



# THE IMPORTANCE OF CANOLA SYSTEM ROTATIONS

FARM KNOWLEDGE

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## Overview

### Importance of canola rotations.

- Benefits of canola system rotations
- Impact of volunteer canola on yield
- Production contracts
- Strategies for crop planning and diversity

## Did you know?

You can help maximize your canola's yield and profitability simply by rotating your canola systems.







## Why it matters.

Rotating canola systems has a number of benefits, including:

- Better weed control
- Management of resistance in weeds and diseases
- In-crop herbicides with different modes of action
- Increased yield potential
- Opportunity for production contracts

Source: <http://www.farms.com/ag-industry-news/canola-system-rotation-now-more-important-than-ever-548.aspx>

## Volunteer canola – hosts for disease.

**Volunteer canola can host diseases and even pests (e.g. flea beetle).**

- As seeds of canola volunteers are not treated, they can contribute to seed and seedling diseases in the soil
- Growth is clustered around last season's windrowed areas, leading to lodging and increased disease pressure
- Can host diseases in non-canola cropping years (e.g. sclerotinia, clubroot, blackleg)
- Can spread diseases to other susceptible canola volunteers

**Blackleg in canola**



Source: AgSolutions® Performance Trials, Western Canada, 2010

## Reduced yield potential.

**Volunteer canola does not contribute to a canola crop's yield potential.**

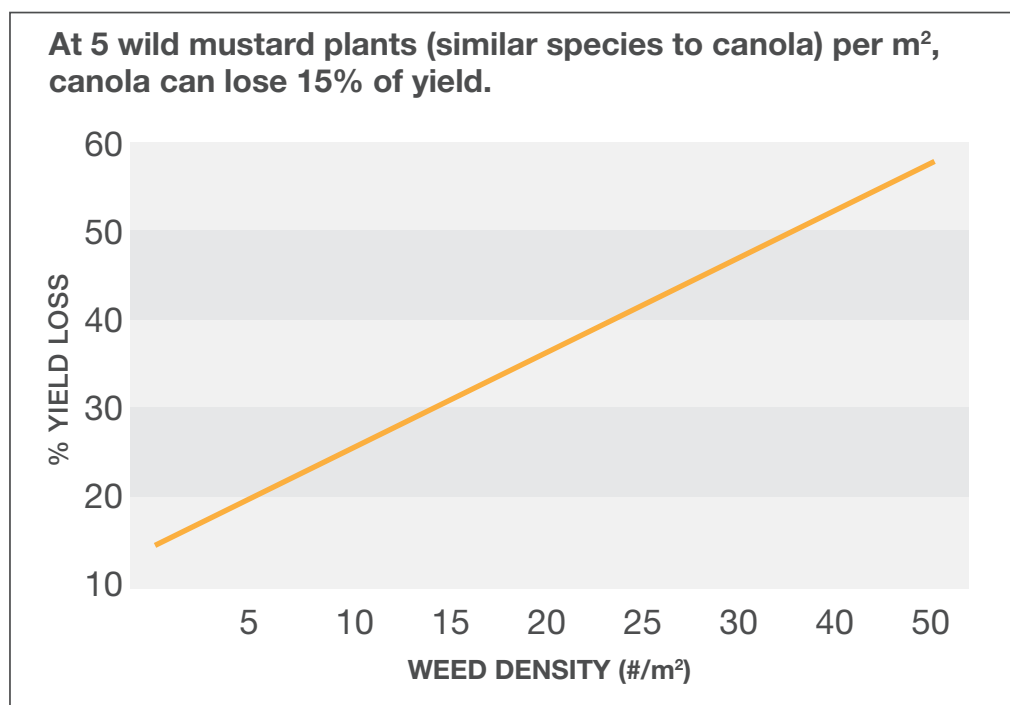
- They compete with the crop for nutrients, light and water
- Difficult to time disease control and harvest due to different stages of growth
- Second generation (F2) seed yield around 13% less than the original hybrids

Sources: 1. <http://www.canolawatch.org/2010/05/17/rotate-herbicide-systems-in-tight-rotations/>  
2. [www.canolacouncil.org/canola-encyclopedia/weeds/weed-management/#volunteer-canola](http://www.canolacouncil.org/canola-encyclopedia/weeds/weed-management/#volunteer-canola).



## Wild mustard example.

Due to its similarity, wild mustard provides an example of yield loss as a result of volunteer canola. See how its weed density and pressure affects yield to generate an estimate of yield loss for a canola crop.



Source: Canola Council of Canada, Canola Growers Manual, 2011.



## Production contracts.

With consumers moving towards healthier oil choices, many grain-marketing companies now offer production contracts specifically for growing certain **Clearfield**® canola varieties.

### Rotating into different canola systems:

- Provides opportunities for production contracts
- Reduces contamination by volunteer canola that can otherwise impact premiums from production contracts

### Current Grain Contractors

- ADM
- Bunge
- Cargill
- Louis Dreyfus
- Viterra



## Managing volunteers.

To control volunteer canola, consider and plan for the use of alternative canola systems:

- Keep records of herbicide-tolerant traits grown on each field to determine the herbicide tolerance of volunteer canola
- Rotate canola systems to use different herbicidal modes of action
  - E.g. Roundup Ready® canola followed by **Clearfield** canola
- Choose a canola system with a herbicide that will control emerged canola volunteers, allowing for post-emergent control even if the opportunity for a pre-seed burndown was missed

## Canola crop planning and diversity.

*“Rotations for weed management*

*For many canola growers, their most challenging weed has become volunteer canola, especially with tighter canola rotations. Growers may need to consider a rotation of herbicide-tolerance systems as a method to help manage the volunteer canola seed bank...”*

Source: <http://www.canolawatch.org/2011/12/08/rotations-for-weed-management/>





## Clearfield canola.

Including **Clearfield** canola in your rotation can help maximize your crop's yield and profitability.

**When applied with Ares® herbicide, the Clearfield canola system:**

- Provides an alternative mode of action for controlling volunteer canola in tight canola rotations
- Is the only one-pass canola system that delivers reliable post-emergent control of grasses and broadleaf weeds, including subsequent flushes
- Has a wide window of application on both crop and weeds – 2 to 7 leaf canola
- Provides an opportunity for substantial returns from production contracts specific to **Clearfield** canola

## Ares herbicide.

When applied in-crop on Clearfield canola, Ares herbicide provides excellent control of:

- Volunteer non-**Clearfield** canola, including Roundup Ready varieties
- Wild oats
- Wild buckwheat
- Stinkweed
- Cleavers

Ares on volunteer Roundup Ready® canola, 14 days after application



Source: BASF Research Trials

## Ares technical information.

ACTIVE INGREDIENTS	ONE CASE CONTAINS	CROPS
Imazamox (Group 2), Imazapyr (Group 2)	9.8 L jug of Ares 8.1 L jug of Merge® adjuvant One case treats 40 acres.	<b>Clearfield</b> Canola (2 to 7 leaf stage) See label for complete list of crops.
WEEDS CONTROLLED		
<p><b>Selected broadleaf weeds (cotyledon to 4 leaf stage)</b>                      Volunteer canola,<sup>1,2</sup> chickweed,<sup>1</sup> cleavers (1 to 4 whorls),<sup>1</sup> lamb's quarters (cotyledon to 6 leaf), redroot pigweed,<sup>1</sup> round-leaved mallow, Russian thistle, shepherd's-purse,<sup>1</sup> stinkweed,<sup>1</sup> wild buckwheat (cotyledon to 6 leaf), wild mustard<sup>1</sup></p> <p><b>Selected grasses (1 to 6 leaf stage)</b>                      Green foxtail,<sup>1</sup> spring germinating Japanese brome grass (1 to 4 leaf), volunteer barley, volunteer durum wheat, volunteer spring wheat,<sup>3</sup> volunteer tame oats, wild oats, yellow foxtail</p> <p>See label for complete list of weeds controlled.</p> <p><small><sup>1</sup> Multiple flushing weeds.  <sup>2</sup> Non-Clearfield canola varieties.  <sup>3</sup> Non-imazamox-tolerant varieties only.</small></p>		



## Peace River region.

**Ares is only registered for use in the Prairie provinces.**

- Not registered for use in the Peace River region of Alberta or British Columbia

### **Solo® ADV herbicide**

- Can be used as an alternative treatment in this region
- Reliable control of tough weeds
- Excellent re-cropping flexibility

## Weed resistance management.

### **Integrate multiple practices for optimal resistance management:**

- Rotate both the crop and the herbicide Group used in a field
- Select vigorous and competitive crop varieties
- Seed at an optimal rate, decrease row spacing and seed early, to outcompete weeds
- Apply herbicides that contain multiple modes of effective action

### **Multiple modes of effective action.**

- Can be employed through tank mixes or herbicides that contain more than one mode of action
- The most effective means of reducing resistance development

### **Facet™ L**

- Superior control of cleavers, including resistant biotypes
- Widest window of crop application, from pre-seed to 6 leaf
- Versatile rate range
- Flexible tank-mix partner for enhanced weed control

## Facet L technical information.

ACTIVE INGREDIENTS	ONE CASE CONTAINS
<p>Quinclorac (Group 4 and 26)</p>	<p>2 x 9.07 L jugs of Facet L One case treats 65 to 160 acres, depending on rate used.</p>
CROPS	
<p>Canola (pre-seed/pre-emergence to 6 leaf) Wheat (spring and durum) (1 to 5 leaf) Barley (spring) (1 to 4 leaf) Canary seed (3 to 5 leaf) See label for complete list of crops.</p>	
WEEDS CONTROLLED	
<p><b>Selected broadleaf weeds</b> Cleavers (1 to 3 whorls),<sup>1</sup> sow thistle (annual and perennial) (2 to 6 leaf)<sup>2</sup></p> <p><b>Selected grasses</b> Barnyard grass (1 to 5 leaf), green foxtail (up to 2 tillers),<sup>3</sup> volunteer flax (1 to 8 cm)</p> <p><small><sup>1</sup> Suppression only. <sup>2</sup> For control of secondary flushes, use higher application rate of 279 ml/ac (690 ml/ha). <sup>3</sup> For suppression of secondary flushes, use higher application rate of 227 ml/ac (560 ml/ha).</small></p>	





## Summary.

Rotating canola systems can maximize returns by providing:

- Another mode of action to manage herbicide resistance in weeds
- Control of volunteer canola, which can host diseases and pests as well as compete for water, nutrition and sunlight
- Opportunities to earn substantial returns through production contracts

When teamed up, **Clearfield** canola and Ares system herbicide provide control of volunteer canola from other leading systems.

**THANK YOU FOR PARTICIPATING**  
**FARM KNOWLEDGE**