Control of Volunteer Glyphosate-Tolerant Canola In Soybeans

Donna Fleury, P.Ag.

Soybean growers in Saskatchewan have a number of weed issues to manage, but the number one weed concern is Roundup Ready® (RR) or glyphosate-tolerant volunteer canola, particularly in RR soybean systems.

Researchers Dr. Chris Willenborg and Eric Johnson with the Weed Research Program at the University of Saskatchewan (U of S) have conducted several chemical control trials comparing pre- and post-emergent treatments and in combination with various products for control of RR volunteer canola. From their research, the recommendations are to use a pre-emergent followed by an in-crop post-emergent herbicide to get the most consistent control of RR volunteer canola. Growers should consider using chemistries with multiple modes of action when dealing with RR canola volunteers in RR soybeans. This is not just about resistance management, it is also about emergence timing of volunteer canola and controlling multiple flushes of the volunteer population.

Volunteer canola is very competitive with soybeans, so early season weed control is very important. Control volunteer canola when it is young and small, waiting for in-crop control can result in very large canola plants that are much more difficult to control. Post-emergent herbicides may only set back larger volunteer canola plants, resulting in regrowth and possible constraints at harvest.

Growers should select products registered for use in soybeans in Saskatchewan and follow label directions to reduce the risk of crop injury.

Check and follow labels for pre-seeding restrictions. For example, 2,4-D should be applied seven days prior to seeding, and an ester formulation is recommended rather than an amide formulation. For products such as CleanStart®, using the higher application rate is recommended. Another pre-emergent technology that could be used for in-crop, in season control of volunteer canola control is Sencor® and trifluralin, however the products have to be incorporated, which may not fit some systems.

Roundup Ready® Xtend Soybean System

In one-year project conducted in 2016, U of S student Anique Josuttes evaluated the Roundup Ready® Xtend soybean system and weed control with post-emergent applications of XtendiMax® or Engenia™, for several weeds including kochia, wild mustard, cleavers, and RR volunteer canola. This Xtend soybean system is tolerant to both dicamba and glyphosate, providing another option for managing glyphosate resistant weeds. The results showed that for RR volunteer canola control the dicamba and glyphosate combination, even at highest recommended rates applied to the soybeans post-emergent, provided suppression only. There may be a tank-mix that could provide good RR volunteer canola control, but research has not yet been done. However, the dicamba and glyphosate combination did provide very effective control for managing glyphosate-resistant kochia.

Table 1. Pre-emergent herbicides that are registered to be tank-mixed with glyphosate in soybeans in Saskatchewan

- Blackhawk®
- CleanStart®
- Express®
- Heat®
- Valterra™
- 2,4-D

Table 2. Post-emergent herbicides registered for volunteer canola control in soybeans in Saskatchewan

- Basagran®
- Odyssey®
- Pinnacle®
- Viper® ADV
Glyphosate-resistant kochia is not yet widespread, however it could be a problem in the future for soybean growers and this product may help delay resistance if used properly.

Manufacturer recommendations for dicamba applications in Western Canada are that the dicamba products be applied either pre-seed or early post-emergent to reduce the risk of drift onto sensitive crops. Pre-seed applications at the high rate have been shown to provide some residual broadleaf control.

Herbicides applied in soybeans should be selected to meet the needs of the weeds in the field. Where volunteer canola is a concern, consider using both pre- and post-emergent weed management strategies, and incorporating herbicides that are labelled for canola control.

Figure 1. Xtend soybean trial at the 300 g ai/ha rate of Xtendimax® (low registered rate).
Source: Anique Josuttes, University of Saskatchewan

Figure 2. Xtend soybean trial at the 600 g ai/ha rate of Xtendimax® (high registered rate).
Source: Anique Josuttes, University of Saskatchewan