

## No Silver Bullet When it Comes to Herbicide Resistant Weeds

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by Tim Kalinowski



*Farmers in Alberta and Saskatchewan are encountering more and more herbicide resistant weeds in their crops every year, forcing them to adapt new strategies for weed control.*

*File Photo: Australian farmers have much greater problems with herbicide resistance, and have resorted to pre-chemical technology in many instances to combat the problem, such as a tow behind hammer-mill system.*

different practices to use such as higher water volumes to get more coverage, and the low drip nozzles actually aren't great with contact herbicides, and, equipment-wise, that's what everybody has moved to.

"So you have all these different types of herbicides and all these different types of nozzles; and we see different approaches are starting to conflict with one another."

Coles gives an example to show this point.

"To me, HEAT is a good example. HEAT is a combination of glyphosate and a contact herbicide. In a pre-HEAT scenario you have all these little tiny weeds and those low drip nozzles to deal with them while at the same time you are dealing with your Round-Up ready canola.

"So now you are relying on a high coverage scenario, and you wonder why you didn't get a good control. You have to sort of change your management practices to account for that to get your full benefit."

Once you get the proper mix and rate of spray figured out, (well mostly anyway), Coles says it's time for good management practices to take centre stage.

"In one of our studies we looked at time of day effects on herbicide efficacy. To me that's so important when dealing with hard-to-kill weeds, really large infestations or herbicide resistance. What we were finding is you have to pay attention to the weather weed or crop has been subjected to, and whether that stress will impact the job the herbicide does."

Too early in the morning and the plants will be dormant, and too late in the afternoon, with all the heat factors involved, their circulation systems will be shut down, says Coles. Same result: Ineffective kills, perpetuation of herbicide resistance and more money and time wasted in the field.

"Generally speaking, when you spray you want to do it at a time when the weeds are actively growing and not stressed," he says. "What we found is first thing in the morning is the least consistent results..."

With spring seeding drawing closer in southern Alberta, now is the time of preparation where farmers get their machines ready to take to the field to begin the spring "burn down." As all farmers know, choosing the right spray is incredibly important, and it has never been more complicated, says Ken Coles, general manager of Farming Smarter.

"It's becoming more complicated to figure what to do with the pre-seed burn down" he says. "You have to consider how to mix other products with the glyphosate; especially when you throw all the different canolas in there.

"So if you had Round-Up ready canola the year before, you have to think about how you are going to manage those volunteers the year after, on top of all the herbicide resistance."

Tank mixes, and their associated difficulties, are the new norm for most farmers, says Coles.

"Glyphosate has probably become the most complicated herbicide out there. First of all, it is complicated on its own with the different practices, and now you are trying to throw in all the different modes of action, and different tank mixes.

"And to throw another twist to it, some of these tank mix products are not compatible on the spray side of things."

Coles explains further.

"There is basically two different types of products; one is systemic and one is a contact herbicide. A contact one actually has to hit the leaf to do the killing. With contact herbicide there is actually

“A lot of us have been brought up with the notion we should get up early and spray to beat the wind. However, by doing that, we saw as much as a 20 per cent reduction in weed control.

“Basically, we found the best time to spray is in the middle of the day. Depending on weather, conditions and time of year, that time frame between ten and two is likely ideal for most situations.”

Coles also says chemicals can't solve every problem. The days of the “silver bullet” approach are over.

“Really good, competitive crops are really important for weed control. Higher seeding rates will help with that, and good crop competition; so good agronomy in general, side banding fertilizer as opposed to broadcasting fertilizer for example so you are helping the crop and not the weeds.

“There are just tons of different practices that can be employed. It's about finding the right balance... We need to be doing a better job of adapting our management practices to keep our herbicides working for us as long as we can.”

Coles says Canadian farmers only need to look to Australia to see what's coming if we don't adjust our management practices to compliment our spraying with good agronomy.

“They have now gotten to the point where they are building hammer-mill types of machines on the back of their combines to destroy weed seeds,” states Coles. “They are windrowing their crops and burning it to manage their weeds.

And they are even going back to hand-weeding in some cases.

“It's scary,” he continues, “and it's what we will face if we can't adjust our practices to better manage for herbicide resistance. We definitely need to heed the call to action the industry is putting out there.

“Farmers need to consider and integrated approach and do a little bit more investigation into outcomes.”