

Does the time of day matter when applying herbicides

Burn-down trials suggest applying herbicides at dawn may be less effective

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The test plot on the left was sprayed with Carfentrazone at noon, while the side on the right was sprayed at dawn. Photo: Farming Smarter

Have you ever evaluated your weed control and come across confusing differences between fields? Perhaps they were even sprayed on the same day with the same chemical?

The good news is you might not be crazy. Well, at least not more than normal.

We just rated our burn-down trials for a third year where we sprayed glyphosate and three tank mix partners at noon, midnight and early dawn.

I have to admit that starting out I didn't expect to see any differences. Having worked in research for many years, I know companies are very good at registering products that perform well in as many conditions as possible. It just makes good sense.

But the verdict is, time of day can impact weed control more than you might think. For the most part, there isn't too much to worry about, but we may have an opportunity to fine tune our spray timing especially in more difficult situations such as with hard-to-kill, larger weeds or dense infestations.

We still need to collect weed biomass data this season and spend some time analyzing the results, but we're seeing some trends that might be valuable. Since early weed control has proven to be important in protecting yield, it may impact your bottom line and help keep a few more weeds from setting seed in your fields. The clearest trend so far is that spraying at the crack of dawn led to the poorest control in most cases. This was especially true for glyphosate alone and with the tank mix partner CleanStart, (Carfentrazone). Most farmers would likely not see these differences when spraying entire fields but with small plots we can evaluate differences side by side. Carfentrazone is a contact herbicide and like Liberty, it is best sprayed midday (see photo at top).

Understandably, it's most important to get the job done with narrow windows to get fields sprayed and seeded. But, it's also important to get things done right. Honestly, high-clearance and high-speed sprayers, GPS guidance, and low-drift nozzles have drastically improved spraying capacity and flexibility.

The next challenge for us is to determine what's causing the differences that we are seeing. It seems likely temperature and relative humidity relationships are playing a significant role, as well as light intensity. The early-morning applications tend to occur at the coolest part of the day when relative humidity is the highest. Other studies have also shown that leaf orientation to the sun can play a role with certain weed species.

We'll explore this further with our in-crop studies in peas, canola and wheat. But remember, in this case the early bird doesn't get the worm. So you might as well catch a few more winks!