

## Industry perspectives of annual grass management and control in Australian agriculture

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### Introduction

In this review, I propose to consider four aspects relating to the control and management of annual grasses.

These are:

- Registration/efficacy consideration and requirements,
- Resistance management,
- Trade consideration,
- Potential.

### Registration

In reviewing the registrations for the priority grasses, there is currently a range of herbicides registered for their control in crops and pastures, with the majority being members of Group A; a group with a high risk of resistance. (Source: The Australian Directory of Registered Pesticides and Their Uses, 14th Edition)

It is interesting to note that there is only one herbicide, simazine, registered for use for the control of *Vulpia* (*Vulpia* spp.). The post-emergent herbicides registered are (with one exception) all members of Group A. From an efficacy and resistance management point of view, this is a concern. Herbicides from other groups are applied pre-sowing or pre-emergence, which tend to be less effective, more expensive and usually only applicable to situations where pastures are being established.

Researchers and extension personnel sometimes overlook the fact that it is essential that registration of that use is a requirement and if changes to the current registered use pattern are proposed, then the prime registrant should be involved in these decisions. Similarly with new herbicides, it is even more important to ensure that the compound is going to be developed in Australia.

In both crop and pasture situations, plant residues, plant-back periods and withholding periods are a critical requirement which often are not considered when recommendations and use patterns are being developed.

### Resistance management

This is the area of most concern to industry because the priority grasses can be present in both crops and pastures. In addition, the high number of Group A herbicides registered for use in this situation adds to the concern. In a crop/pasture or a

cereal/legume rotation, it is possible that herbicides from the same group could be used in both situations, thus increasing the selection pressure and the risk of resistance developing. This needs to be recognised at all levels. In addition, with annual ryegrass (*Lolium rigidum* Gaudin), an important weed of crops and pastures, its ability to have resistance to Group A herbicides and be cross-resistant to other groups further complicates the situation. This emphasises the need for resistance testing.

These factors increase the need for the adoption of integrated weed management strategies and industry which supports the use of spray-topping, crop-topping and other techniques designed to reduce seed set and weed numbers. Within the area of research and extension, it is necessary for personnel working in the field of grass control in crops and pastures to be aware of the potential resistance risks if an integrated program is not considered from the outset.

### Trade

Following the chlorfluazuron beef contamination issue, the possible impact that pesticides can have on Australia's trade is now a major consideration. In crops and pastures which are grazed either as a routine procedure, i.e. pastures, as a failed crop, or where harvested grain is fed to animals, the potential for residues being present in these parts must be assessed and measured.

If residues of the parent compound or its metabolite are present, then the potential for the pesticide to accumulate in animal tissues must be established. This is determined by animal transfer studies which are complex and costly to conduct.

### Potential

Because of the costs associated with the development of herbicides, and particularly with the ever increasing registration requirements, not all new compounds which could/may have application will be developed in Australia. It is necessary that there is sufficient potential to cover the costs associated with the development. In most organizations, the plateau sales potential for the product determines whether development is justified. This

market, i.e. the crop and pasture market, offers a significant potential in Australia with total sales in the order of \$100 million.

Industry fully supports the use of herbicides for the control of annual grasses in crop and pasture situations, but suggest that those working in these areas either as researchers or extension personnel, need to be cognisant of industries' requirements and advise the prime registrant of plans and proposals so that the relevant aspects and needs are recognised and taken into account from the outset.