Canola: An Opportunity Crop in the PNW

MSU-CARC Research Roundup

December 11, 2018

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Department of Crop & Soil Sciences - WSU
WSU-WOCS project
PNW canola production
PNW Canola Association
“Growing canola requires a different way of thinking, from a systems approach - chemical systems, cropping systems, rotational systems.”

WA canola producer
• Started in 2007
• Research and Extension
• 30 interdisciplinary faculty and staff
• 18 graduate students
• ‘Oilseed Series’ of WSU Extension fact sheets
• Website (www.css.wsu.edu/oilseeds)
• Facebook page (WSU Oilseeds)
• Annual Oilseed Workshops
• WA canola acreage increased 6,000 to 68,000
• 2018 PNW canola = 230,000 acres
PNW Canola, Area Planted, 2014-2018

1,000 acres

- Washington
- Oregon
- Idaho
- Montana

Year | Washington | Oregon | Idaho | Montana
--- | --- | --- | --- | ---
2014 | 51 | 20 | 50 | 2
2015 | 37 | 10 | 50 | 0
2016 | 33 | 10 | 50 | 0
2017 | 60 | 0 | 0 | 0
2018 | 68 | 0 | 0 | 0
PNW Canola Production by State, 2014-2018

1,000 lb

- Washington
- Oregon
- Montana
- Idaho

2014: 56,400
2015: 37,400
2016: 58,900
2017: 86,400
2018: 136,000
Why Consider Canola?
Why Consider Canola?
Consider these benefits:

- Crop rotation, crop rotation, crop rotation
- Chemical rotation; variety of technology traits available (GMO and non-GMO)
- Improved weed management
Consider these benefits:

- Yield increase in subsequent wheat/cereal crop
- Economics – steady market, positive bottom line
- Break disease and pest cycles
Consider these benefits:

- Improve soil structure and health
- Increase water infiltration
- No need to purchase new equipment
- LOCAL demand
Cover Cropping with Canola??

BEFORE canola: 35 bu/A wheat, $1.35/bu dockage for weed seeds
Cover Cropping with Canola??

BEFORE canola:  35 bu/A wheat, $1.35/bu
dockage for weed seeds

AFTER canola: 75 bu/A wheat, NO
dockage fees, minimal weed population
Where & How Does Canola Have a Fit?

“You need to be willing to put time into learning about the crop and not treat it second-hand.”

“Canola is not your father’s wheat!”
Getting started

- Crop rotation
- Chemical rotation
- Herbicide history
- Variety selection
- Weed control
- Economics
- Landlords and lenders
Herbicide History is Key!

• Before considering canola, you MUST know the herbicide rotation history of the field

• Canola without resistance traits is very sensitive to Group 2 herbicides
Group 2 Herbicide Damage - Drift

- Canola flowering time = wheat spraying time
- Canola is VERY sensitive to SU’s used in cereals (e.g. Harmony Extra)
- Avoid nearby aerial applications, if possible
Herbicides of Concern

Group 2 (ALS Inhibitors)

**Sulfonylureas**
- **Ally Extra** (metsulfuron + thifensulfuron + tribenuron)
- **Amber** (triasulfuron)
- **Finesse** (chlorsulfuron + metsulfuron)
- **Maverick** (sulfosulfuron)
- **Olympus** (propoxycarbazone)
- **Powerflex** (pyroxsulam)

**Imidazolinones**
- **Beyond** (imazamox)
- **Pursuit** (imazethapyr)

Slide courtesy of Drew Lyon, WSU
# Herbicide Rotation Restrictions

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Recrop interval (months)</th>
<th>Canola</th>
<th>Mustard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally Extra</td>
<td>10-22&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
<td>10-34&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Amber</td>
<td>FB</td>
<td>FB</td>
<td>FB</td>
</tr>
<tr>
<td>Finesse</td>
<td>FB</td>
<td>FB</td>
<td>FB</td>
</tr>
<tr>
<td>Maverick</td>
<td>3&lt;sup&gt;2&lt;/sup&gt; – 22&lt;sup&gt;1&lt;/sup&gt;</td>
<td>FB</td>
<td></td>
</tr>
<tr>
<td>Olympus</td>
<td>22&lt;sup&gt;3&lt;/sup&gt;</td>
<td>FB</td>
<td></td>
</tr>
<tr>
<td>Powerflex</td>
<td>10</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup>Dependent on soil pH and accumulated precipitation.
<sup>2</sup>Clearfield varieties only.
<sup>3</sup>Dependent on accumulated precipitation.

Slide courtesy of Drew Lyon, WSU
## Herbicide Rotation Restrictions

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Recrop interval (months)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Canola</td>
<td>Mustard</td>
</tr>
<tr>
<td>Beyond</td>
<td>0&lt;sup&gt;1&lt;/sup&gt; or 26</td>
<td>26</td>
</tr>
<tr>
<td>Pursuit</td>
<td>NS&lt;sup&gt;1&lt;/sup&gt; or 40</td>
<td>40</td>
</tr>
<tr>
<td>Spartan</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Valor</td>
<td>4-6&lt;sup&gt;2&lt;/sup&gt; or 8-12&lt;sup&gt;3&lt;/sup&gt;</td>
<td>4-6&lt;sup&gt;2&lt;/sup&gt; or 8-12&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Huskie</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Sencor</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Clearfield varieties only.
2. Tilled fields, interval dependent on rate used.
3. No-till fields, interval dependent on rate used.

*Refer to Extension Bulletin PNW571 - Plantback Restrictions for Herbicides Used in the Dryland Wheat Production Areas of the Pacific Northwest*
Variety Selection
Variety Selection

There are herbicide tolerant winter and spring varieties available for the PNW

* SURT = SU-Residual Tolerant (*not* IMI tolerant)

* Clearfield = IMI Residual Tolerant (*most* are SU residual tolerant), non-GMO
Variety Selection

- Non-GMO
  - Conventional
  - Clearfield
- GMO
  - Roundup Ready
  - Liberty Link
- High Oleic (Specialty)
  - Dow (Nexera)
- High Omega (pending)
  - Cargill
  - NuSeed
Variety Selection

Non-GMO = conventional or Clearfield
- Mercedes, Edimax CL, others – Rubisco Seeds
- Claremore – High Plains Crop Development
- Amanda – University of Idaho
- Griffin – Kansas State University
- Surefire – Kansas State University
- NCC101S, Quartz – Photosyntech
- DeKalb
- DL Seeds
# SU Residual Tolerant Canola Varieties

**‘SURT’**

<table>
<thead>
<tr>
<th>Seed Company/University</th>
<th>Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kansas State University</td>
<td>Surefire</td>
</tr>
<tr>
<td>(winter, SURT)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Croplan by Winfield</td>
<td>115 W (aka HyCLASS 115)</td>
</tr>
<tr>
<td>(winter only, SURT and RR)</td>
<td>225 W (aka HyCLASS 225)</td>
</tr>
</tbody>
</table>

* shortens plantback interval

* SU’s *cannot* be applied postemergence
## IMI Residual Tolerant Canola Varieties

<table>
<thead>
<tr>
<th>Seed Company/University</th>
<th>Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>BrettYoung (spring)</td>
<td>5545 CL</td>
</tr>
<tr>
<td>Dyna-Gro (spring)</td>
<td>DG200CL, X122CL (junccea)</td>
</tr>
<tr>
<td>Dow AgroScience (spring)</td>
<td>Nexera CL (e.g. 2022, 2024)</td>
</tr>
<tr>
<td>High Plains Crop Development</td>
<td>Claremore (winter)</td>
</tr>
<tr>
<td>Rubisco Seeds</td>
<td>Edimax CL (winter)</td>
</tr>
</tbody>
</table>

* shortens or eliminates plantback interval
* also tend to be SU residual tolerant
Clearfield Canola

Susceptible Canola

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It’s all about learning
Oilseeds News & Updates

2019 Spring Oilseed Supply List Updated
All signs are pointing towards a potential significant increase in spring canola and other oilseed acreage not only in the PNW but also the Northern Plains and Canada. While that is great news, it may also result in spring canola seed being in short supply. We encourage you to make crop rotation and variety decisions early, and contact your seed suppliers soon about early purchase discounts. We have updated our list of suppliers in the PNW available on our Production Information page. If you have questions about variety selection, or additions or corrections to the supply list please email Karen Sowers

Save the Date for the 2019 Oilseed Workshops!
Our 2019 WSU Oilseed Workshops will be held January 23 in Wilbur, WA and January 25 in Clarkston, WA. Each
Production Information

Seed Suppliers
- 2019 PNW Spring Oilseed Suppliers
- 2018 PNW Winter Oilseed Supply List

Variety Trial Results

PNW Winter and Spring Canola
- 2018 Final Yield Results from PNW **NEW**

WSU/USDA-ARS
- 2018 Large-scale Spring Canola Variety Trials (pdf)
- 2017-18 Large-scale Winter Canola Variety Trials (pdf)
- 2017 Large-scale Spring Canola Variety Trials (Almira, Pullman, Walla Walla) – yield results (pdf)
- 2016-17 Large-scale Winter Canola Variety Trial (Odessa, Ralston, St. John) – yield results (pdf)
- 2015-16 Winter Canola Variety Trial (Pomeroy, WA) (pdf)
- 2016 Large-scale Spring Canola Variety Trials (Davenport, Fairfield, St. John) – final report (pdf)
- 2014-15 Winter Canola Variety Trials (Pomeroy and Okanogan, WA) (pdf)

University of Idaho
- 2018 Winter Canola Variety Trials (pdf) **NEW**
- 2017 Spring Canola Variety Trials (pdf)
Large-scale canola variety trials

- Landscape variability
- Grower equipment
- Extensive grower interaction and involvement
- Industry collaboration
- Research and Extension: 2 for 1!

“The reason I raise canola is so I can raise above average wheat.”
<table>
<thead>
<tr>
<th>Variety</th>
<th>Ralston (^1)</th>
<th>Reardan (^2)</th>
<th>Walla Walla (^3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCC 101S</td>
<td>1,955 a</td>
<td>774 a</td>
<td>2,417 a</td>
</tr>
<tr>
<td>HyClass 930</td>
<td>1,864 ab</td>
<td>696 a</td>
<td>2,608 a</td>
</tr>
<tr>
<td>InVigor L233P</td>
<td>1,793 bc</td>
<td>693 a</td>
<td>2,433 a</td>
</tr>
<tr>
<td>BY 6080 RR</td>
<td>1,639 c</td>
<td>557 a</td>
<td>2,410 a</td>
</tr>
<tr>
<td>BY 5545 CL</td>
<td>1,694 c</td>
<td>529 a</td>
<td>2,319 ab</td>
</tr>
<tr>
<td>DG 200 CL</td>
<td>1,631 c</td>
<td>508 a</td>
<td>2,253 ab</td>
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<tr>
<td>HyClass 730</td>
<td>1,709 bc</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Nexera 2024 CL</td>
<td>1,291 d</td>
<td>515 a</td>
<td>1,824 b</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>1,710</td>
<td>611</td>
<td>2323</td>
</tr>
<tr>
<td>Tukey HSD(0.05)</td>
<td>223</td>
<td>285</td>
<td>533</td>
</tr>
<tr>
<td>CV (%)</td>
<td>4.8</td>
<td>19.4</td>
<td>9.8</td>
</tr>
</tbody>
</table>

\(^1\) Planted April 9, harvested August 6  
\(^2\) Planted May 11, harvested September 3  
\(^3\) Planted March 30, harvested August 1
Top Picks – Spring Canola

- NCC101S
- BrettYoung 5545CL
- Croplan 930
- InVigor LL233P
- Dynagro
- Star 402
<table>
<thead>
<tr>
<th>Variety</th>
<th>The Dalles&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Ritzvile&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Mansfield&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercedes</td>
<td>3,049</td>
<td>3,130</td>
<td>2,445</td>
</tr>
<tr>
<td>Griffin</td>
<td>2,785</td>
<td>3,034</td>
<td>1,652</td>
</tr>
<tr>
<td>HyClass 320</td>
<td>2,550</td>
<td>2,583</td>
<td>1,929</td>
</tr>
<tr>
<td>Edimax CL</td>
<td>----</td>
<td>2,621</td>
<td>2,163</td>
</tr>
<tr>
<td>Amanda</td>
<td>2,494</td>
<td>2,828</td>
<td>1,817</td>
</tr>
<tr>
<td>HyClass 225</td>
<td>2,333</td>
<td>2,642</td>
<td>1,796</td>
</tr>
<tr>
<td>Claremore</td>
<td>2,241</td>
<td>2,857</td>
<td>1,722</td>
</tr>
<tr>
<td>Mean</td>
<td>2,585</td>
<td>2,814</td>
<td>1,932</td>
</tr>
<tr>
<td>Tukey HSD&lt;sub&gt;(0.05)&lt;/sub&gt;</td>
<td>375</td>
<td>ns</td>
<td>ns</td>
</tr>
<tr>
<td>CV (%)</td>
<td>7.0</td>
<td>12.1</td>
<td>30.2</td>
</tr>
</tbody>
</table>


Top Picks – Winter Canola

- Mercedes
- HyCLASS 320
- Griffin
- Edimax CL
- Amanda
- HyCLASS 225
Top Picks – Winter Canola

- Surefire
- Star 915
- Claremore
- Quartz
- (HyCLASS 115)
Seeding Recommendations

Seeding Date
- Up for debate!

Seeding Rate-Plant Population
- be sure to CALIBRATE your drill!
- ** plant population is more important than seeding rate

Seeding Depth
- ½” – 1” - into moisture, emergence can be reduced if deeper

Row Spacing
- Minimum 12” for WC, maximum 12” for SC; depends on your drill
  - e.g. if using wheat drill with 7.5” row width, block off every other opening for 15” row spacing

Drill Speed - SLOW
- Will depend on moisture conditions, residue, openers
- Target 3-4 mph, check seed distribution and adjust if needed
Weed Control

Herbicides for Canola

- Preplant Incorporated
  - Sonalan, Treflan

- Postemergence grass
  - Assure II, Poast, Select

- Postemergence broadleaves
  - Stinger (Canada thistle)

- Herbicide resistant systems
  - GMO – Liberty Link, Roundup Ready
  - Non-GMO – Clearfield, conventional
N Source & Placement Matters!
More roots, list fertilizer

Urea NH₄SO₄ Control
N Source Toxicity

Urea >>>>> NH₄SO₄ > UAN
Other Nutrients

• Requirements similar to hard red spring wheat
  ▪ **Phosphorus** by soil test, starter rates
  ▪ **Potassium** (rarely needed)
  ▪ **Sulfur** by soil test (<40 lb S/acre)
    • 20-30 lb S/acre
  ▪ **Boron** by soil test
    • Normally ½ to 1 lb/acre
Insect Pests of Canola

Cabbage seedpod weevil

Cabbage aphid

Flea beetle damage

Thrips

Lygus bug

Diamondback Moth
Flea Beetle

Seed Treatments

Helix Xtra/ Cruiser 5FS
Prosper 400
Helix Vibrance
Prosper Evergol
Cabbage Seedpod Weevil

Winter canola, May and June
2 to 3 per plant
3 to 4 per sweep of 15-inch net
Aphids

1 in 5 infested flower stalks
Look among unopened flower buds
Diamondback Moth

Spring canola
Larvae are the problem
10-15 per sq ft, or 10 per plant
Cutworms

Potentially devastating to seedlings.

Foliar insecticides available.

Spray late evening, at night, or early morning before sunrise.
Foliar Insecticides

*lambda-cyhalothrin* (Warrior…)
*zeta-cypermethrin* (Mustang…)
*bifenthrin* (Capture 2EC…)
*deltamethrin* (Battalion 0.2 EC…)
*gamma-cyhalothrin* (Declare…)
*pymetrozine* (Fulfill Aphidicide)
Beneficial Insects in Canola
Beneficial Insects in Canola

- Be Selective
- Spray With Intent
- Think About the Cost
- Economic Thresholds
Canola diseases

- *Rhizoctonia* stem and root rot
- *Sclerotinia* (white mold) - irrigated
- Blackleg
- Clubroot
PNW Processing Facilities:
• Warden, WA
• Rickreall, OR
• Great Falls, MT

Wheat....how low can it go?
Garbs....downward trend

Research
Extension
## Canola Markets

### VITERRA

**Warden indicated bid sheet**

<table>
<thead>
<tr>
<th>Delivery</th>
<th>Month</th>
<th>Futures</th>
<th>Generic Basis (GMO)</th>
<th>Generic (GMO)</th>
<th>Specialty Canola</th>
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</thead>
<tbody>
<tr>
<td>SPOT</td>
<td>JAN</td>
<td></td>
<td>$25.00</td>
<td>$17.42</td>
<td>$18.92</td>
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<tr>
<td>FH DEC</td>
<td>JAN</td>
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<td>$33.00</td>
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<td>JAN</td>
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<td>JAN</td>
<td>JAN</td>
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<td>$44.00</td>
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<td>FEB</td>
<td>MAR</td>
<td></td>
<td>$34.00</td>
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<td>$18.01</td>
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<td>APR</td>
<td>MAY</td>
<td></td>
<td>$30.00</td>
<td>$18.09</td>
<td>$19.59</td>
</tr>
</tbody>
</table>

### Arrive to Bid

<table>
<thead>
<tr>
<th>Arrive to Bid</th>
<th>ADM Velva</th>
<th>Change</th>
<th>Bunge Altona</th>
<th>Change</th>
<th>Cargill West Fargo</th>
<th>Change</th>
<th>CHS Hallock</th>
<th>Change</th>
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</thead>
<tbody>
<tr>
<td>Dec</td>
<td>16.03</td>
<td>↓6</td>
<td>16.61</td>
<td>↑17</td>
<td>-</td>
<td>-</td>
<td>16.80</td>
<td>↓10</td>
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<tr>
<td>Jan'19</td>
<td>15.03</td>
<td>↓7</td>
<td>16.46</td>
<td>↑17</td>
<td>-</td>
<td>-</td>
<td>16.55</td>
<td>↓5</td>
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<tr>
<td>Feb'19</td>
<td>15.89</td>
<td>↓1</td>
<td>16.49</td>
<td>↑13</td>
<td>-</td>
<td>-</td>
<td>16.40</td>
<td>↓10</td>
</tr>
<tr>
<td>Mar'19</td>
<td>15.95</td>
<td>↓10</td>
<td>16.54</td>
<td>↑14</td>
<td>-</td>
<td>-</td>
<td>16.40</td>
<td>↓10</td>
</tr>
<tr>
<td>Apr'19</td>
<td>16.00</td>
<td>↓10</td>
<td>16.97</td>
<td>↑12</td>
<td>-</td>
<td>-</td>
<td>16.35</td>
<td>↓10</td>
</tr>
</tbody>
</table>
“Canola is not always more valuable than wheat until you look at the whole picture.” – Okanogan, WA grower

Summary

✓ Know your herbicide application history
✓ Plan ahead for canola
✓ Read and follow the label
✓ If in doubt, conduct field or plant bioassay, and/or wait another season
✓ Consider SU or IMI trait canola varieties if still in restricted plantback window
✓ SURT canola varieties are *not* IMI-tolerant

✓ IMI canola varieties may or may not be SU soil residual tolerant

✓ No matter how the plant absorbs the Group 2 herbicides, it can’t tolerate much (<1 oz/A in many cases)

✓ Canola is an opportunity crop, and technology traits can increase the likelihood of success

✓ Consider fallow management of volunteer canola depending on herbicide trait, e.g. SU, RR
Growing the canola industry in the Pacific Northwest through education, advocacy, and marketing
Producer board members (10)
ID – Bonners Ferry & Nezperce
MT – Bozeman, Sunburst, Whitewater
OR – Amity, Athena
WA – Lind, Mansfield, Walla Walla

Membership:
Producers: $75 (includes membership to USCA)

Industry:
- Platinum ($5,000)
- Gold ($2,500)
- Silver ($1,000)
- Associate ($500)

Agency: ($100)
WHO is a Canola Association Member?

Industry from all sectors
• Growers
• Seed companies
• Processors
• Academia
• Exporters
• Crop protection companies
• Food manufacturers
What the PNWCA can do:

- Lobby government at the state and regional level
- Partner with the U.S. Canola Association to leverage our lobbying voice in Washington
- Lobby for expanded crop insurance coverage and expanded herbicide registration (special use permit) for use in canola
• Work with universities and state commissions
  
  ➢ The power of university research is crucial to growing the industry.

  ➢ State commissions and check-offs can provide and support funding for regional research.
Stakeholders

- Farmers and Ag Industry
- Government
- Researchers
- Processors/Consumers
- Communities

PNWCA
A Unique Opportunity

- Demand from in-state processors for feedstock
- Price support for most oilseed crops
- Alternative crop diversification
- Economic and agronomic benefit to growers
- Economic benefit to industry
- Economic benefit to local communities
- Continued collaboration
Is Canola “Black Gold?”

“Four out of five years I make more money off my canola than my wheat.”

- Ritzville area grower
SAVE THE DATE!

2019 WSU-WOCS Oilseed Workshops

January 23 – Almira, WA
January 25 – Clarkston, WA
Questions?
Website: www.css.wsu.edu/oilseeds
Facebook: WSU Oilseeds

ksowers@wsu.edu
pnwcanola@gmail.com