



Evaluation of a 'systems' approach control of Flaxleaf Fleabane (*Conzya bonariensis*)

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In the spring of 2006 a commercial demonstration was conducted to evaluate the 'lower cost' measures for control of mature Flaxleaf fleabane, *Conzya bonariensis*.

A threshold of \$30/ha was imposed on the treatments which was suggested as an affordable means to control the weed. This threshold also allows the evaluation of the 'double knock' tactic as an alternate control method. The objective of the experiment was to investigate the knockdown capability of various products, and various 'systems' type approaches the control of the weed including the use of residual herbicides, mechanical control, crop competition, and the 'double knock' approach to herbicide application.

Anecdotal evidence from the field had indicated that herbicide mixtures including 2-4D applied commercially had been amongst the most successful for controlling the pest weed. In addition there had been some commercially acceptable control of Fleabane with residual products such as Diuron, Atrazine, and glean.

Due to a perceived understanding and belief by many landholders that specific commercial applications of herbicide alone are generally not repeatable (they work in one field well, but not in another) the demonstration of the efficacy in control of fleabane populations using mechanical treatments was also included. These practices included cultivation via trashworker and cultivation using offset discs to mimic control practices that many farmers have been using to reduce Fleabane populations. It was also the intention of the trial to investigate and compare the competitive capabilities of 3 different crops, millet, barley, and chickpeas to out compete with Fleabane populations. However, the extraordinarily dry season prevented the crops from being planted, so the demonstration became an evaluation of the knockdown capability of the applied products and mechanical measures only.

Results

No.	Name	Whole Plot Control	% Brownout	% Biomass Reduction
1	Atrazine @ 2 kg/ha + Sprayseed @ 1.5 L/ha + BS1000 @ 0.2 %V/V	59.8 b	53.8	53.8 c
2	Amicide @ 2 L/ha + Oil @ 2 %V/V	86.3 a	85.0	86.3 ab
3	Amicide @ 2 L/ha + Oil @ 2 %V/V followed by Glean @ 25 g/ha + Sprayseed @ 1.5 L/ha + BS1000 @ 0.2 %V/V	100.0 a	100.0	100.0 a
4	Amitrole T @ 5 L/ha	79.8 ab	77.5	77.5 abc
5	Diuron @ 2 kg/ha followed by Sprayseed @ 1.5 L/ha + BS1000 @ 0.2 %V/V	59.5 b	55.0	58.8 bc
6	Amicide @ 2 L/ha + Oil @ 2 %V/V followed by Sprayseed @ 1.5 L/ha + BS1000 @ 0.2 %V/V (to be sown with millet)	100.0 a	100.0	100.0 a
7	Amicide @ 2 L/ha + Oil @ 2 %V/V (to sown with sorghum in banded Atrazine)	98.8 a	97.5	98.8 a
8	Cultivated with trashworker	79.8 ab	67.5	80.0 abc
9	Cultivated with offsets	87.5 a	85.0	87.5 ab
10	Amicide @ 2 L/ha + Oil @ 2 %V/V followed by Sprayseed @ 1.5 L/ha + BS1000 @ 0.2 %V/V (to be sown with winter cereal)	93.8 a	80.0	92.5 a
11	Amicide @ 2 L/ha + Oil @ 2 %V/V followed by Sprayseed @ 1.5 L/ha + BS1000 @ 0.2 %V/V (to be sown with a pulse)	100.0 a	100.0	100.0 a
<i>p</i> value		0.062	0.142	0.047
LSD (P=0.05)		-	38.96	31.91
LSD (P=0.10)		25.29	-	-

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P (F) is significant at mean comparison OSL

Interestingly, the 3 “double knock’ treatments showed close to 100% control of Fleabane. More specifically, 2 L/ha Amicide 625 plus 2 % Caltex DC Trate ,followed by 1.5 L/ha Sprayseed 10 days later on plants with up to 8 true leaves, (with some more mature plants at stem elongation , and flowering) controlled the healthy fleabane population. All other treatments, including Amicide showed similar levels of control. The residuals herbicides, Diuron and Atrazine; both applied as a knockdown with Sprayseed showed significantly less knockdown control than the other chemical treatments. Contrary to anecdotal evidence and some scientific experiments cultivation with trashworker and the application of 5L/ha Amitrole were also trending lower levels of control than that of the other treatments.

Due to the extremely dry conditions, evaluation of the 'systems' control of fleabane was abandoned and maybe continued given the right seasonal conditions in the future. Despite the efficacy of the double knock tactic, other control methods still need to be evaluated and a systems approach to the long term control of Fleabane is required.

Conclusions

Despite a significant proportion of the trial being abandoned, the double knock tactic using Amicide and Sprayseed appears to be a very effective method of controlling Fleabane. In spite of the repeated use of cultivation by many farmers to control Fleabane, it appears that it's ability to control populations of the pest weed are limited and should not be relied upon for full control including that of future populations generating from the seedbank.

Regardless of the apparent efficacy of the double-knock tactic, a 'systems' approach to the control of Fleabane still needs to be explored to reduce the pressure on chemical groups and subsequent development of herbicide resistance.