



Target 100% Weed Control - Glyphosate Resistant Annual Ryegrass Trial

TECH NOTE

Targeting 100% weed control.

WHY PRODUCT CHOICE MATTERS

A key focus of Sinochem is to assist growers in improving weed control so they can achieve better outcomes in the short and long-term. Sinochem is investing heavily in on-farm and laboratory research to determine the best products and techniques to target 100% weed control.



INDEPENDENT RESEARCH

Sinochem commissioned Dr Peter Boutsalis, Plant Science Consulting, Adelaide, SA, to investigate the bioefficiency of two glyphosate formulations, Roundup ULTRA® MAX and a glyphosate 540 g/L formulation in controlling susceptible and glyphosate-resistant ryegrass biotypes.

Annual ryegrass used in the trial included cultivars with strong glyphosate resistance, cultivars with weak glyphosate resistance and cultivars that were fully susceptible to glyphosate.

METHODOLOGY

Seedlings were sown 10 plants per pot and product was applied at the 3 leaf stage in a spray volume of 100 L/ha. Biomass reduction and plant survival were measured 28 days after treatment.

To ensure similar activity to field conditions the plants were grown outdoors and sprayed in a spray cabinet with a twin boom using agricultural nozzles at a water rate and pressure similar to farmer spray equipment.

RESULTS



Figure 1 - Glyphosate resistant biotype (weak) pot treated with Roundup ULTRA®MAX (left) and generic Glyphosate 540 g/L (right). Both at 800g ai/ha.

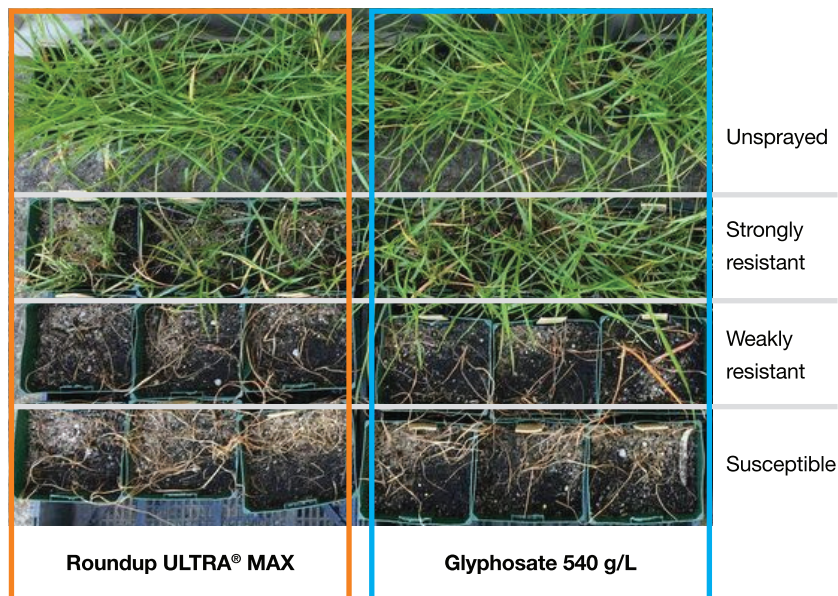


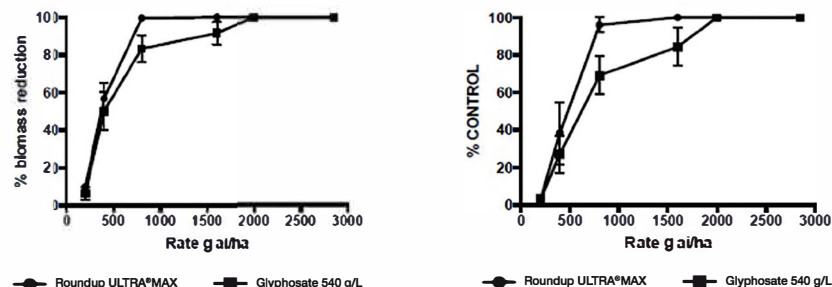
Figure 2 - Three different biotypes of annual ryegrass treated with Roundup ULTRA® MAX (Left) and Glyphosate 540 g/L (Right). Both at 800g ai/ha.

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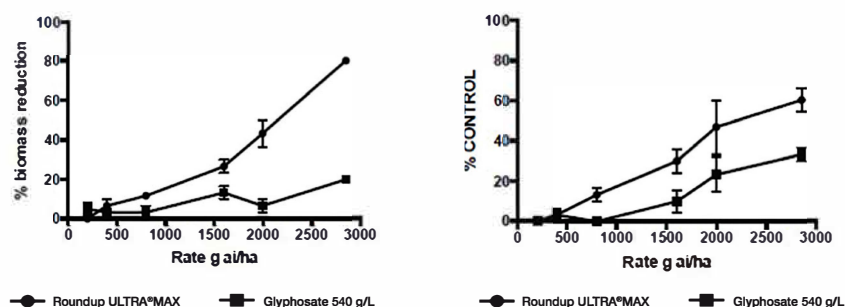
RESULTS

Weak glyphosate resistance



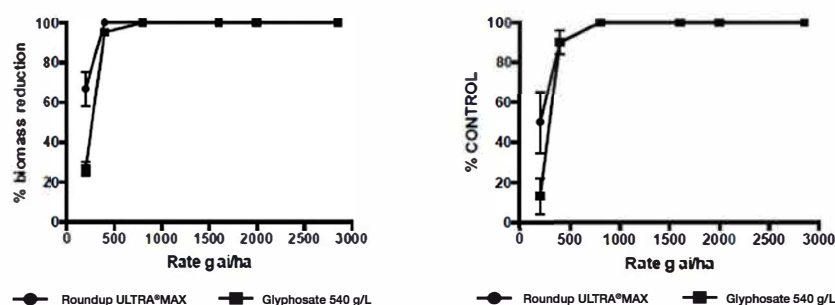
At equivalent intermediate rates (800 and 1600g ai/ha) Roundup ULTRA[®] MAX resulted in significantly greater biomass reduction and control. Complete control at 1995g ai/ha was achieved with both formulations. These results suggest that on ryegrass with weak resistance, common in the initial stages of resistance development, using a product such as Roundup ULTRA[®] MAX with optimised surfactants can result in greater control and therefore delay the onset of resistance.

Strong glyphosate resistance



The highest rate of 2850g ai/ha failed to completely control this biotype. However, Roundup ULTRA[®] MAX caused significantly greater biomass reduction and control than the alternative Glyphosate 540 g/L product at equivalent rates.

Susceptible ryegrass



At rates above 400g ai/ha susceptible ryegrass was controlled. However, at 200g ai/ha the control and biomass reduction with Roundup ULTRA[®] MAX was significantly greater than Glyphosate 540 g/L. This indicates that under sub-optimal conditions, where efficacy could be reduced, using a product such as Roundup ULTRA[®] MAX will ensure greater weed control than less effective glyphosate formulations.

CONCLUSION

Dr. Peter Boutsalis of Plant Science Consulting concluded that, "Roundup ULTRA[®] MAX exhibited superior control at lower – intermediate rates on susceptible and glyphosate resistant ryegrass biotypes compared to a Glyphosate 540 g/L formulation."

BENEFIT FOR GROWERS

Growers are often required to apply herbicide under sub-optimal conditions where efficacy can be reduced. Higher application rates and the superior and proven formulation of Roundup ULTRA[®] MAX provide additional control under more challenging conditions.

There is also the concern about resistant ryegrass (of varied glyphosate susceptibility) being present. Resistance can be overcome, to some degree, by increasing herbicide application rates and using a better quality formulation to increase the speed of uptake and translocation.

ROUNDUP ULTRA[®] MAX

A powerful 570 g/L glyphosate formulation, Roundup ULTRA[®] MAX offers advanced performance and flexibility. It contains Transorb II technology - a powerful and proprietary surfactant system which allows faster plant uptake and translocation, to give unmatched rainfastness and time to sowing. When targeting 100% weed control Roundup ULTRA[®] MAX is at the forefront of herbicide technology.



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