a physical barrier around the cultivated area that prevents any unwanted pests. Row covers consisting of fine-mesh netting are capable of keeping out pests (such as the flea beetle, cabbage aphid, or bees carrying canola pollen). However, these nets would not keep out airborne canola pollen, nor would they prevent transmission of soil or water-borne pathogens such as black leg.

Netting is expensive to purchase and labor intensive to install. We estimate that netting carries an annualized cost of $0.91 per lineal foot, or about $9,958 per acre.[25] This expense would make it economically infeasible to cover anything but a very small and profitable operations. According to our crop budget analysis, netting would be uneconomical for any conventionally grown seed, which we estimate make up over 95 percent of Brassica seed acres in the Willamette Valley. Most organic operations could shoulder the cost of netting, but their profits would be drastically reduced; most by about one-third or more. If all organic Brassica seed acres were forced to cover their fields with netting, we estimate it would result in roughly 5 percent of operations becoming completely unprofitable and, in the remaining operations, result in total profit losses of approximately $300,000 to $1.5 million.

Hot water treatments offer an option for combatting some diseases such as black leg. Soaking the seed after harvest in a bath of hot water can be an effective way of destroying bacterial and fungal diseases (UMass Extension, 2018). Such treatments are already being used to treat Brassica seed in the Willamette Valley (Kleeger, 2022). While this treatment can eradicate disease, it also has the potential to shorten the life of seed and damage its viability (UMass Extension, 2018; Kleeger, 2022). Sometimes more than one treatment is required to rid the seed of disease (Kleeger, 2022).

It takes approximately one hour of labor (including preparations, pre-heating, treating, and drying the seed) to conduct a single treatment (UMass Extension, 2018). Assuming a total cost of labor of $23 per hour and ignoring the investment costs of equipment, this equates to a cost of $23 to $61 per pound.[26] At this rate, hot water treatments are economically infeasible to all conventionally grown seed (which our crop budget estimate typically fetch between $0.50 and $10 per pound), a large portion of organically grown seed (we estimate to generate an average of $70 per pound before costs). While some may argue that owner/operators conduct these treatments unpaid (or for less than $23/hour, as we modeled), this argument ignores the fact that growers must make a living off their production, and any work that does not provide a reasonable return does not make economic sense to do.

Even ignoring the cost of labor, the labor requirements themselves are prohibitive. Assuming the typical organic operation is one-half acre and seed yields are 100 pounds per acre (the low-end estimate for yield), treating the entire crop of seed would require one person dedicating 1.3 to 3.3 forty-hour work

[25] These estimates assume total labor costs of $23 per hour, labor requirements of 50 feet per hour, $33 per 150 of wire, $375 per 328 feet of insect netting, and a useful life of three years for materials.

[26] Based on treatment batches ranging from 6 ounces to 1 pound.

weeks.[27] Higher yields could require many times that effort. For small owner/operators, these time requirements are infeasible.

Unfortunately, conducting a hot water treatment is not the only cost of combatting disease like black leg; the seed must be tested afterwards to ensure the treatment was effective in eradicating the disease. OSU offers tests for black leg and black rot at a cost of $118 per test (Oregon State University, 2022). At this price, testing alone can be cost-prohibitive, and if canola production increases in the Willamette Valley, disease testing may become an essential requirement. For some growers, it has already become necessary (Kleeger, 2022). Even the threat of disease can make testing mandatory, raising costs for growers whose seed is uninfected. If a batch fails the first test, an additional treatment is required, and another test is needed to ensure it worked. The additional costs (in terms of both time and money) could quickly raise the costs of producing Brassica seed above the benefits, leaving growers to abandon the crop.

How growers respond to an increase in canola production will likely depend on the extent of the increase and the degree to which exacerbates pest and disease pressure. In our survey, 45 percent of respondents in the Willamette Valley stated that they did not plan to change their practices regarding Brassica seed production in response to the canola ban lifting, while 20 percent indicated that they planned to make some changes to cropping. Half of respondents indicated they had a "wait and see" approach, with many suggesting their actions would depend on how closely canola came to their fields, and some acknowledging that if conditions worsened, they would have to abandon Brassica seed production altogether.

4 Concluding Thoughts

There is a great deal of uncertainty regarding the extent to which canola production will expand in the Willamette Valley once the ban is lifted, and the degree to which a canola expansion will increase issues of cross-pollination, pests, and disease in other Brassica species. However, what is at risk it is more certain. The Willamette Valley is a unique environment that allows for immense diversity in agricultural production. The Valley's climatic qualities support Brassica seed production in a way that is only found in a few other places on Earth. In contrast, canola can be grown and is grown in many other parts of the region and world as a cheap, commodity crop.

Despite its modest production footprint, Brassica seed provides large economic benefits to growers, seed processors, wholesalers, and the communities in the Willamette Valley. The farmers who buy Brassica seed from the Valley also benefit from the production, as do consumers across the world who enjoy Bok choy, broccoli, kale, Daikon radish and the many other varieties of seed being produced. All these values are put at risk when canola is allowed to grow unchecked in the Willamette Valley. In contrast, the economic impacts, or potential upside, from the future potential of canola in the Willamette Valley are not nearly as beneficial. Additionally, the rotational benefits of canola could be realized by growing other crops, such as camelina, while avoiding some of the risks associated with canola.

[27] Based on treatment batches ranging from 6 ounces to 1 pound.

If the problems become widespread, they cannot be easily reversed by a future canola ban. Cross-pollination threats (especially from feral canola), pests, and disease can persist for years after canola has left a field. If canola does destroy the Willamette Valley's ability to produce Brassica seed, the damage may be permanent, and one of the few areas with the unique ability to grow Brassica seed will lose its rare capability.

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Organically Grown Brassica Seed Costs and Returns per Acre

Item	Quantity			Unit	$/Unit			$/Acre		
	Low	Mid	High		Low	Mid	High	Low	Mid	High
REVENUES										
Brassica seed	100	700	1,600	lb	$18	$70	$200	$8,000	$40,000	$80,000
VARIABLE COSTS										
Seeds/plants	1	1	1	ac	$196	$392	$588	$196	$392	$588
Weed control	1	1	1	ac	$100	$200	$300	$100	$200	$300
Fertilizer	1	1	1	ac	$179	$433	$687	$179	$433	$687
Lime	0.1	0.25	0.5	ton	$44	$65	$87	$4	$16	$43
Soil tests	1	1	1	ac	$4	$9	$13	$4	$9	$13
Soil prep (rip, disc, level)	1	1	1	ac	$75	$150	$225	$75	$150	$225
Irrigation	1	1	1	ac	$181	$195	$210	$181	$195	$210
Machinery operating costs	1	1	1	ac	$0	$73	$151	$0	$73	$151
Custom - hive rental	0	2	4	hives	$33	$65	$98	$0	$130	$390
Seed cleaning	100	700	1600	/lb	$0.01	$0.05	$0.10	$1	$35	$160
Transporting to buyer	1	1	1	ac	$5	$10	$15	$5	$10	$15
Non-machine labor	75	234	351.0	hrs	$16	$23	$30	$1,200	$5,382	$10,530
Machine labor	0.0	5.0	10.0	hrs	$16	$23	$30	$0	$115	$300
Repairs and maintenance	1	1	1	ac	$0	$19	$32	$0	$19	$32
Total variable costs								*$1,945*	*$7,159*	*$13,644*
Revenue above variable costs								*$6,055*	*$32,841*	*$66,356*
FIXED COSTS										
Land cost	1	1	1	ac	$195	$698	$1,200	$195	$698	$1,200
Overhead	1	1	1	ac	$175	$702	$1,228	$175	$702	$1,228
Total land and overhead costs								*$371*	*$1,399*	*$2,428*
Earnings before interest, taxes, depreciation, and amortization								*$5,684*	*$31,441*	*$63,928*
Depreciation	1	1	1	ac	$0	$75	$102	$0	$75	$102
Interest	1	1	1	ac	$47	$185	$300	$47	$185	$300
Taxes, insurance, housing, licenses	1	1	1	ac	$30	$60	$89	$30	$60	$89
Total interest, taxes, depreciation, and amortization costs								*$76*	*$319*	*$491*
Total costs								*$2,393*	*$8,878*	*$16,564*
Net revenues								**$5,607**	**$31,122**	**$63,436**

Conventionally Grown Brassica Seed Costs and Returns per Acre

Item	Quantity			Unit	$/Unit			$/Acre		
	Low	Mid	High		Low	Mid	High	Low	Mid	High
REVENUES										
Brassica seed	1,000	1,750	3,200	lb	$0.50	$2.50	$10.00	$1,500	$3,200	$12,000
VARIABLE COSTS										
Seeds/plants	1	1	1	ac	$294	$392	$490	$294	$392	$490
Chemicals - herbicides	1	1	1	ac	$31	$41	$52	$31	$41	$52
Chemicals - fungicides	0	1	1	ac	$25	$60	$208	$0	$60	$208
Chemicals - insecticides	1	1	1	ac	$36	$48	$144	$36	$48	$144
Chemicals - fertilizer	1	1	1	ac	$134	$179	$325	$134	$179	$325
Chemicals – transplant drench	0	1	1	ac	$67	$89	$111	$0	$89	$111
Lime	0.1	0.25	0.5	ton	$44	$65	$87	$4	$16	$43
Soil tests	1	1	1	ac	$6	$9	$11	$6	$9	$11
Soil prep (rip, disc, level)	1	1	1	ac	$113	$150	$188	$113	$150	$188
Irrigation	1	1	1	ac	$120	$165	$210	$120	$165	$210
Machinery operating costs	1	1	1	ac	$45	$206	$366	$45	$206	$366
Custom - hive rental	0	2	4	hives	$49	$65	$81	$0	$130	$325
Seed cleaning	1,000	1750	3200	/lb	$0.01	$0.05	$0.10	$10	$88	$320
Transporting to buyer	1	1	1	ac	$8	$10	$13	$8	$10	$13
Non-machine labor	5.0	13.7	22.4	hrs	$16	$23	$30	$80	$315	$672
Machine labor	4.1	14.2	24.3	hrs	$16	$23	$30	$65	$326	$728
Repairs and maintenance	1	1	1	ac	$32	$55	$78	$32	$55	$78
Total variable costs								*$978*	*$2,278*	*$4,283*
Revenue above variable costs								*$522*	*$922*	*$7,717*
FIXED COSTS										
Land cost	1	1	1	ac	$120	$160	$200	$120	$160	$200
Overhead	1	1	1	ac	$44	$118	$193	$44	$118	$193
Total land and overhead costs								*$164*	*$278*	*$393*
Earnings before interest, taxes, depreciation, and amortization								*$358*	*$643*	*$7,325*
Depreciation	1	1	1	ac	$177	$212	$246	$177	$212	$246
Interest	1	1	1	ac	$23	$59	$94	$23	$59	$94
Taxes, insurance, housing, licenses	1	1	1	ac	$45	$60	$75	$45	$60	$75
Total interest, taxes, depreciation, and amortization costs								*$245*	*$330*	*$415*
Total costs								*$1,388*	*$2,887*	*$5,090*
Net revenues								**$112**	**$313**	**$6,910**

Canola Budget

Item	Quantity			Unit	$/Unit			$/Acre		
	Low	Mid	High		Low	Mid	High	Low	Mid	High
REVENUES										
Canola	2,273	3,100	4,000		$0.19	$0.24	$0.31	$431.87	$744	$1,240
VARIABLE COSTS										
Seed, canola	4	4	4	lb	$11.65	$11.65	$11.65	$46.58	$46.58	$46.58
Fertilizer, nitrogen	113.6	155	200		$0.85	$0.85	$0.85	$97.16	$132.52	$170.99
Fertilizer, phosphorus	10.1	13.8	17.8	lb	$1.06	$1.06	$1.06	$10.75	$14.66	$18.92
Fertilizer, sulfur	21.5	29.3	37.8	lb	$0.81	$0.81	$0.81	$17.40	$23.73	$30.62
Pesticide, Roundup	58	58	58	oz	$0.16	$0.16	$0.16	$9.17	$9.17	$9.17
Pesticide, ammonium sulfate	150	150	150	oz	$0.001	$0.001	$0.001	$0.13	$0.13	$0.13
Pesticide, surfactant	4.5	4.5	4.5	oz	$0.28	$0.28	$0.28	$1.25	$1.25	$1.25
Pesticide, capture	5	5	5	oz	$2.84	$2.84	$2.84	$14.21	$14.21	$14.21
Fungicide, Tilt	4	4	4	oz	$0.89	$0.89	$0.89	$3.58	$3.58	$3.58
Fuel	4.29	4.29	4.29	gal	$6.05	$6.05	$6.05	$25.95	$25.95	$25.95
Lubricants	1	1	1	ac	$1.99	$1.99	$1.99	$1.99	$1.99	$1.99
Machinery repairs	1	1	1	ac	$13.05	$13.05	$13.05	$13.05	$13.05	$13.05
Machinery labor	0.83	0.83	0.83	hr	$21.94	$21.94	$21.94	$18.21	$18.21	$18.21
Custom, rental sprayer	0	0	0	ac	$1.92	$1.92	$1.92	$0.00	$0.00	$0.00
Custom, aerial spray	2	2	2	ac	$10.17	$10.17	$10.17	$20.35	$20.35	$20.35
Crop insurance	1	1	1	ac	$21.37	$21.37	$21.37	$21.37	$21.37	$21.37
Operating interest	1	1	1	ac	$4.80	$4.80	$4.80	$4.80	$4.80	$4.80
Total variable costs								*$305.98*	*$351.57*	*$401.19*
FIXED COSTS										
Depreciation	1	1	1	ac	$27.94	$27.94	$27.94	$27.94	$27.94	$27.94
Interest	1	1	1	ac	$15.22	$15.22	$15.22	$15.22	$15.22	$15.22
Taxes, insurance, housing, licenses	1	1	1	ac	$7.97	$7.97	$7.97	$7.97	$7.97	$7.97
Land cost	1	1	1	ac	$124.71	$124.71	$124.71	$124.71	$124.71	$124.71
Overhead	1	1	1	ac	$11.25	$11.25	$11.25	$11.25	$11.25	$11.25
Management fee (5% of gross revenue)	1	1	1	ac	$21.59	$37.69	$48.63	$21.59	$37.20	$62.00
Total fixed costs								*$208.67*	*$224.28*	*$249.08*
Total costs								*$514.65*	*$575.85*	*$650.27*
Net revenues								**-$82.78**	**$168.15**	**$589.73**

Comments on the Proposed New Regulations for the Willamette Valley Protected District

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Comments on the Proposed New Regulations for the Willamette Valley Protected District

June 21, 2019

Procedural Background

On April 29, 2019, the Oregon Department of Agriculture (ODA, or "the agency") released a Notice of Proposed Rulemaking regarding new rules allowing canola production in the Willamette Valley. The proposed rule would replace the longstanding rules governing canola production going back to 2005 and 2009, and subsequently revised temporarily by the 2013 legislation[1] and 2015 legislation,[2] both of which will expire on July 1, 2019. Notably, the 2013 statute and implementing rules for that statute set a 500-acre limit on canola production in the Willamette Valley and mandate isolation distances between canola and other Brassica crops to avoid cross-pollination.

The 2013 statute also provided funding for Oregon State University's College of Agricultural Sciences to examine the potential for "co-existence" between canola and other Brassica seed crops in the Willamette Valley.[3] The legislature directed the College to develop recommendations on whether canola production in the Willamette Valley is compatible with production of other crops.[4] In fact, ODA is required to utilize the OSU researchers' findings as the rational basis for the agency's canola rule. As the statute states: "The department may authorize the growing of canola under this section *only [i]n a manner that the college has determined* to be compatible with the growing of other crops" (emphasis added).[5]

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[1] House Bill 2427.
[2] House Bill 3382.
[3] ORS 570.450.
[4] *Id.*
[5] ORS 570.450(1)(4)(b).

The OSU research study recommended "limit[ing] acreage of canola grown for oil to a level that would allow expansion of the industry while continuing to provide consideration to the established Brassicaceae specialty seed industry."[6] More concretely, the researchers suggested "*designat[ing] a specific number of acres* for canola production beyond the 500 acres now permitted annually" (emphasis added).[7] In other words, they called for an acreage cap on canola, and indicated that this cap could be more relaxed than the one established by the 2013 rules, but as the legislature directed, only to the extent and in the manner that their research supported and found viable.

In prior regulations, in place for over a decade, and prior to the OSU study ordered by the legislature, ODA established the protected districts because those are regions where specialty seed and Brassica family vegetable crops are grown. In those regions, as the agency concluded in the 2009 rule, "[p]roduction of rapeseed for oil or seed is incompatible with production of crops of related species grown for seed or vegetables."[8]

Prior to the 2013 legislative compromise and prohibition, ODA issued a temporary rule replacing the 2009 canola control area rule. The temporary rule for the first time slashed the Willamette Valley Protected District in half, opening 1.7 million of the District's 3.7 million acres to canola production. In an effort to protect Oregon's specialty seed growers, Center for Food Safety (CFS), Friends of Family Farmers, and several individual farmers and businesses filed an emergency motion to stay ODA's temporary rule.[9] Acting promptly in response to the risks of opening Willamette Valley to canola production, the Oregon Court of Appeals granted a stay on August 31, 2012.[10] The Court of Appeals held that the petitioners had shown a "very substantial likelihood" of prevailing on their claim that the temporary rule

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[6] *Final Report- House Bill 2427.*

[7] *Id.*

[8] *See* http://library.state.or.us/repository/2009/200910201346122/index.pdf Similarly, Idaho and Washington both have canola control areas. IDAHO ADMIN. CODE § 02.06.13, Rules Relating to Rapeseed Production and Establishment of Rapeseed Districts in the State of Idaho (2012); WASHINGTON ADMIN. CODE §§ 16-326-010 to 16-326-060 (2008).

[9] Pet'rs Mot. for Stay Pending Judicial Review of Agency Rule, (Or. Ct. App. No. A152202) filed Aug. 15, 2012; *see generally* "Briefing Document" (Sept. 7, 2012), available at olis.leg.state.or.us/liz/2013R1/Downloads/CommitteeMeetingDocument/24791

[10] Order Granting Mot. to Stay, (Aug. 31, 2012); see generally "Briefing Document" (Sept. 7, 2012), available at olis.leg.state.or.us/liz/2013R1/Downloads/CommitteeMeetingDocument/24791

was illegal.[11] The Court went on to conclude that the petitioners had demonstrated a "sufficient likelihood of severe and irremediable harm" from any fall canola planting, and thus stayed the temporary rule.[12] Subsequent rulemaking efforts in 2012 and 2013 were mooted by the 5-year legislation now expiring.

Center for Food Safety

CFS is a nonprofit public interest organization dedicated to empowering consumers, helping farmers, and protecting the planet. CFS's core mission is halting the environmental damage and public health harms caused by industrial agriculture. To achieve its goals CFS uses legal actions, policy initiatives, scientific reports, market pressure, public education, and grassroots organizing. With these skills, CFS brings a unique focus to the environmental movement, and nearly 1 million members committed to building a new food future.

Our Pacific Northwest Office in Portland, OR, serves as regional resource for Oregon's food movement, offering legal, scientific, campaign, legislative, and policy expertise for grassroots organizations and individuals in the food movement. CFS leverages its nation-wide networks and resources to amplify the voices and the values of Oregonians committed to safe, healthy, sustainable, and affordable food for all.

CFS's members include specialty seed growers in the Willamette Valley and thousands of other Oregonians.

[11] *Id.* at 1.
[12] *Id.* at 2.

Factual Background

A. High Value of Willamette Valley's Specialty Seed Production

The Willamette Valley, which has an ideal climate for the production of seed crops, is one of only five remaining premier seed growing areas in the world.[13] In recent years, the region has been a major producer of seed crops in the Brassica family.[14] The Brassica family includes the genus *Brassica* with popular vegetable crops such as broccoli, turnip, mustards, rutabaga, and Brussels sprouts.[15] Radish, in the genus *Raphanus*, is also in the Brassica family. The Willamette Valley grows the majority of the world's Brassica family seed, including "nearly all (>90%) of the European cabbage, Brussels sprouts, rutabaga, and turnip seed, and a substantial portion (20% to 30%) of radish, Chinese cabbage, and other oriental *Brassica* vegetable seed."[16] The Willamette Valley's specialty seed industry is substantial and quite profitable, with specialty seed grossing $50 million in 2012 per year, clover seed grossing $30 million and grass seed $300 million, all of which would be negatively affected by canola.[17] It is the economic and agronomic jewel of Oregon agriculture.

B. Canola's Burden on Taxpayers

Unlike the Willamette Valley specialty seed industry, which generates tax revenue and local jobs and does not receive subsidies, oilseed canola production is heavily dependent on government handouts. That is, oilseed canola production receives substantial subsidies.[18] As one study asserts, "The main effect [of subsidies for canola] is to lower the costs for oilseed growers and biodiesel processors—while at the same time raising the costs borne by taxpayers."[19] That study goes on to explain:

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[13] Russ Karow, *Canola in Western Oregon – Information from the Literature and OSU Research Activities and Some Speculations* 2 OSU W. OR. CANOLA RESEARCH REPORT (Jan. 16, 2010), *available at* https://seedalliance.org/wp-content/uploads/2013/04/ODA-Oilseed-Synposis-Report-01.16.10-1.pdf .
[14] *Id.*
[15] *Id.*
[16] *Id.*
[17] Willamette Valley Specialty Seed Association, *Opposition to canola in the Willamette Valley*, January 10, 2013.
[18] William K. Jaeger & Ryan Siegel, *Economics of Willamette Valley Oilseed Crops and Biodiesel Production* 21 (May 2008), *available at* https://catalog.extension.oregonstate.edu/sr1081.
[19] *Id.*

> The full social cost with these programs in place includes the indirect cost of subsidies because they are financed through taxation. Public finance economics recognizes that taxes introduce distortions and thus inefficiencies in the economy; as a result, an additional cost is associated with any government program funded with taxes. The cost is referred to as the "deadweight loss" or "excess burden" of the tax.
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> To finance biofuel subsidies, governments must either raise funds through additional taxation or reduce funding for other programs. In either case, there is a cost of financing the program. Extensive literature on the topic estimates the cost in the United States ranges from 20 to 40 cents per dollar of tax revenue. This means that for every dollar paid in subsidies, the public pays an additional 20 to 40 cents in added distortionary cost associated with the subsidies' financing . . . .[20]

Beyond being generally burdensome on taxpayers, production of canola in the Willamette Valley is especially inefficient, because land in that region has high profitability for growing other crops, such as specialty seeds, and thus there is an "opportunity cost" associated with growing canola, which is worth much less per acre.[21] As economists explain, because much land in Oregon is devoted to higher value crops, canola is "at best, a secondary rotational crop."[22]

C. Risks of Producing Canola in the Willamette Valley

Canola, which is a member of the *Brassica* plant genus, is most commonly cultivated for its oil. Canola poses a number of significant and well-known threats to other species of *Brassica*, whether grown for seeds or as vegetables, because it: (1) easily cross-pollinates with some other *Brassica* species, thereby contaminating desired seed crops; (2) commonly escapes from intended growing areas and is difficult to control as a weed; and (3) creates significant threats for increasing pest and diseases in other crops. For example, as the Willamette Valley Specialty Seed Growers Association has noted, "Risks and damage from these pests have already eliminated or greatly curtailed radish and *Brassica* seed production in France, Germany, and Denmark, each of which allowed rapeseed production for oil to

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[20] *Id.* at 31.
[21] *Id.* at 21.
[22] Gregory M. Perry et al., *Biofuel Production and Consumption in the United States: Some Facts and Answers to Common Questions*, https://agsci.oregonstate.edu/sites/agsci/files/appliedecon/faculty/perry/qadocument5.pdf (last visited June 20, 2019).

infiltrate established seed production areas."[23] Canola poses a similarly significant threat to radish crops in the genus *Raphanus*.

1. Cross-Pollination

Canola presents a widely- and long-acknowledged risk of cross-pollinating with other Brassica family species grown for seed. For example, a study ODA relied on in establishing the 2005 canola control area rule reports that oilseed canola's frequency of gene flow from outcrossing is "high" both with similar crops and wild relatives.[24] Cross-pollination creates an "outcrossed" seed that would contaminate a desired seed crop of *Brassica* or *Raphanus* and render it unsellable. This could be devastating to the unique specialty seed and *Brassica* crops found only in the Willamette Valley. According to one study, "From an agronomic point of view, the transfer of novel genes from one crop to another could have a number of implications, including depletions in the quality of conventional and organic crop seed leading to a change in their performance and marketability."[25] That is, if even one outcrossed seed were found within 10,000 *Brassica* seeds, the entire lot of seeds would be rejected for use as foundation seed.[26] In fact, even commercial seed would be rejected if more than 3 out of 1,000 seeds were outcrossed.[27]

In addition to the risk of genetically-engineered (GE), or even conventional, canola cross-pollinating other Brassica family crops, there is the near certainty of GE canola cross-pollinating related weed species because Oregon already has wild Brassica family weeds. Cross-pollination between GE canola and Brassica family weeds would create wild *Brassica* and *Raphanus* species with herbicide resistance.

There is no real dispute about the potential for canola to outcross with other Brassica family species. A 2010 Oregon State University (OSU) report ("the OSU Report") on the impacts of canola cultivation in the Willamette Valley plainly recognized that "[c]anola and certain specialty seed crops can successfully cross-pollinate and produce viable seed under Willamette Valley environmental conditions."[28] The same study reported that bees can carry canola pollen that cross-

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[23] WILLAMETTE VALLEY SPECIALTY SEED ASS'N, *Position Statement, Opposition to Rapeseed Production for Oil (Canola) in the Willamette Valley* 1 (Sept. 18, 2012)
[24] Katie Eastham & Jeremy Sweet, *Genetically Modified Organisms (GMOs): The Significance of Gene Flow Through Pollen Transfer*, ENVTL. ISSUE REPORT No. 28, 9 (2002), *available at* http://www.eea.europa.eu/publications/environmental_issue_report_2002_28.
[25] *Id.* at 10.
[26] Karow, *supra* note 13, at 3.
[27] *Id.*
[28] *Id.*

pollinates *Brassica* crops that are up to five miles away,[29] highlighting the magnitude of the risk created by even a small level of canola production in the Willamette Valley. Even worse, viable canola seeds can persist in the soil for three[30] to ten[31] years, so risk of contamination does not end when the canola crop is harvested.

2. Adverse Impacts from Canola Weeds

However, canola need not even cross-pollinate Brassica family crops or weeds to cause serious harm to Oregon agriculture. Canola itself is a weedy plant that is prevalent in and around fields and roadways wherever it is grown or transported. A study cited by ODA in the Statement of Need for its 2005 rule reported that "volunteer canola has weedy characteristics such as seed dormancy and at least a 3 year persistence in the soil."[32] As the OSU Report explained:

> We know that canola will persist in the seedbank in Valley soils for at least two years, so each acre of canola that is grown is a potential problem for several years. For example, if 1000 acres of canola were planted in each of three years, in the third year of planting, 6000 acres would need to be monitored for pests or volunteer plants.[33]

Indeed, other studies show that canola seeds can survive for up to ten years in the soil.[34]

Weedy canola occurs in two forms. "Volunteer" canola plants sprout in the following season's crop from abundant seeds left in the field after harvest. "Wild" or "feral" canola grows near fields and along roadways, from seeds that are well documented to escape many miles from fields via spillage from trucks, animals, wind, floods, or human error, and are then very difficult to control.

One aspect of weediness is difficulty of control. Most of the canola planted in the United States is of the Roundup Ready variety, a crop genetically engineered for

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[29] *Id.* at 1.
[30] Gary Martens, *From Cinderella to Cruella: Volunteer Canola*, http://www.umanitoba.ca/faculties/afs/MAC_proceedings/2001/pdf/martens.pdf (last visited June 20, 2019).
[31] Tina D'Hertefeldt, Rikke B. Jørgensen, & Lars B. Pettersson, *Long-Term Persistence of GM Oilseed Rape in the Seedbank*, 4 BIOL. LETT. 314 (2008), *available at* http://frankenfoodfiles.files.wordpress.com/2010/10/gmos-persist-10-years-2008.pdf.
[32] Martens, *supra* note 30.
[33] Karow, *supra* note 13, at 1.
[34] D'Hertefeldt, Jørgensen, & Pettersson, *supra* note 31.

resistance to glyphosate (the active ingredient in Monsanto's Roundup herbicide). Some canola is resistant to other herbicides. Resistance makes canola plants much harder to control, because they are, as intended, immune to glyphosate; and glyphosate is the most important and widely-used herbicide in Oregon and the Willamette Valley.[35]

Examples of this problem abound. It is not surprising that canola resistant to glyphosate and other herbicides is one of the most abundant weeds in western Canada.[36] Feral Roundup Ready canola emanating from a tiny 2007 field trial is emerging as a difficult-to-control new weed in California.[37] In North Dakota, the principal canola growing state in the United States, eighty-six percent of feral canola plants along more than 3,300 miles of roadway contained at least one herbicide-resistance transgene.[38]

Unwanted glyphosate-resistant canola would have numerous adverse impacts. Seed growers, as well as no-till crop farmers who rely on glyphosate, would be forced to use tillage and/or more toxic herbicides, at greater cost, to control it. Feral/volunteer GE canola would also contaminate valuable Brassica seed crops. First, it would act as a "bridge" for cross-pollination. Second, GE canola seeds would directly contaminate seed crops, such as clover[39] and mustard,[40] which can destroy the value of an entire seed lot because many international and domestic buyers have strict prohibitions against GE content. Any canola plants within at least two kilometers (1.24 miles) of a Brassica seed grower's field poses

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[35] Or. Dep't of Agric., *Pesticide Use Reporting System: 2008 Annual Report* (2009), *available at* https://www.oregon.gov/ODA/shared/Documents/Publications/PesticidesPARC/PesticideusereportingsystemAnnualreport2008.pdf.

[36] Rene Van Acker et al., *What's up? Preliminary Results from the 2002 Manitoba Survey of Weeds in Cereal and Oilseed Crops,* 3 PROC. MANITOBA AGRON. CONF. 109 (2002), *available at* http://www.umanitoba.ca/faculties/afs/MAC_proceedings/2002/pdf/vanacker.pdf.

[37] Douglas J. Munier, Kent L. Brittan, & W. Thomas Lanini, *Seed Bank Persistence of Genetically Modified Canola in California*, ENVIRON. SCI. POLLUT. RES. (2011), *available at* http://wric.ucdavis.edu/PDFs/Seed_bank_persistence_of_genetically_modified_canola.pdf (last visited Sept. 27, 2012).

[38] Meredith G. Schafer at al., *Evidence for the Establishment and Persistence of Genetically Modified Canola Populations in the U.S.*, http://eco.confex.com/eco/2010/techprogram/P27199.HTM (Aug. 6, 2010).

[39] Morton Decl. ¶ 15.

[40] Mary MacArthur, *GM Canola Found in Mustard Load*, THE W. PRODUCER (Mar. 6, 2003), *available at* http://www.producer.com/2003/03/gm-canola-found-in-mustard-load/.

contamination risks. And as OSU expert Jim Myers states: "[d]etecting and eliminating volunteers from a two-kilometer radius around a seed field would be onerous and perhaps impossible."[41]

3. Harm to Willamette Valley's Position as a Global Seed Producer

Given the Willamette Valley's preeminent role as a global seed producer for Brassica family and other temperate zone crops, even the potential for seed contamination, whether from cross-pollination or contamination from seeds of escaped canola plants, would seriously impact Oregon growers' hard-earned position.[42] These concerns are especially true for the international market, where buyers are closely following the prospect of canola production in Oregon's specialty seed regions. As the OSU Report explained, "Because of the potential for contamination, some specialty seed customers have threatened to pull all seed contracts, not just *Brassica*, from Western Oregon if canola production is allowed."[43] At a minimum, if canola production entered the Willamette Valley, seed buyers would require Oregon's growers to conduct expensive seed contamination testing on every lot of seeds.[44]

4. Increased Pest and Disease Risks

It is also well documented that canola production would increase the level of high-impact pests and diseases in the Willamette Valley. As explained in the 2010 OSU Report:

> Disease and insect pests can cross over between canola and the *Brassica* seed crops and between these two groups and the *Brassicas* that are grown for root vegetables in western Oregon. Cabbage maggot (*Delia radicum*—a crown and root infesting fly larva) and white mold (*Sclerotinia sclerotiorum*—a stem rotting fungus) are the pests of greatest concern.[45]

The 2010 OSU Report also listed results from field studies of experimental canola plots in Oregon:

> • "White mold was found in all monitored grower canola fields at low to high levels. We do not know how 5–10,000 acres of canola would affect white mold levels, as well as levels of other diseases that also affect vegetable and

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[41] Myers Decl. Ex. B, at 3
[42] *See* Karow, *supra* note 13, at 3.
[43] *Id.*
[44] Morton Decl. ¶ 21.
[45] Karow, *supra* note 13, at 3.

specialty seed crops."[46]

• "Experience with *Brassica* specialty seed and vegetable crops suggests that if canola acreage increases and crops are nearer to each other in time and/or space, cabbage maggot could become a problem."[47]

Similarly, the OSU Report stated that pollen beetles, which constitute a significant threat to *Brassicas*, were found in the experimental Willamette Valley canola fields.[48]

History of the Canola Control Area Rule

Oregon first established canola production rules in the early 1900s to ensure separation between edible-type canola and industrial oil-type canola.[49] In 1989, because of conflicts caused by canola production, the Oregon Legislature empowered ODA to establish "rapeseed control areas."[50] ORS 570.405 governs establishment of these areas, granting the agency broad authority to prohibit any plants that are a "menace" to an agricultural industry. In its entirety, ORS 570.405 reads:

> (1) The State Department of Agriculture may establish, in accordance with the provisions governing the procedure for the declaring of quarantines contained in ORS 561.510 to 561.590, control areas within this state, if after careful investigation it determines that such areas are necessary for the general protection of the horticultural, agricultural or forest industries of the state from diseases, insects, animals or noxious weeds or for the eradication or exclusion from such areas of certain plants or their produce, trees, diseases, animals, insects or noxious weeds that may be a menace to such areas and generally to horticultural, agricultural or forestry industries. Whenever eastern filbert blight is found to exist, the department may declare it a hazard and may establish a control area without having to prove how the disease is transmitted.
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> (2) The power and authority to establish such control areas and for the eradication or exclusion of certain plants or their produce, trees, diseases, insects, animals or noxious weeds existing therein or to be excluded therefrom shall be exercised reasonably and justly

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[46] *Id.* at 1.
[47] *Id.*
[48] *Id.*
[49] ODA Response Ex. 101, at 1, 2005 Rule, *Statement of Need and Fiscal Impact* (June 15, 2005).
[50] ORS 570.450.

> considering the exigencies of the particular situation, the danger to the interests sought to be protected and the immediate and continuing effect upon the property and the owners of the property in the areas established. Such powers shall in no case be exercised unreasonably, unjustly or arbitrarily.
>
> (3) The department in such determination shall define the boundaries of the areas and specify the character and kinds of plants or their produce, trees, diseases, insects, animals or noxious weeds to be eradicated or excluded and the manner and method of such eradication or exclusion. The provisions of ORS 561.510 to 561.590 apply to this section.

ORS 570.450, which specifically permits canola control areas, states:

> The State Department of Agriculture may establish control areas for the production of rapeseed as provided in ORS 570.405 (Department may establish control areas). The department may appoint advisory boards to advise and counsel the department on the boundaries of the control areas, the type of rapeseed species and varieties which may be produced in the various control areas and the enforcement of control area orders.

In 2005, as a result of concerns that canola production in the Willamette Valley would endanger the established specialty seed industry, ODA adopted a rule prohibiting canola production in that region absent a special permit. In its 2005 Statement of Need and Fiscal Impact, the agency explained:

> *Current rules prohibit rapeseed/canola production in half of the state.* These proposed changes would open up these areas to commercial production and should financially benefit growers. The changes in protected districts would prevent production for oil, but promote seed production. Seed producers should benefit; but some potential, oilseed growers would not be able to grow this crop. Current prices for oil rapeseed/canola are too low to be attractive to most farmers in these districts.[51]

In other words, ODA asserted that the 2005 rule loosened the century's more severe restrictions on canola production, benefiting canola producers. However, despite that windfall, canola growers still were not content, instead advocating for industrial-scale production of canola oil in the Willamette Valley protected region.

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[51] ODA Response Ex. 101, at 1, 2005 Rule, *Statement of Need and Fiscal Impact* (June 15, 2005) (emphasis added).

Thus, in 2006, and again from 2007 to 2009, the Legislature granted ODA research funds to study issues surrounding the potential for harm from production of canola in the Willamette Valley.[52] As explained in the Board of Agriculture's February 2009 meeting minutes, "Funding [wa]s provided so that ODA c[ould] obtain the information it need[ed] to make informed decisions about canola production zones in the state."[53] ODA contracted with OSU to do the research work.[54]

In 2009, OSU researchers presented the results of their research, which culminated in a report, to the ODA Canola Advisory Committee. As summarized above, the OSU Report identified a number of potential harms to specialty seed growers if canola production were permitted in the Willamette Valley. The OSU Report admitted that "[t]he research work that was done resulted in as many questions as answers,"[55] concluding that "given the potential risk, precaution suggests not allowing canola production at this time."[56]

In sum, the OSU Report's results were inconclusive, and it not only failed to assuage concerns about the potential harms, but also actually confirmed many of the specialty seed growers' fears. As a result, it was not surprising that the Canola Advisory Committee was unable to reach a consensus about altering the 2005 prohibition on producing canola in the Willamette Valley. Thus, in 2009, ODA reestablished the 2005 rule with only minor changes.

A. 2009 Canola Rule

In 2009, in arriving at its decision to reissue the control area rule, ODA balanced various factors that included: (1) "[t]he unique growing characteristics of the Willamette Valley that make it conducive to specialty seed production"; (2) "[t]he number of fresh vegetable operations, including smaller farm operations whose markets include local buyers, all of which could be negatively impacted by canola pests and diseases"; and (3) the canola advocates' "opportunity to grow canola in many other regions in Oregon."[57] As Dan Hilburn, an ODA Administrator explained at a May 2009 Board of Agriculture meeting, "the Willamette Valley is full of specialty seed growers and the industry footprint is huge. Any type of canola production will produce more pests, disease, and fields can serve as reservoirs for

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[52] Karow, *supra* note 13, at 1.
[53] Feb. 2009 Bd. of Agric. Meeting Minutes at 13.
[54] *Id.*
[55] *Id.*
[56] *Id.* at 2.
[57] *Canola Growing Regulations: Frequently Asked Questions*, ODA (updated Oct. 20, 2009), http://library.state.or.us/repository/2009/200910201346122/index.pdf. Alternative oilseed crops can be grown in the Willamette Valley including camelina, flaxseed, and soybeans.

their proliferation."[58] Thus, according to the 2009 canola control area rule:

> Production of rapeseed for oil or seed is incompatible with production of crops of the same or related species grown for seed or vegetables. Therefore, protected districts are established where rapeseed production for oil or seed is prohibited except under special permit. Production of rapeseed for forage or cover crop in these protected production areas is subject to measures to minimize undesirable cross-pollination, disease and pest buildup, and volunteers [i.e., weeds].[59]

The 2009 rule's Statement of Need and Fiscal Impact further explained that "[c]ross-pollination or contamination of seed crops by unregulated canola would have serious negative economic impacts on the seed and vegetable industries."

The 2009 rule applied to approximately 3.7 million acres in the Willamette Valley Protected District, including in Lane, Linn, Benton, Marion, Polk, Clackamas, Yamhill, Washington, and Multnomah counties, as well as a portion of Columbia County. As noted above, the 2009 rule prohibited canola cultivation without a special permit from ODA and furthermore placed strict controls on any cultivation allowed by special permit.[60]

In explaining the 2009 rule, Hilburn stated: "It looks to us like the specialty seed and vegetable industry and commercial canola production can't be grown in the same area . . . . The (Willamette) Valley has historically been for specialty seed and vegetables, and we're going to keep it that way.'"[61] He explained: "There are not a lot of areas in the world where you can grow specialty seed . . . We have a special situation in Oregon—but there are a lot of places where you can grow canola. For now we're protecting an existing industry rather than develop a new one in canola."[62] Hilburn then proceeded to conclude: "'I am comfortable, and (ODA Director) Katy (Coba) is comfortable that the research supports what we've done."[63]

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[58] May 2009 Bd. of Agric. Meeting Minutes at 7.
[59] OAR 603-052-0880(2) (emphasis added).
[60] *Id.* As a result, very few acres of canola were planted and, to CFS's knowledge, no canola was planted in the Willamette Valley Protected District after 2010.
[61] Mitch Lies, *Canola Study Validates State's Prohibitions*, CAPITAL AG PRESS (Feb. 4, 2010, 11:00 a.m.), http://www.capitalpress.com/oregon/ml-canola-research-020510.
[62] Eric Mortenson, *Canola Good for Bio-Fuels, but Dangerous for Other Crops*, THE OREGONIAN (updated Oct. 23, 2009, 1:18 p.m.), http://www.oregonlive.com/business/index.ssf/2009/08/canola_good_for_biofuels_but_d.html.
[63] Lies, *Canola Study Validates State's Prohibitions*, *supra* note 61.

The 2013 Statute

After the 2012 rule was struck down in Court, and while the new proposed spring 2013 rule was under subsequent legal challenge for similar legal failings, legislation passed in summer 2013 mooted that case and issued a 5 year moratorium on the question, pending further study. The law restricted canola production in the Willamette Valley Protected District to only 500 acres.[64]

In addition, the legislature instructed the College of Agricultural Sciences of Oregon State University to conduct field monitoring and develop recommendations on whether canola growing in this protected district is compatible with other crops.[65] The statute is quite specific about what information the College was required to gather. For example, the research must include a map indicating how isolation distances could be maintained between canola and other crops.[66] These isolation distances safeguard against cross-pollination that could be devastating to specialty seed crops. In addition, any monitoring of fields planted with canola or specialty seed crops must include monitoring for diseases and insects.

The 2013 bill contains an unambiguous legislative intent to ensure that any new canola regulations draw upon the analysis and conclusions of the OSU researchers. The legislature would not otherwise have appropriated funds to the university and stated that the college "shall" make recommendations pertaining to the compatibility of canola and other crops. Further, the bill's specificity about what particular issues the study should assess reflects a need to fill a knowledge gap so that any future regulations are based on sound science.

The 2015 Statute

The 2015 legislation amending the 2013 law similarly highlights the critical role of the OSU study in informing new canola rules.[67] That bill, like the 2013 one, requires the study to make recommendations on the compatibility of canola with other crops. In fact, this bill is even more explicit about the requirement that the OSU research be the basis for ODA's canola rule: "The department may authorize the growing of canola under this section *only [i]n a manner that the college has determined* to be compatible with the growing of other crops" (emphasis added).[68]

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[64] House Bill 2427; ORS 570.450.
[65] *Id.*
[66] ORS 570.450(4)(4)(b).
[67] House Bill 3382.
[68] ORS 570.450(1)(4)(b).

In addition, the statute is express about the need to protect the viability of specialty seed production. It states plainly that the OSU recommendations shall include "means for providing protections adequate to maintain the unique attributes of the specialty seed industry in the state."[69] Further, canola production must have appropriate isolation distances from specialty seed crops, again reflecting concerns about cross-pollination.

Recommendations of 2017 OSU Study

The OSU study laid out three possible alternatives regarding the co-existence of canola and other Brassica crops in the Willamette Valley.[70] The first option—and the recommended option—is to establish a specific acreage limit on canola. It would be "reasonable" and "feasible" to expand the limit beyond the 500 acres currently permitted, but nonetheless a specific acreage limit should be set.[71] According to the study, this option could enable the limited expansion of the canola industry while accounting for the viability of the specialty seed industry.[72]

The second possible option is to use existing pinning data to create maps of specialty seed production areas.[73] These maps would identify areas where specialty seed production is highly concentrated and provide the basis for the designation of a canola exclusion zone if deemed necessary.

The third option was to place no acreage limit on canola production, as long as it is pinned under the same rules as specialty seed crops. What is noteworthy is the study's discussion of the threat this option poses to specialty seed producers. The lack of any acreage limit "provides no extra protection of the specialty seed industry for their stated concerns about international market repercussions from canola production in the Willamette Valley."[74] In addition, unlimited canola production runs the risk of increasing pests and disease.

It should also be noted that the OSU study decided not to weigh the option of an outright prohibition on canola growing in the Willamette Valley, because this would not promote "co-existence" between canola and specialty seeds.[75]

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[69] ORS 570.450(2)(1).
[70] Final Report- House Bill 2427.
[71] *Id.*, pg. 4.
[72] *Id.*
[73] *Id.*, pg. 4-5
[74] *Id.*, pg. 5
[75] *Id.*

Effects of the Proposed Rule

The proposed rule would weaken regulation of the canola control area in a number of ways that significantly and adversely affect specialty seed growers.

First, the proposed rule declines to set any specific acreage cap on canola. Although canola would continue to be excluded from a Protected Zone called an Isolation Area, there would be unlimited canola production in the Willamette Valley Protected District outside the bounds of this Isolation Area. Further, ODA gives no rationale for the arbitrary bounds of the Isolation Area, and many vulnerable specialty crop and seed farmers are outside that area. Absent an acreage cap, canola production could expand significantly beyond the 500 acres currently allowed. For example, in assessing the acreage available for canola, the OSU study noted that canola could be grown on land currently planted to grass seed and wheat. Grass seed is grown on 350,000 to 400,000 acres annually; wheat is grown on over 50,000 acres.[76] Even if canola were expanded onto a fraction of this acreage, canola production would far surpass the current 500-acre limit. In addition, the CEO of Willamette Biomass Producers informed the OSU researchers that his facility "could produce food quality oil if canola production was at 5,000 acres."[77] This potential for a massive jump in canola acreage highlights the danger of the proposed rule's failure to institute an acreage cap.

The proposed rule also declines to require isolation distances between canola and other Brassica crops. This leaves seed growers in a tenuous situation. Seed growers will have to wait until ODA issues canola permits before determining whether their seed fields are viable; if the seed fields are too close to a canola field, they are susceptible to cross-pollination and thus may have to be abandoned. Yet, problematically, ODA never explains on what basis it will grant or deny permits for canola growing. The absence of any clear criteria on which to accept permit applications not only raises the possibility of unrestricted canola production, but leaves seed growers uncertain about whether canola growing is likely to be in too close proximity to their seed fields.

Overall, then, the proposed rule would—without any rational basis—upend the protections that specialty seed growers have long relied on to assure the viability of their industry. In the past ODA, consistent with the legislature's policy directives, has placed necessary restrictions on canola production to safeguard other Brassica growers against pests, disease, and cross-pollination. Those regulations were based on sound scientific evidence warning of the dangers presented by unchecked canola growing. By contrast, the proposed rule significantly relaxes restrictions on canola in a way that is inconsistent with legislature's directives.

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[76] Final Report- House Bill 2427, pg. 28.
[77] *Id.*, pg. 2-3.

Particularly problematic is that the new rule not only lacks any scientific basis, but plainly contravenes the scientific findings presented to ODA.

The Proposed Rule is Unlawful

A. The proposed rule exceeds ODA's statutory authority

An administrative rule is invalid if, among other things, it exceeds the agency's statutory authority. A rule exceeds an agency's authority when the rule "departs from the statutory policy directive."[78] Here, ODA's proposed canola rule departs from the policy directives of the authorizing statutes, rendering the rule invalid.

1) ODA exercised its power unreasonably, unjustly, and arbitrarily in violation of ORS 570.405

ODA has exercised its authority "unreasonably, unjustly, and arbitrarily" because its proposed rule fails to account for the factors that the statute requires it to consider in establishing control areas.[79]

The Department of Agriculture has the authority to establish control areas if it determines that such areas are necessary to exclude plant pests that may be "a menace to the areas and generally to horticultural, agricultural, or forestry industries."[80] The statute lays out the standard by which to evaluate the lawfulness of ODA's exercise of authority. In establishing control areas, ODA is required to exercise its authority "reasonably and justly."[81] Acting "reasonably and justly" is defined by the statute as taking into consideration three factors: "the exigencies of the particular situation, the danger to the interests sought to be protected and the immediate and continuing effect upon the property and the owners of the property in the areas established."[82] The same statute explicitly bars the agency from exercising its power "unreasonably, unjustly, or arbitrarily."[83]

The proposed canola rule disregards the criteria that the legislature directed ODA to take into consideration. First, the rule is not tailored to the "exigencies of the particular situation." The rule neither contains an acreage cap on canola nor

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[78] *Planned Parenthood Ass'n, Inc. v. Dep't of Human Res. of State of Oregon*, 297 Or. 562, 567, 687 P.2d 785, 789 (1984).
[79] ORS 570.405.
[80] *Id.*
[81] *Id.*
[82] *Id.*
[83] *Id.*

sets any isolation distances on its planting.[84] As explained above, pests and diseases from unrestricted canola production pose a serious threat to the region's specialty seed producers. In fact, these concerns were precisely the basis for ODA's 2009 canola rule that established protected districts prohibiting canola production except with a special permit.[85] In other words, the "exigencies of the particular situation" justified restricting canola production for the sake of protecting the viability of specialty seed production.

Yet ODA in its proposed rule has arbitrarily decided to ignore such concerns about the effects on seed producers. ODA has never demonstrated that the "exigencies of the particular situation" in 2009 are no longer relevant today. In turn, the potential adverse impacts on seed producers must be part of ODA's assessment of the "exigencies" of the present situation. To neglect to account for these exigencies—in defiance of the statute's requirement—is nothing short of unreasonable, unjust, and arbitrary.

Second, the rule fails to consider the "danger to the interests sought to be protected."[86] We must discern the "interests sought to be protected" by the establishment of control areas. It is clear from ORS 570.450 that specialty seed producers are precisely the "interests" that the control areas are intended to "protect."[87] The statute directs ODA to make recommendations that specifically include "means for providing protections adequate to maintain the unique attributes of the specialty seed industry in this state."[88]

Thus, the legislature could hardly have been clearer or more express about its insistence that any canola rule protect the specialty seed industry. At the very least, ODA should mitigate any adverse impacts of canola on specialty seed producers, but the agency's proposed rule does not contemplate how it would do so. Further, the same statute requires Oregon State University researchers to make recommendations "regarding *whether*, and under what conditions, canola growing in the Willamette Valley Protected District is *compatible with the growing of other crops*" (emphasis added).[89] This directive must be read in the context of ODA's previous conclusion in the 2009 regulations that canola production is flatly "incompatible" with the production of crops grown for seed or vegetables.[90] In

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[84] Friends of Family Farmers, *Take Action! Willamette Valley Canola Rule Comment Period*, available at http://www.friendsoffamilyfarmers.org/2019/05/take-action-willamette-valley-canola-rule-comment-period/
[85] May 2009 Bd. Of Agric. Meeting Minutes at 7.
[86] ORS 570.405.
[87] ORS 570.450.
[88] ORS 570.450(2)(1).
[89] ORS 570.450(4)(4)(a).
[90] *See* http://library.state.or.us/repository/2009/200910201346122/index.pdf

directing the researchers to determine canola's compatibility with other crops, the legislature plainly intended to protect the interests of seed producers and to see whether or not OSU could divine a way to grow canola safely in the Valley.

As summarized above, the "danger" to seed growers is that their enterprises will be imperiled by pests and disease associated with canola production, as well as cross-pollination and contamination by genetically engineered canola of related organic and traditional crops. The proposed rule neglects to specify an acreage cap and to require isolation distances. In this way, the rule fails to comply with the statutory requirement to take into account the danger to the interests that canola control areas are designed to protect.

Third, the rule does not consider the "immediate and continuing effect upon the property and the owners of the property in the areas established."[91] Pests, disease, and transgenic contamination associated with canola production would agronomically devastate the properties on which other Brassica crops are grown. These impacts would in turn deliver a serious economic blow to the owners of farmland in the region.

ODA appears to believe that it cannot keep in place the 500-acre limit on canola in the absence of new legislative action.[92] In other words, in the agency's view, the expiration of the current authorizing statute—which establishes the 500-acre cap—strips the agency of any authority to institute that cap in its proposed rule. But that is a misreading of the authority granted to ODA by the legislature. ORS 570.405 gives ODA broad authority to regulate canola in order to protect the specialty seed industry. ODA must exercise this power "reasonably and justly."[93] It would certainly be reasonable and just for ODA to keep intact the 500-acre cap on canola to assure the viability of the specialty seed industry. Therefore, contrary to the agency's understanding, ODA can in fact lawfully keep in place the existing acreage limit on canola without waiting for a new authorizing statute.

2) **ODA failed to comply with the statutory directive to use Oregon State University researchers' recommendations as the rational basis for any changes to the Protected Zone**

ODA failed to adhere to the statutory requirement that the new proposed rule be based on evidence gathered by Oregon State University researchers. In fact,

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[91] ORS 570.405

[92] In a *PowerPoint* presentation delivered by Director Alexis Taylor, the option to extend the current system (500 acres in the Willamette Valley Control area) is listed under recommendations that "require legislative action."

[93] ORS 570.405

ODA acknowledged this requirement in its own internal documents.[94] The authorizing statute states: "The department may authorize the growing of canola under this section *only [i]n a manner that the college has determined* to be compatible with the growing of other crops" (emphasis added).[95]

First, the college recommended designating "a specific number of acres for canola production"—in other words, an acreage cap.[96] Yet, the proposed rule has no acreage cap whatsoever. Instead, the agency simply declines to set any cap, permitting unlimited canola production.

Second, the college recommended setting up a required pinning system, requiring canola growers to register and provide the locations and details of their plantings in a public system, with full transparency. ODA also declined to propose such a system.

Third, the study found that isolation distances are necessary between canola and other Brassica crops "to maintain seed purity."[97] The proposed rule fails to specify isolation distances. Again by disregarding one of the central findings of the study it was directed to rely on, ODA risks leaving specialty seed growers vulnerable to cross-pollination, contrary to legislative directives.

In short, ODA's rulemaking authority to deviate from the *status quo ante*, the 2009 rules and protected zone, is limited by the findings of the new OSU study. ODA was never granted the authority to promulgate a canola rule that was not based on the findings of the Oregon State researchers. Yet the agency has proposed to do just that, and without giving any explanatory rationale for its departures, to boot. Therefore, the agency has exceeded its statutory authority, and on this basis its rule must be declared invalid.

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[94] In a document entitled *Willamette Valley Rapeseed Production District*, the Purpose Statement reads: "The legislative intent is clear in both the language and the investment of public dollars that the ODA based on the recommendations of the Oregon State University research, develop a solution that allows the production of canola and protect the specialty seed industry in the Willamette Valley."
[95] ORS 570.450(1)(4)(b).
[96] *Final Report- House Bill 2427* (pg. 2).
[97] *Final Report- House Bill 2427* (pg. 1).

B. The notice of proposed rulemaking fails to comply with applicable rulemaking procedures

ODA's notice of proposed rulemaking has an inadequate fiscal impact statement

The required fiscal impact statement accompanying the proposed rule is impermissibly lacking in information. Under ORS 183.335(2)(b)(E), state agencies are required to include with their notice of proposed rulemaking:

> A statement of fiscal impact identifying state agencies, units of local government and the public that may be economically affected by the adoption, amendment or repeal of the rule and an estimate of that economic impact on state agencies, units of local government and the public. In considering the economic effect of the proposed action on the public, *the agency shall utilize available information to project any significant economic effect of that action on businesses* which shall include a cost of compliance effect on small businesses affected.[98]

The adequacy of a fiscal impact statement must be evaluated in terms of its accuracy; a statement that reflects the agency's perceived impacts is not valid if its content is incorrect.[99] An inadequate statement renders the agency's notice non-compliant with applicable rulemaking procedures, making the rule invalid.

ODA's fiscal impact statement is inadequate in several respects. First, ODA failed to adhere to the Administrative Procedures Act's requirement to "utilize available information to project any significant economic effect."[100] ODA states rather vaguely: "The rules will predominantly affect small businesses that produce, handle, process, or transport Brassicaceae within the Willamette Valley and the state of Oregon."[101] Yet ODA undertakes no analysis to project what exactly that impact will be. The statute makes clear that ODA is required to provide an estimate of the nature of the economic effects, not merely state that the rule will have some effect.[102]

ODA has the information necessary to project economic effects, but inexplicably decided to exclude it from the 2019 notice. In previous fiscal impact statements, ODA has in fact articulated the nature and extent of economic effects,

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[98] ORS 183.335(2)(b)(E) (emphasis added).
[99] *Fremont Lumber Co. v. Energy Facility Siting Council*, 331 Or. 566, 568, 16 P.3d 1147, 1148 (2001).
[100] ORS 183.335(2)(b)(E).
[101] Oregon Department of Agriculture, *Notice of Proposed Rulemaking* (4/29/2019).
[102] ORS 183.335(2)(b)(E).

rather than note the mere existence of some effect. The 2009 canola rule's fiscal impact statement suggested that "cross-pollination or contamination of seed crops by unregulated canola would have serious negative economic impacts on the seed and vegetable industries." The 2013 rule's fiscal impact statement described canola production as "incompatible" with specialty seed production.

ODA has given no explanation for why such adverse impacts are no longer relevant today or why the agency believes it can ignore them. The agency thus should have included in its fiscal impact statement its earlier concerns about the "negative economic impacts" on specialty seed production and the "incompatible" nature of canola and specialty seed. If the agency has a different position now, it must explain why that is the case and to what extent.

ODA's complete neglect of these economic effects—without any justification—suggests that its fiscal impact statement is plainly inaccurate. The inaccuracy of a fiscal impact statement constitutes a basis on which a court may declare a rule invalid.[103]

Further, the fiscal impact statement fails to fulfill the purpose of such statements: to notify potentially affected parties so that they may provide the agency with the information it needs to make an informed decision.[104] Merely stating that a rule *will* affect Brassica producers—but without saying *how*—does little to enable specialty seed producers to assess the rule's likely impact on them, leaving them ill-equipped to provide input during the rulemaking process.[105] Failing to discuss, or even mention, the significant economic effects of opening the Willamette Valley to unlimited commercial canola production, and instead attempting to pass ODA's responsibility onto the specialty seed growers themselves, contravenes ORS 183.335(2)(b)(E).

The ODA statement's failure to specify the nature of the fiscal impacts may create the impression that those impacts are insignificant, rather than alert seed producers to the very serious potential impacts.[106] That is "precisely the evil that the statutory requirement of [a fiscal impact statement] was intended to avoid."[107] That "evil" is particularly relevant in this context, where an agency has unjustifiably declined to notify affected parties of the proposed rule's adverse

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[103] *Fremont Lumber Co. v. Energy Facility Siting Council*, 331 Or. 566, 568, 16 P.3d 1147, 1148 (2001).
[104] *Bldg. Dep't, LLC v. Dep't of Consumer & Bus. Servs.,* 180 Or. App. 486, 488, 43 P.3d 1167, 1167 (2002).
[105] *Id.*
[106] *Fremont Lumber Co. v. Energy Facility Siting Council*, 331 Or. 566, 568, 16 P.3d 1147, 1148 (2001).
[107] *Id.*

impacts. Because ODA has failed to explain or give any justification for these impacts, it is acting beyond the range of its discretion or authority.

ODA fails to consider how its rule's impact will vary among Brassica growers. It states merely that the proposed rule will affect Brassica growers—but these impacts will not be felt equally by canola growers and specialty seed growers. In contrast to the alleged economic benefits for a minority of growers wishing to crop canola in the Willamette Valley, which would likely be fleeting, the resulting harm to specialty seed growers could be permanent, irreparable, and devastating. Contamination and weed resistance, as well as pest and disease harms, are not merely economic in nature (although those economic losses are considerable at tens of millions of dollars) but are also irreparable agronomic and environmental harms, such as changing the DNA of plants and unleashing engineered superweeds in the Willamette Valley. Putting the short-term benefits of a few canola producers above the long-term viability of the Willamette Valley's unique specialty seed production, which is both economically and environmentally valuable, is arbitrary, unreasonable, and unjust.

ODA's regulation is premised on "co-existence"—as if canola and specialty seed growers reap the same benefits and are exposed to the same degree of risk. The very idea of "coexistence" in this context is a misnomer. Canola is not harmed in any way by the existing related Brassica family and other seed industries. Rather, the harms in question are a one-way ratchet. A proper term and approach for protecting a crop within this sort of relationship is "contamination prevention."

As specialty seed grower Frank Morton encapsulates so well: "This is the heart of the problem with coexistence between quality seed growers and growers who crush oil from seed. All the incentive to prevent cross-pollination, roadside dispersal, volunteers blooming in fields and fencerows, and fastidious control of pests and disease falls to the growers of seed for planting. There is no economic harm or harm to reputation for the oilseed grower to be cross-pollinated or disease infected by neighboring crops or feral crops along the state right of way."[108]

According to the agency, "it is believed that acreage will not be sufficiently large to harm the vegetable seed industry in the protected zone." However, ODA cannot know whether total canola production acreage in the Willamette Valley under the proposed rule would be large enough to harm specialty seed growers, because *it does not actually place a cap on the total canola acreage it would allow.*

Finally, although required by ORS 183.336(a), ODA neglected to include "[a]n

[108]Frank Morton, "Frank Morton of Wild Garden Seed Speaks to Coexistence" (June 11, 2019), available at https://seedalliance.org/2019/frank-morton-of-wild-garden-seed-speaks-to-coexistence/

estimate of the number of small businesses subject to the proposed rule." In lieu of complying with this requirement, ODA merely notes that it "is unable to estimate the number of small businesses that may be subject to this rule." Yet providing information about the number of small specialty seed growers who would be affected by the proposed rule would allow ODA and the public to understand the total impact on small farmers of allowing canola production in the Willamette Valley. As discussed, these impacts on small farmers and agricultural businesses that rely on the Willamette Valley for seed will be significant. ODA's disregard for compliance with these statutory mandates is impermissible.

C. The proposed permit system is unlawfully vague

The proposed regulations set up a system in which ODA could grant permits for canola growers. The notice of proposed rulemaking states: "Production of canola outside the Isolation Area and within the Willamette Valley Protected District is allowed by permit only."[109] Growers are required to submit an application to ODA in order to obtain a permit. Yet the information contained in the application is largely mundane: name and contact information, GPS coordinates of growing field, and acreage of each field.

In an internal document on the development of the proposed rule, ODA suggested that a primary function of the permit system would be to ensure a 3-mile isolation distance between Brassica crops.[110] Yet in the notice of proposed rulemaking, the agency neglects to make any mention of isolation distances in its explanation of the permit system. More broadly, ODA fails to explain or disclose important aspects about that permitting process: what the conditions will be for such permits, or the review standards by which the agency will deny or grant such permits, or any public process or transparency for those permits, for example. The entire purpose of the permit system is to guard against unchecked growth in canola acreage. Effectively reining in canola production requires rigorous criteria by which to evaluate applications for permits. Absent such criteria, there is no guarantee against ODA's arbitrarily granting permits. The proposed permit system is impermissibly vague and arbitrary, and thus unlawful.

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[109]Oregon Department of Agriculture, Notice of Proposed Rulemaking https://www.oregon.gov/ODA/agriculture/Documents/ProposedRulemakingBrassicaceaeProduction.pdf

[110] In a document entitled *Willamette Valley Rapeseed Production District*, ODA states: "ODA in attempt to maintain a 3-mile isolation distance between Brassica crops shall establish and administer a rapeseed production permit."

ODA's Rationale for the Proposed Rule

Purported rationale of ensuring a farmer's right to choose what to grow

While ODA fails to provide the public with any explanation or rationale for the proposed rule or for its significant departures from the agency's past positions, as well as the OSU study's recommendations, some underlying conclusions can be found implicit in the agency's proposal. For example, implicit in the proposed rule's approach is the theory that the Valley must be opened to more canola growing because farmers have a "right" to grow their choice of product. Yet as demonstrated by the statute authorizing control areas, a grower's right to decide what to grow on her land is of course not without limit. That is, one grower's freedom of choice is unrestricted until it becomes incompatible with another grower's freedom of choice, at which point it is impossible for the two growers to simultaneously further their interests. Property interests are not absolute and are limited by basic precepts of common law, as well as statutory law. Here, the Legislature authorized ODA to establish control areas when agricultural interests are incompatible; the 2009 canola rule is but one example of ODA's exercise of this authority.

Claim that ODA lacks authority to consider market-based economic issues

ODA has also in other contexts related to the canola controversy asserted that it cannot consider the economic impacts of growers' crop production when making decisions. However, ODA's assertion is completely inconsistent with ODA's broad statutory authority to create control areas to protect industries, as well as with the agency's own actions.

First, this claim is flatly contrary to ORS 570.405(1), which explains that control districts can be established

> for the general protection of the horticultural, agricultural or forest industries of the state from diseases, insects, animals or noxious weeds or for the eradication or *exclusion from such areas of certain plants* or their produce, trees, diseases, animals, insects or noxious weeds *that may be a menace to such areas and generally to horticultural, agricultural or forestry industries*.[111]

As outlined above, canola's decimation of the market for pure, specialty *Brassica* and *Raphanus* seeds and other seeds such as clover would clearly constitute a "menace" to the specialty seed industry in the Willamette Valley in the form of substantial economic harm. Therefore, canola falls within "certain plants" that

[111] ORS 570.405(1) (Emphases added).

"may be a menace" to an agricultural industry, as stated in the statute. ODA's decision not to protect the Willamette Valley specialty seed growers from canola is inconsistent with the agency's statutory authority, and thus unreasonable, unjust, and arbitrary.

A second unexplained inconsistency is that several aspects of ODA's previous actions contradict this statement. First and foremost, the canola protection district itself was put in place in 2005 and reaffirmed in 2009 in order to protect against economic/market harm to Willamette Valley growers, including contamination harm. The point of the rule is to protect growers from canola's harms, which will adversely impact their thriving seed industries. As noted above, a court must remand any agency decision that is arbitrary and unreasonable.

In addition to previous actions protecting against economic harms, ODA is acting internally inconsistently, because the *fundamental purpose behind the proposed rule is economic in nature*. That is, as ODA recognizes, the proposed rule would give some producers in the Willamette Valley an opportunity to earn more from their land, at least while biofuel production is profitable. Certainly, ODA was considering economic consequences when it observed that some producers want to produce canola in the Willamette Valley because restrictions and declining demand reduced the profitability of growing the grass seed they had been producing. What's good for the goose is good for the gander: ODA cannot tout economic rationale for the rule on the one hand, while claiming on the other hand it cannot consider negative economic impacts from that same action.

Indeed, ODA's website announces that part of the agency's mission is "ensure healthy natural resources, environment, and economy for Oregonians now and in the future through inspection and certification, regulation, and promotion of agriculture and food."[112] A statement that ODA is obligated to promote seed markets is inconsistent with ODA's position that it cannot consider harm to the specialty seed industry resulting from market preferences. Such inconsistency is impermissible, as well as arbitrary and unreasonable.

A third unexplained inconsistency is that several other ODA rules state that ORS 570.405 authorizes establishment of a control area to protect the viability of seed production based on market-based, economic concerns about contamination. Of course the 2009 rule was intended to do just what ODA now says it cannot do. In addition to the 2009 rule, four other rules create control areas because production of a crop "would pose a potential threat of contamination to currently established grass seed production in the area," drawing authority from ORS 570.405.[113]

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[112] *About Us*, ODA, https://www.oregon.gov/ODA/AboutUs/Pages/Mission.aspx (last visited June 17, 2019).

[113] OAR 603-052-1030; OAR 603-052-1040; OAR 603-052-1050; OAR 603-052-1060.

Therefore, ODA's sudden determination that it cannot consider market-based economic issues concerning *Brassicas* is impermissibly inconsistent with the canola protection district itself as well as other similar ODA rules. Such inconsistency is unreasonable and arbitrary. Any proposed rule must take into account not just pest and disease issues but also market-based economic harms.[114]

Claim that ODA cannot treat GE crops differently

Also according to the agency in other related contexts, it cannot treat GE crops differently than conventional crops. This is presumably why the proposal does not address the GE canola issue. This position is both wrong and largely irrelevant. First, ODA need not focus on transgenic canola per se, since the harms in question here *will occur whether or not the canola is genetically engineered*. That said, many of the harms are indeed exacerbated by the fact that canola is mostly the transgenic, "Roundup Ready" variety. Weedy volunteer and feral Roundup Ready canola plants will plague seed and other crop growers; increased use of glyphosate will worsen the glyphosate-resistant weed epidemic. Contamination will cause organic growers to lose their customers and markets, since organic consumers demand that their products be free of transgenic content. In addition to their reputation and markets, organic growers can also lose their organic certification, since U.S. Department of Agriculture (USDA) organic standards prohibit genetic engineering and require that all inputs in organic production must be one hundred percent organic. Given these differences, it would be arbitrary and unreasonable for the agency to not account for these obvious and fundamental differences.

Moreover, ODA certainly can and does account for the transgenic nature of plants already in other contexts. There is no bar to state regulation of GE crops. In fact, the federal oversight of GE crops has been widely criticized by scholars, courts, and independent government reports as fundamentally flawed and seriously lacking in scope and enforcement. Oregon's own GE bentgrass contamination incidents, which continue, should serve as a telling reminder of how inadequate USDA's oversight is.[115] And, since USDA does not currently undertake any post-market monitoring, further data about the extent of these harms is woefully inadequate. This reality should provide more, not less, impetus for states like Oregon to properly account for any harms related to transgenic organisms.

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[114] Even that pest/disease vs. market-based harms distinction is arbitrary and false, since one of the major problems with the pests and diseases that industrial canola will bring is that it will harm non-canola farmers *economically*, in the costs it will take to address the pest and disease outbreaks, or the losses to their crops from the pests and diseases.

[115] George Kimbrell, "Meet Monsanto's Dangerous Bioengineered Plant That Never Dies" (Dec. 16, 2016), available at https://www.alternet.org/2016/12/sordid-tale-monsantos-genetically-engineered-bentgrass-dangerous-grass-never-dies/

Finally, ODA's position is inconsistent with ODA's own rules. In fact, ODA explicitly asserted its authority to require physical separation between conventional and GE crops and otherwise treat the two differently in its "Bentgrass Control Area in Jefferson County":

> As authorized in ORS 570.405, a control area is established in Jefferson County to regulate the production of bentgrass. *This control area is designed to provide physical separation between varieties of bentgrass produced using techniques of modern biotechnology and conventionally bred varieties with which they might cross-pollinate.*[116]

In that rule, ODA further elaborated upon the division:

> Varieties of bentgrass that have been developed using the techniques of modern biotechnology may not be planted in Willamette Valley counties in order to *prevent cross-pollination with traditionally bred varieties*.[117]

Moreover, in addition to distinguishing GE bentgrass from traditional varieties, ODA recognized the difference between GE canola and traditional canola in 2006, when it issued a permit to allow research on the Central Oregon agricultural experiment stations only if GE canola was excluded from the trials.[118]

Finally, any claim by ODA that it cannot regulate GE canola separately or differently from traditional canola is also belied by federal law, in which the Ninth Circuit has now established that states are not preempted by federal law from regulating any GE crops that USDA has commercialized, which includes all forms of GE canola.[119]

Thus ODA's new claim on lacking authority to treat GE canola differently is inconsistent with its previous recognition that it is authorized to create a control area to protect traditional crops from GE versions, as well as its differentiation

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[116] OAR 603-052-1240(2) (emphasis added).
[117] *Id.* at 603-052-1240(5)(h) (emphasis added).
[118] D.T. Ehrensing, *Canola* 9, (Feb. 2008), *available at* ir.library.oregonstate.edu/downloads/1g05fb99n.
[119] *Atay v. County of Maui*, 842 F.3d 688, 703-705 (9th Cir. 2016); *id.* at 705 ("Accordingly, we hold that the PPA does not impliedly preempt the Ordinance in its application to GE crops that APHIS has deregulated. The regulation of commercialized crops, both of GE and traditional varieties, remains within the authority of state and local governments.").

between GE and traditional canola in Central Oregon, and is therefore arbitrary and unreasonable.

The Proposed Rule Is Inconsistent with ODA's Mission

The proposed rule, which threatens a unique and internationally-recognized specialty seed market, is inconsistent with ODA's stated mission. The agency's mission is to "ensure healthy natural resources, environment, and economy for Oregonians now and in the future through inspection and certification, regulation, and promotion of agriculture and food."[120] In proposing the new rule, ODA fails to pursue this mission.

First, in advocating for one industry's short-term gain over the long-term ability of an ecosystem to support another industry, ODA fails to ensure a healthy natural resource base for future generations. As discussed above, harm to specialty seed production from seed lot contamination and cross-pollination of canola, and especially from GE canola, does irreparable damage to the industry. Oregon already has one issue with an herbicide-resistant, GE crop spreading into the wild unexpectedly (i.e., creeping bentgrass)[121] and does not need another, especially when what is at stake is the future of a unique industry.

Second, in proposing this rule, ODA not only fails to promote the internationally-renowned specialty seed industry, but also actually jeopardizes it. Worse, ODA attempts to simply renounce responsibility for considering economic impacts on unique Oregon industries. ODA asserts that it cannot attempt to protect agricultural industries from market-based threats. However, this is directly contrary to the third prong of the agency's stated mission and historical stance.

As just one example of ODA's former support for considering economic issues, ODA's own online "Oregon Department of Agriculture history" observes that in the 1940s, then-Director Ervin Peterson "correctly noted the importance of markets" when he wrote:

> It has long been recognized that we must depend on distant markets for the use of most of our agricultural production. . . . Merchandising our output demands constant attention. Consumer preference must

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[120] *About Us*, *supra* note 112.

[121] *See generally* Lies, *Canola Study Validates State's Prohibitions*, *supra* note 61; *Spread of Herbicide-Resistance from Genetically Modified Creeping Bentgrass into the Wild*, THE NATURE INST. (2008), http://natureinstitute.org/nontarget/reports/bentgrass_001.php.

constantly be studied.[122]

That website further notes that "[t]oday, ODA's Agricultural Development and Marketing Division stresses the need for offering an Oregon product that the consumer wants. Roughly 40 percent of the state's agricultural products are exported to foreign markets."[123] ODA's new stance that it cannot consider consumer preferences and market perceptions is plainly inconsistent with its previous position on the issue.

The Proper Status Quo Ante is the 2009 Regulations and Protection Area

The current statutory directives from 2013 and 2015 are set to expire this year.[124] Their implementing regulations will as well.[125] ODA is under the impression that, if and when the agency declines to issue new regulations, the Willamette Valley Protected District "will cease to exist."[126]

But the outcome should never be a "Wild West" situation, in which the specialty seed industry is left completely unprotected. Such a result would be contrary to the long history of the protected zones in the state and the plain intent of the more recent legislation, which is to maintain protection for growers. Rather, the result of a failure to enact any regulations by the time the current statutes expire is a return to the status quo ante of the Valley: the 2005 and 2009 regulations.

When the legislature granted ODA broad authority to create control areas, it also barred the agency from exercising that authority "unreasonably, unjustly, or arbitrarily."[127] It would be quite unreasonable and unjust if—in the event that ODA does not issue a new rule—canola production were suddenly unregulated in the Willamette Valley. First, such an outcome would run counter to the legislature's intent to protect agricultural industries from "menace[s]."[128] Second, it would mean

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[122] *Oregon Department of Agriculture History, The 1940s: The War Years*, ODA, www.oregon.gov/ODA/shared/Documents/Publications/Administration/ODAHistory.pdf (last visited June 20, 2019).
[123] *Id.*
[124] ORS 570.450 (Section 1, chapter 724, Oregon Laws 2013, is repealed on July 1, 2019).
[125] OAR 603-052-0882.
[126] An ODA internal "Talking Points" document drafted in May 2019 contains this: "Where are we now? Proposed Canola rules are out for public comment. If ODA does not adopt new rules, the Willamette Valley Control District will cease to exist July 2019."
[127] ORS 570.405(2).
[128] ORS 570.405(1).

that any progress made from existing regulations is bound to be quickly reversed. And, it would enable ODA to relax restrictions on canola growers by simply declining to promulgate rules, rather than fulfill its obligation to implement the legislature's statutory directives. Finally, such a situation would also be flatly contrary to the 2013 and 2015 directives, and 2017 OSU study, which supported some canola growing, but only in limited and controlled circumstances.

That the agency recognizes the real *status quo ante* of the 2009 rule is important, because it sets the baseline for the agency's actions, and any derivation from its past positions. The agency has a continuing duty to explain how the rule is reasonable and non-arbitrary. It must do that against the backdrop of the many years of protection in the Valley and the agency's own longstanding and consistent interpretation that canola is incompatible with a healthy Valley. It cannot lawfully run from this history.

CONCLUSION

ODA's proposed rule is unnecessary and unsupported by sound science, policy, or law. The agency's proposal would open the Willamette Valley to unprecedented canola planting and portend its agronomic, environmental, and economic downfall. ODA must shelve its misguided and unlawful proposal, and instead return to the 2009 rule.

Respectfully submitted,

/S/

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