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!”
Is canola a challenge to grow... or not?
Know before you grow

- Location
- Cropping system – annual cropping, perennial crops, wheat-fallow, 3-yr rotation?
- Why grow an oilseed? What is your goal?
- Decisions based on:
  - Commodity prices/proximity to markets
  - Variety performance
  - Seed availability
  - Chemical rotation/herbicide history
  - Weed control
  - Production contracts
  - Bottom line

Bottom line
Know before you grow
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 (ALS inhibitors)
Herbicides of Concern

Group 2 (ALS Inhibitors)

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

**Imidazolinones (IMI’s)**
- **Beyond** (imazamox)
- **Pursuit** (imazethapyr)

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

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Canola</th>
<th>Mustard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ally Extra</td>
<td>10-22(^1)</td>
<td>10-34(^1)</td>
</tr>
<tr>
<td>Amber</td>
<td>FB</td>
<td>FB</td>
</tr>
<tr>
<td>Finesse</td>
<td>FB</td>
<td>FB</td>
</tr>
<tr>
<td>Maverick</td>
<td>3(^2) – 22(^1)</td>
<td>FB</td>
</tr>
<tr>
<td>Olympus</td>
<td>22(^3)</td>
<td>FB</td>
</tr>
<tr>
<td>Powerflex</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

\(^1\) Dependent on soil pH and accumulated precipitation.

\(^2\) Clearfield varieties only.

\(^3\) Dependent on accumulated precipitation.

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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>

<sup>1</sup> Clearfield varieties only.

<sup>2</sup> Tilled fields, interval dependent on rate used.

<sup>3</sup> 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*

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Slide courtesy of Drew Lyon, WSU
Othello, WA
pH = 8.4
CEC = 19.2

Valleyford, WA
pH = 4.3
CEC = 18.0
### Generalization of Herbicide Persistence by Chemistry

<table>
<thead>
<tr>
<th>Herbicide Family (pKa)</th>
<th>Acid Hydrolysis</th>
<th>Slower Acid Hydrolysis</th>
<th>Adsorption Microbial Deg</th>
<th>Microbial Deg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thifensulfuron (5.0)</td>
<td>Acid hydrolysis</td>
<td>Slow hydrolysis</td>
<td>Adsorption</td>
<td></td>
</tr>
<tr>
<td>Metsulfuron (3.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imazethapyr (3.6)</td>
<td>Adsorption</td>
<td>Microbial Deg</td>
<td>Microbial Deg</td>
<td></td>
</tr>
<tr>
<td>Imazamox (4.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyroxsulam (5.2)</td>
<td>Adsorption</td>
<td>Microbial Deg</td>
<td>Microbial Deg</td>
<td></td>
</tr>
<tr>
<td>Florasulam (5.0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Every herbicide molecule is unique!*
Variety Selection
Variety Selection

• GMO ("Generic")
  • Roundup Ready
  • Liberty Link

• Non-GMO ("Specialty")
  • Conventional
  • Clearfield

• High Oleic
  • Cargill
  • Dow (Nexera)
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

Photo by Jeannie Olmstead

Canola Variety Trials – UI Parker Farm
SU Residual Tolerant Canola Varieties ‘SURT’

<table>
<thead>
<tr>
<th>Seed Company/University</th>
<th>Variety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croplan by Winfield</td>
<td>115 W (aka HyCLASS 115)</td>
</tr>
<tr>
<td>(winter only)</td>
<td>225 W (aka HyCLASS 225)</td>
</tr>
<tr>
<td>SU residual tolerant and RR</td>
<td></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>DL Seeds (spring)</td>
<td>1506 CL</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
What a difference variety selection can make!

- WSU posts a list of winter and spring oilseed suppliers on the Oilseed Cropping Systems website: http://css.wsu.edu/oilseeds
“Canola is not always more valuable than wheat until you look at the whole picture.” – Okanogan area grower
Summary (cont.)

- 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 canola requires a different way of thinking, from a systems approach - chemical systems, cropping systems, rotational systems.”
- WA canola producer
Companion Cropping?
35 bu/A wheat, $1.35/bu dockage for weed seeds

Not hardly ........
Canola = Opportunity Crop

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
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!
WSU-WOCS Oilseed Workshops

January 22 – Hartline
January 24 – Tri-Cities
January 25 – Colfax
“Canola is not more valuable than wheat until you look at the whole picture.” – WA canola and wheat producer

http://css.wsu.edu/oilseeds
Facebook: WSU Oilseeds
ksowers@wsu.edu | 808-283-7013
rachel.zuger@wsu.edu | 509-335-7109

WASHINGTON OILSEED CROPPING SYSTEMS
Part of the Washington State Biofuels Initiative
Designing Cover/Companion Crop Mixes

Diana Roberts, PhD
Area Extension Agronomist
WSU Extension
Spokane, WA
Ideas learned still subject to verification

- Spring seeded cover crops grown in place of fallow are likely to be high risk in the inland PNW environment.
- Companion crops may be more feasible in this region than cover crops
- Cover/companion crops will not work every year
- Nitrogen fixed by legumes may benefit subsequent crops, rather than the current cash crop.
Ideas learned still subject to verification

- Limit companion or cover crops to three to five species in the dry PNW climate.
- Consider using starter fertilizer for companion/cover crops.
- Use species-appropriate inoculant for all legumes, unless a bioassay indicates unnecessary.
- Seed companion crops at an economic rate that will not outcompete the primary, cash crop.
How can I be sure there isn’t residual herbicide in my field?

- Field Bioassay
- Plant Bioassay
Group 2 Herbicide Damage - Residual
Group 2 Herbicide Damage - Residual

Photo courtesy of Jim B. Davis
Group 2 Herbicide Damage - Residual

Photo courtesy of Jim B. Davis
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
Group 2 Herbicide Damage – Drift
- this is direct hit by Harmony Extra

Photo courtesy of Jim B. Davis