Herbicide control of summer weeds

David Scholz, Manager – Agronomist, Elders - Scholz Rural,
Clare Johnston, R&D Coordinator, Liebe Group

Aim

To evaluate the economic benefit and effectiveness of different herbicide treatments on a mixture of summer grasses and melons.

Background

Herbicide control of summer weeds is a common practice for reducing water and nutrient usage by non-crop related plants as well as minimising the risk of blockages at seeding due to weed residues. This stored soil moisture results in more water being available later in the season where it can then be used by the crop, improving yield potential. This benefit was apparent in season 2012 where below average winter rain was supplemented by the moisture from the previous summer rain.

Weeds in trial include:

- Afghan melons vining & flowering (dominant)
- Love grass / Kerosene grass fully tillered (dominant)
- Mint weed
- Caltrop
- Roly poly
- Tarvine
- Burr grass
- Afghan thistle

Trial Details

Property	Rowan & Jordi McCreery, Kalannie
Plot size & replication	10m x 10m x 4 replications
Soil type	Sandy loam with ironstone at depth
Soil pH ($CaCl_2$)	0-10: 6.0 10-20: 4.7 20-40: 4.4
EC	0.119
Paddock rotation	2009 pasture, 2010 wheat, 2011 pasture
Herbicides	Sprayed dawn 24/1/12: As per treatment protocol

Treatments

1. Control – untreated
2. 0.6 L/ha Roundup Attack (Glyphosate 570)
3. 1.2 L/ha Roundup Attack
4. 1.8 L/ha Roundup Attack
5. 1.2 L/ha Roundup Attack, 100 mL/ha Garlon
6. 1.2 L/ha Roundup Attack, 5 g/ha Ally
7. 1.2 L/ha Roundup Attack, 500 mL/ha Ester 680
8. 100 mL/ Garlon (Triclopyr 600)
9. 5 g/ha Ally (Metsulfuron – Methyl 600)
10. 500 mL/ha Ester 680 (2,4-D Ester 680)

The treatments were designed to explore what the standalone rate of glyphosate 570 is for control of summer grasses (and by default, melons) and how effective are the “spikes” of triclopyr, 2,4-D ester & metsulfuron in controlling afghan melons.

Results

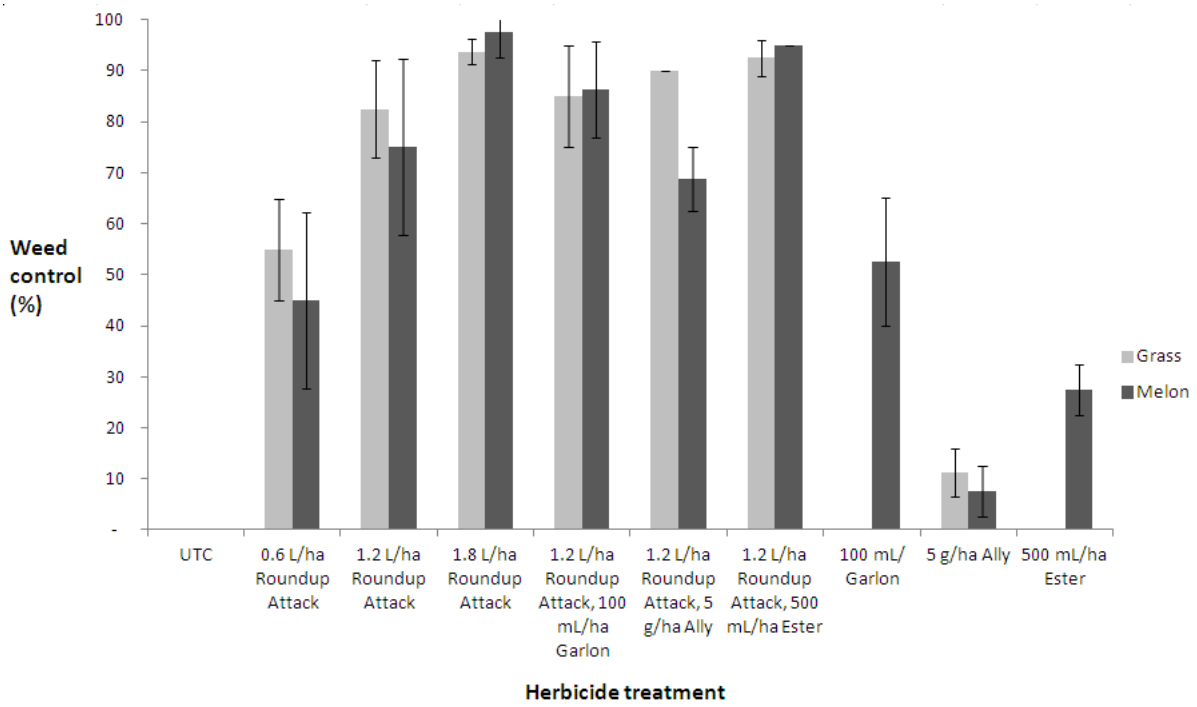

Figure 1: Weed control of different herbicide treatments, 0% = no control, 100% = no survivors. Measurements of control of grass weeds and Afghan melons on 9/2/12, 2 weeks after application (2WAA).

Economic Analysis

Table 1: Cost per hectare for each treatment and subsequent control of grass and melon 2WAA.

Treatment	Cost ($/ha)	Weed Control (%) Grass	Weed Control (%) Melon
Untreated Control	$0	0	0
0.6 L/ha Roundup Attack	$3.96	55	45
1.2 L/ha Roundup Attack	$7.92	83	75
1.8 L/ha Roundup Attack	$11.88	94	98
1.2 L/ha Roundup Attack, 100 mL/ha Garlon	$9.72	85	86
1.2 L/ha Roundup Attack, 5 g/ha Ally	$8.52	90	69
1.2 L/ha Roundup Attack, 500 mL/ha Ester 680	$12.54	93	95
100 mL/ Garlon	$1.80	0	53
5 g/ha Ally	$0.60	11	8
500 mL/ha Ester 680	$4.50	0	28

Comments

Moisture: Ironstone was found across some plots at depth which made any plot response to weed control difficult to measure so that there was more difference due to sub-soil constraints, rather than the individual treatments. Moisture readings were inconsistent and yields were therefore not taken.

Weed control: Glyphosate is a very important base component when dealing with a mixture of summer weeds. The trial confirmed previous growers who experience and demonstrated summer grasses required high rates of glyphosate, at these high rates glyphosate provides excellent melon control. The Roundup Attack at 1.8 L/ha stand-alone gave the best control of grass and melons. All mixes containing Roundup Attack at 1.2 L/ha gave acceptable control of grasses and excellent control of melons when ester was added. With melons, the Triclopyr standalone was poor, but with Roundup Attack added had an additive

effect, improving control significantly. Whilst no oil was used, perhaps the performance of the bottom three mixes may have given a better result with oil. Ally (metsulfuron) had an additive effect with the grasses but was antagonistic with the melons.

Acknowledgements
The Liebe Group for use of their sprayer, McCreery's for the use of the paddock and help.

Paper reviewed by: Bill Campbell, Nufarm

Contact
Clare Johnston, Liebe Group
clare@liebegroup.org.au
(08) 9661 0570