



Managing Volunteer Corn in Soybeans

by Jim Anderson, CCA-ON

Full corn harvest can be a real challenge with some of the wet and windy conditions Mother Nature can throw at you. Hybrids vary in standability and ear retention, and disease may factor in causing plants to die prematurely, resulting in stalk lodging and corn ear losses. Volunteer corn the following year can cause a number of problems in a corn-soybean rotation. The kernels overwinter and germinate in your next crop and the genetic traits are carried over into those fields making it more difficult to control.

For the most part, controlling volunteer corn with Group 1 site of action herbicides has been a very successful solution in the past. With new genetic modifications in corn hybrid varieties, the herbicide choices are not always as clear cut for controlling v. corn. There now is a need to understand certain interactions within the chemical families and the active ingredient selected.

The site of action Group 1 (ACCASE inhibitors) have two chemical families within this group of herbicides that are labelled to control volunteer corn. When you look at a product label, you will see the product name and the active ingredient name. The active ingredient ends in either a “fop”, such as fluzafop or quizalofop for example, or a “dim” such as clethodim or Sethoxydim. These actives in short are either falling into the chemical family of a “fop” or a “dim”. Even though they are the same site of action, the chemical families act differently under certain conditions.

“Dims” generally do not like hard water and require specific labelled adjuvants to maximize performance. “Dims” are strongly antagonized if tank mixed with broadleaf herbicides, and many do not have any recommended broadleaf herbicide tank mix partners. Antagonism results in a loss of grass control. The “dims” will control volunteer corn with the ENLIST™ trait.

The chemical family of the “fops” have their own set of challenges. They too show some grass antagonism when tank mixed, but not as strongly as the “dims”. There are certain broadleaf herbicide tank mixes allowed on the labels, but when it comes to the very low rates labelled for v. corn control, it is not advisable to tank mix due to this antagonism. The “fops” do not control volunteer corn with the ENLIST trait.

Both the “fops” and the “dims” will work on Roundup® Ready, LibertyLink® and Roundup Ready 2 Xtend® soybean varieties. For a complete list, consult Table 12-4 in Publication 75A Guide to Weed Control, Field Crops.

Other considerations:

Group 1 herbicides do not perform well with coarse spray droplet size nozzles. Surface contact to the leaf surface is key for control, as there is little to no residual control. A low volume, air induction, coarse droplet type nozzle, that works perfect for drift control with glyphosate, is not the best choice for a Group 1. A flat fan type nozzle with medium and fine droplet size is a better choice for a Group 1, as it reaches more surface area of an upright v. corn plant. Using the recommended adjuvant on the label can improve coverage and uptake dramatically. As these products rely on leaf uptake, at least one hour of drying before a rain is needed. You can minimize offsite drift by avoiding early morning or night time spraying as there is less risk of dead calm and higher humidity that favours drift conditions. The active ingredient must also move to the growing point within the plant to be effective. Avoid applying after a heavy frost for three days and do not cultivate for at least five days for best movement in the plant.

Best results come from targeting the 3 to 5 leaf stage of v. corn. Group 1 herbicides are highly active on corn and low rates perform quite well when applied at the right time on a small plant. Timing application up to the third trifoliolate of soybeans will keep residues under the maximum residue limit established for the crop. Always consult the individual product label for complete use directions and application information.

The newer corn hybrids produce higher yields, but also generate more stalk residue. For example, a 180 bushel per acre yield can leave approximately 10,000 pounds of crop residue per acre. How you manage crop residue at harvest, by spreading as evenly as possible, will improve your results in managing even crop emergence and weed control the following year. If you are going to till, fall tillage may improve your success in controlling v. corn by getting some to germinate or rot before spring.



For copies of this article and a complete catalogue of previously published columns, check our website www.ccaontario.com under the “Communications” tab.



Jim Anderson is a Certified Crop Advisor, recently retired from Syngenta Canada Inc. as an Agronomic Service Representative, Horticulture in Eastern Canada. Jim can be reached at jim.m.anderson@outlook.com

There are over 600 Certified Crop Advisers (CCA) in Ontario. Each CCA has demonstrated their knowledge about Ontario crop production by passing the required exams and achieving international competency standards as set by the International CCA Program. In addition, they have the crop advisory experience, the education, the commitment to continuing education and have signed a comprehensive code of ethics, which places the grower's interests first.

This industry driven program helps ensure that Ontario crop producers are well served by those providing their crop production advice. This article was written by one of those CCA's.