



5 Simple Rules for Herbicide-Resistant Canada Fleabane Management in Soybeans

by Ken Currah, CCA-ON, RMS



Canada Fleabane is a winter annual and has very different emergence characteristics compared to the usual spectrum of annual weeds that we are used to having to deal with in our fields. Soil temperatures $>14\text{C}$ are optimum for weed emergence (Tozzi *et al*, 2014), and germination slows once soil and air temperatures consistently remain above 25C . This means that peak germination mainly occurs in the “shoulder months” of the spring and fall seasons (although it can emerge every month of the year given proper conditions). It also emerges as a rosette, offering a significant amount of plant biomass in the early growth stages, which raises a challenge for both herbicidal or mechanical weed control.

For newly established rosette-stage plants with <20 leaves or <4 ” wide, control is easily obtained with an effective mix of herbicides. However, we often observe diminished weed control as plant size further increases; this is proven in both industry and third-party research, and reflected on some herbicide product labels. As the rosette grows it will eventually develop a heavy crown with upright leaves, indicating that it is about to bolt. Bolted fleabane is very difficult to control and the larger weed size places significant selection pressure on herbicides in terms of resistance management.

Soil-applied herbicides are key. Once the soybeans emerge, you may not have a control option.

With an aggressive weed such as Canada Fleabane, the best control timing is at weed germination and emergence. This forces a mind-shift away from “plant the crop, kill the weeds once emerged” thinking, and puts the sprayer in the field at planting time for properly timed pre-plant or pre-emergent herbicide applications.

For conventional or IP soybean growers, it’s imperative that herbicides go down prior to soybean emergence. There are no satisfactory options for control in-crop.

In *Xtend* and *EnList* herbicide-tolerant soybean production systems, two-pass programs that include new-formulation dicamba or 2,4-D products, in addition to other effective herbicides may provide an excellent option. It is imperative that only registered products be used for these applications

and that all product label considerations and restrictions are strictly adhered to.

Understand what weed “control” really means.

When evaluating herbicide performance, a rating over 90% weed removal generally can be considered “control” of the species. Be wary of herbicide options or recommendations for products that offer 80-90% control. At $<90\%$ control, you are not winning the war on seed bank replenishment and you also may risk the need for pre-harvest burndowns as a harvest aid. *Pre-Harvest Desiccation is not weed control*. Pre-harvest burndowns will not kill mature, woody fleabane plants that have gone to seed.

However, there are many fields where herbicide options are limited, such as metribuzin on low organic matter soils. In these situations it may be prudent to utilize a lower-rated herbicide in conjunction with other effective herbicidal modes of action in order to achieve adequate results.

Utilize Multiple Effective Modes of Herbicidal Action

A common mistake is to add a singular replacement herbicide with labeled control of Canada Fleabane to the program, such as adding either saflufenacil or 2,4-D to glyphosate in the burndown pass. Doing so places significant selection pressure on the new and currently-effective herbicide and is a poor resistance management approach. There is ample research to show that a tank-mix of multiple herbicides with effective activity on the target weed species is a key tactic to manage the threat of future resistance development.

There are several herbicide options to consider when constructing a powerful program for Canada Fleabane control in your fields. Although these tank-mixes increase weed control costs, they are almost always a less expensive and far more effective approach to weed control than the marginal results often achieved by later season post-emergent “rescue” applications or pre-harvest burndowns.

Between herbicide options, tillage, crop rotation, cover crops, and other production practices, growers and agronomists have enough tools available to manage and prevent resistant weeds. It is important to implement a comprehensive Integrated Resistance Management strategy on your farm to manage and prevent resistance.

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Ken Currah is an AgSolutions Retail Representative with BASF Canada Inc. covering the north shore of Lake Erie from St. Thomas to Niagara Falls. He obtained his CCA certification in 2009 and his Resistance Management specialty certification in 2019.

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