

Fleabane in Fallows

In recent years flaxleaf fleabane (*Conyza bonariensis*) has become one of the most persistent and difficult to control weeds in the northern no-till fallow. Its weediness has been exacerbated by its moderate tolerance to glyphosate. Only the smallest plants, growing in good conditions, are killed by glyphosate alone. Once plants are established, even the use of high rates of glyphosate in combination with Surpass® often allow a few plants to survive and set massive amounts of seed. Individual plants are capable of producing over 100,000 seeds. To be fully effective, fleabane control strategies should be timed to prevent the use of stored soil moisture *and* prevent all plants from setting seed.

In research jointly funded by the Cotton CRC, CRDC, GRDC and the Weed CRC, weeds researcher with the QDPI&F, Jeff Werth, evaluated the double-knock spray technique that is being used successfully in the southern states to manage herbicide resistant ryegrass. The basis of the technique is to apply a systemic herbicide, allow sufficient time for the weeds to fully translocate the product, then come back and apply a contact product that will desiccate all the above ground material, leaving the systemic product to completely kill the root system.

In October 2006, an on-farm trial was conducted west of Dalby at "Myola" to compare nine double knockdown strategies with an application of Roundup CT® alone. In the double-knock treatments, Roundup CT® or a tank mix of Roundup CT® and Surpass® was followed 7, 14 or 21 days later by Spray.Seed®. Conditions were very dry, with no rain falling during the trial. The field had originally been destined for dryland cotton, but a lack of planting moisture saw it being fallowed in hope of a late sorghum opportunity. Fleabane was germinating on the dews and establishing on minimal soil moisture. Farm manager, Scott Reichelt, commented "It is very easy to miss germinations, you need to be constantly checking, the fact that it hasn't rained doesn't mean the paddock won't need spraying."

The treatment details and results are presented in Table 1. In commenting on trial results, Jeff Werth said; "Roundup CT® followed by Spray.Seed® provided good control - but as the interval between treatments increased, the level of control decreased. The addition of Surpass® improved control, but again - the longer interval between sprays reduced control. The rate of Spray.Seed® used was also a factor – with better results at the higher rate tested. For resistance reasons, it will be important to use robust rates of Spray.Seed® to minimise the likelihood of resistance developing."

This trial suggests that the double knock strategy may have a useful role in controlling fleabane in northern no-till fallows. Further work is planned to look at the impact of even shorter intervals between applications. Scott has used the double-knock technique on "Myola" and is extremely

happy with the results. Though, like most farmers, he has adjusted the rates and timing to suit his situation and budget. "Three years ago, fleabane wasn't even a weed problem, and it certainly didn't dictate what we used or when. Now we have fallow sprays that are specifically aimed at its control. These are straight out additional costs to our operation."

Table 1: Performance of double-knock treatments on 6-10 leaf (7-8 cm wide) fleabane growing west of Dalby, Oct 2006. The % Control was assessed 28 days after the initial Roundup CT application, or 7 days after the treatments in which the 'follow-up treatment' was applied 21 days after the 'initial treatment'.

Initial treatment	Days	Follow-up treatment	% Control
Roundup CT® 2 L/ha		na	55
Roundup CT® 2 L/ha	7	Spray.Seed® 1.6 L/ha	96
Roundup CT® 2 L/ha	14	Spray.Seed® 1.6 L/ha	96
Roundup CT® 2 L/ha	21	Spray.Seed® 1.6 L/ha	88
Roundup CT® 2 L/ha + Surpass® 1.5 L/ha	7	Spray.Seed® 1.6 L/ha	100
Roundup CT® 2 L/ha + Surpass® 1.5 L/ha	14	Spray.Seed® 1.6 L/ha	100
Roundup CT® 2 L/ha + Surpass® 1.5 L/ha	21	Spray.Seed® 1.6 L/ha	96
Roundup CT® 2 L/ha + Surpass® 1.5 L/ha	7	Spray.Seed® 2.4 L/ha	100
Roundup CT® 2 L/ha + Surpass® 1.5 L/ha	14	Spray.Seed® 2.4 L/ha	100
Roundup CT® 2 L/ha + Surpass® 1.5 L/ha	21	Spray.Seed® 2.4 L/ha	100

If using Spray.Seed® in a double knockdown strategy, it is important that it is NOT applied using the same sprayer settings used for the initial glyphosate treatment. Spray.Seed® is poorly translocated and requires much higher levels of droplet coverage than are needed for glyphosate. This means carrier volumes need to be in the range 75-100L/ha. Nozzle selection has to suit the need for greater coverage and the rig needs to operate in the range of pressures and travel speeds that suit the performance of these nozzles.

Operators also need to be mindful of the drift risks associated with the use of a 2,4-D product in a double-knock. Even though Surpass® has low volatility relative to ester formulations, drift can occur and will damage susceptible crops like cotton and legumes. The suitability of weather conditions should always be monitored before and during spray applications. Inadvertent crop damage can also occur if spray equipment is not thoroughly decontaminated according to label instructions after the application. There are also plant back restrictions to many crops following the use of 2,4-D amine.

For further information about the trial, or plans for future research in evaluating fleabane control options, contact: Jeff Werth 07 4639 8851, jeff.werth@dpi.qld.gov.au. Thankyou to Bill Adams, Sygenta for assistance in preparing this Cotton Tale. For more information about Spray.Seed®, please contact Bill on 0418 407 334.