What You’ll Learn...

- How to reduce canola harvest losses
- Shallow or no tillage after canola harvest can help keep canola seed close to the soil surface and expose it to winter conditions
- Rotate to small grains or corn after spring canola
- Use pre-plant herbicide tank mixtures ahead of planting soybean or other crops
- Apply in-crop herbicides before volunteer canola reaches the 4-leaf growth stage

Managing volunteer canola in rotation crops requires intervention at several stages, beginning with management during canola harvest and fall tillage. Management continues with rotational crop selection, use of cultural practices that strengthen crop competitiveness with volunteer canola, and application of pre-plant burndown, residual, and in-crop herbicides.

Reduce Harvest Losses

Managing harvest seed losses is a primary factor for limiting the intensity of volunteer canola infestations. At harvest, canola losses can range from 0.5 to 5 bu/acre (25 to 250 lbs/acre). It is worth monitoring losses and adjusting combines to minimize loss considering typical canola seeding rates are near 5 lbs/acre. The optimum time to swath the crop is when there is an average of 60% seed color change on the main stem.

The height of swathing equipment may be adjusted to get all of the seed pods. Leave about 10 to 12 inches of stubble to anchor the windrow and allow adequate air circulation.

Straight combining can result in pre-harvest pod shattering and combine shattering losses of 8 to 54%. Select a spring canola seed product that is less susceptible to pod shatter to help reduce shatter losses during straight combining. Proper harvest timing is critical to reduce losses. Spring canola is ready to harvest when seed moisture is below 10%.

A pre-harvest desiccant, such as diquat herbicide, may help condition the crop for harvest, particularly in fields with uneven maturity.

Tillage Management

The majority of volunteer canola plants emerge the year following a spring canola crop. Much of the seedbank can be depleted after two years if additional seed is not added. Tillage may promote secondary dormancy by incorporating seed into the soil, inducing a secondary dormancy and increasing the potential persistence of spring canola seed.

No tillage or delaying tillage after harvest can promote spring canola germination and reduce seed survival during the winter. Shallow tillage can keep spring canola seed close to the soil surface and can increase susceptibility to winter conditions.

Crop Rotation

Rotating to corn or small grains after spring canola can provide greater crop competition and allow for the use of a range of herbicide sites of action to control volunteer canola. Growth regulator (Group 4), ALS inhibitor (Group 2), PPO inhibitor (Group 14), and HPPD inhibitor (Group 27) herbicides are recommended by North Dakota State University for volunteer canola control in several crops. Consult the current North Dakota Weed Control Guide - W253 for herbicide effectiveness ratings and control options. Consult individual product labels for use instructions, restrictions, and crop planting intervals for your local area.

Cultural Practices

Enhancing the competitiveness of soybean and other crops with spring canola can help reduce the risk of potential yield loss. Volunteer canola does not compete well with vigorously growing crops. Early planting, narrow row spacing, high seeding rates, good fertility, and selection of seed products that perform well with early planting can all enhance soybean competitiveness.

Roundup Ready 2 Xtend® soybeans

Figure 1. Canola approaching the 4-leaf growth stage.
have shown a 5.7 bu/acre* average advantage over LibertyLink® soybeans.

**Herbicide Options for Soybean**

The most effective herbicide system for broad spectrum weed control in soybeans combines pre-plant burndown and/or pre-emergence (PRE) residual herbicides to control early emerging weeds, protect yield potential, and keep weeds small for an early post-emergence (POST) herbicide application. The best way to manage volunteer canola is to start clean with a pre-plant burndown tank mix, a residual herbicide, and if needed, an in-crop herbicide application to manage the next flush of volunteer canola.

Several herbicide groups can be used in soybeans to help manage volunteer canola (Table 1). Herbicides in Groups 2, 6, and 14 may be used PRE or POST to control volunteer glyphosate-resistant canola. Refer to the current North Dakota Weed Control Guide - W253 for herbicide effectiveness ratings and control options, as well as state and local recommendations.7

**Best Management Practices for Volunteer Canola**

- Reduce canola harvest losses
- Don’t till, or delay tillage after spring canola harvest
- Plant competitive rotational crops where diverse herbicide sites of action can be used
- Remove volunteer canola early with pre-plant burndown herbicides, PRE residual herbicides, and early POST herbicides
- Control volunteer canola before it reaches the 4-leaf growth stage
- Use proper spray coverage, particularly when using contact herbicides

Weed management solutions and recommendations are available at www.roundupreadyPLUS.com.

**Table 1. Herbicides for glyphosate-resistant volunteer canola control* in soybean.**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Herbicides</th>
<th>Herbicide Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burndown</td>
<td>2,4-D LVE, saflufenacil</td>
<td>4,14</td>
</tr>
<tr>
<td>Burndown + PRE</td>
<td>2,4-D LVE + flumioxazin, saflufenacil + imazethapyr</td>
<td>4 + 14, 14 + 2</td>
</tr>
<tr>
<td>Early POST*</td>
<td>imazamox</td>
<td>2</td>
</tr>
</tbody>
</table>

*Canola less than 4-leaf growth stage.

Consult individual product labels for use instructions, restrictions, and crop planting intervals.

Sources: Product labels and North Dakota Weed Control Guide - W253.6

For additional information, contact your local seed representative. Developed in partnership with Technology, Development & Agronomy by Monsanto.

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**Sources**


* 2017 Monsanto Systems Trials (27 locations in 2017 reporting yield data. Significant at P ≤ 0.05 LSD of 0.16 bu/ac data as of November 13, 2017. Roundup Ready® Xtend® Crop System data = Roundup Ready 2 Xtend® soybeans treated with dicamba, glyphosate and various residual herbicides. LibertyLink® system data = LibertyLink® soybeans treated with Liberty® herbicide and various residual herbicides. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indication of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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