FINAL REPORT

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

ARM8

Demonstration of Control Strategies for Herbicide Resistant Wild Radish in Wheat & Lupins

PROJECT DETAILS

PROJECT CODE:	ARM8
PROJECT TITLE:	DEMONSTRATION OF CONTROL STRATEGIES FOR HERBICIDE RESISTANT WILD RADISH IN WHEAT & LUPINS
START DATE:	01.07.1996
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Summary

Herbicide resistance in broadleaf weeds such as Wild Radish (*Raphanus raphanistrum*) looms as one of the next significant problems in temperate cropping regions of Australia. Wild Radish currently affects up to 60% of the Western Australian cropping regions and with the development of resistant populations, which appear to show no geographical boundaries, could become a significant limitation to grain production. With the likelihood that a number of other broadleaf weeds have the potential to develop resistance it is conceivable that all cropping areas in Western Australia may be affected to some extent

Grower awareness of this problem has also increased significantly and the use of broadleaf weed resistance testing while not common place has increased. The laboratory' test results to date have shown extensive Wild Radish resistance to Group B herbicides in WA, that is the Sulfonylureas and ALS chemical group. A strong correlation between the incidence of resistance and extended Group B herbicide use exists at most of these site. Resistance to other chemical groups has not yet been detected in broadleaf weeds in WA.

The evaluation of herbicide tank mixture applications to manage broadleaf resistant weeds and to delay its development has displayed good potential. All mixtures of commonly used broadleaf herbicides gave equivalent or better weed control and yield results when compared to the industries standard standalone herbicide applications. The only mixtures that failed to

perform were the Group B applications with a mixing partner when the site already exhibited Group B herbicide resistance and when the mixing partner was not in sufficient quantity to control the weeds present by itself.

These results suggest that the use of tank mixes (multiple modes of action, multiple chemical groups) will provide an excellent management tool to control resistant populations and assist in reducing the development of broadleaf weed herbicide resistance. The use of resistance testing and the recognition of broadleaf resistant weed development will remain crucial, as the chemicals mixed or used will still need to be adjusted according to the resistance status present.

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