Volunteer canola can compete with rotational crops to limit yield potential. Research has shown that volunteer canola can reduce wheat and barley yield potential substantially, depending on the density of volunteer plants. Volunteer canola can be a host for blackleg, clubroot, or flea beetle as well as other diseases which can reduce effectiveness of crop rotation for disease and insect management.

Seed Persistence and Dormancy
Canola seed can persist in the soil for as long as 6 years. However, the majority of volunteer canola plants emerge the year following a canola crop and much of the seedbank can be depleted after two years if additional seed is not added. A canola plant can produce about 1,500 seeds. Seed dormancy is reduced if seed remains on the soil surface exposed to weather and predator degradation. Canola seed can be induced into secondary dormancy when subjected to dark and dry conditions. Tillage may promote secondary dormancy by incorporating seed into the soil, inducing a secondary dormancy and increasing the potential persistence of canola seed. It may be beneficial to postpone fall tillage to avoid burying seeds to help limit the induction of secondary seed dormancy.

Managing Harvest Losses
Managing harvest seed losses is a primary factor for limiting the intensity of volunteer canola. Average seed loss at harvest has been found to be about 90 lb/acre. Swathing canola at the optimum stage of ripening can help reduce harvest losses. To assess the seed color change (SCC) in the field, begin inspecting fields about 10 days after flowering ends and continue inspecting every 2 to 3 days until it’s time to swath. Sample at least 5 plants in several field locations. The optimum time to swath is up to an average of 60% SCC on the main stem. Seeds in the bottom third of the stem should be black (Figure 1). Seeds in the middle third should be mostly brown or tan and seeds in the top third should be green but firm. Canola SCC will typically increase about 10% every 2 to 3 days.

Seeds in all pods on the plant reach physiological maturity (seed filling complete) at 40% moisture. Seed will turn from green to yellow to reddish brown, brown, or black depending on the canola product. After seed filling is complete, seeds lose moisture rapidly at about 2 to 3% moisture per day.

Adjust the cutting height of the swathing equipment 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 save time and improve seed quality. Canola products with good shatter tolerant can help minimize harvest losses. Straight combing can result in pre-harvest pod shattering and combine shattering losses of 8 to 54%. Proper timing of cutting is critical to reduce losses. Canola is ready to combine when seed moisture is less than 10%. A pre-harvest desiccant, such as diquat herbicide, may help condition the crop for harvest, particularly in fields with uneven maturity. Diquat should be applied when 60 to 75% SCC is reached. Diquat has a 7 day pre-harvest interval and harvest should occur no later than 14 days after application. Consult product labels for specific instructions.
Volunteer Canola Emergence Patterns

Most volunteer canola will emerge during the fall or spring after canola harvest such that reducing harvest losses combined with effective early season weed control in the next crop can keep volunteer canola infestations low.

Begin scouting for volunteer canola early in the spring when daytime temperatures begin to warm up. Volunteer canola requires a minimal accumulation of growing degree days (GDD) for germination. University of Manitoba research shows that volunteer canola emergence time occurs within a short timeframe, with 75% emergence occurring after approximately 159 GDD (base 41° F). These results emphasize the need to encourage volunteer canola emergence prior to planting and use early season weed management tactics to limit the potential impact on crop yield potential, minimize canola infestations, and keep the soil seedbank low.

Herbicide Recommendations

Recommendations for control of glyphosate-tolerant volunteer canola in glyphosate-tolerant soybeans include tillage near planting time or a burndown herbicide. If Sharpen® is used as a burndown application in soybean, Group 14/Group E herbicides labeled for post-emergence (POST) application in soybean may be used 14 days or more after soybean emergence to avoid potential crop injury. Soil applied, residual herbicides should be used preplant or pre-emergence (PRE) to control early emerging weeds. Consult product labels for use precautions and restrictions. Early POST applications of Roundup PowerMAX®, Herbicide should be tank mixed with Raptor® for volunteer canola. Consult the Raptor Technical Information Bulletin for specific use instructions for volunteer canola.

Table 1. Herbicide Recommendations for Volunteer Glyphosate-tolerant Canola in Genuity® Roundup Ready 2 Yield® Soybeans and Roundup Ready® Soybeans.

<table>
<thead>
<tr>
<th>Practice</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burndown</td>
<td>2,4-D ester, Sharpen®</td>
</tr>
<tr>
<td>Early POST*</td>
<td>Roundup PowerMAX®, Herbicide + Raptor®</td>
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<tr>
<td></td>
<td>Canola less than 4 leaf growth stage</td>
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In-crop herbicides should be applied prior to the 4-leaf growth stage of canola because taller plants with thicker, waxy cuticles, or plants that are bolting are more difficult to control.

Volunteer canola can be managed effectively in many crops, particularly small grains and corn. 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 for herbicide effectiveness ratings and control options.

For weed management solutions and recommendations, visit www.RoundupReadyPLUS.com.

Sources:

Web sources verified 9/16/2016.