

GROUP	1	HERBICIDE
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## High resistance risk

Globally, herbicide resistance to Group 1 herbicides have been confirmed and documented in more than 50 grass weed species across more than 40 countries. Group 1 resistance is extensive and prolific with tens of millions of hectares affected, in fact it is the second most likely herbicide mode of action to develop resistance with only the Group 2 mode of action more likely.

Group 1 resistance commonly exists across wide areas of Australia in the grass weed species including more than 30,000 populations of annual ryegrass, annual veldt grass, more than 5,000 populations of wild oats, phalaris, more than 200 populations of brome grass, crabgrass, crowsfoot grass and more than 200 populations of barley grass. Resistance has developed in broadacre and golf courses, rice, horticulture, pastures, and bushland reserves situations.

Research has shown that as few as 6 applications to the same population of annual ryegrass can result in the selection of resistant individuals. A population can go from a small area of resistant individuals to a whole paddock failure in one season.

1. FOPs, DIMs and DENs are Group 1 herbicides and carry the same high resistance risk.
2. Where a Group 1 herbicide has been used on a particular paddock for control of any grass weed, avoid using a Group 1 herbicide to control the same grass weed in the following season, irrespective of the performance it gave.
3. Frequent application of Group 1 herbicides to dense weed populations is the worst-case scenario for rapidly selecting for resistance.
4. Where resistance to a member of Group 1 is suspected or known to exist, there is a strong possibility of cross resistance to other Group 1 and O herbicides. Therefore, use other control methods and herbicides of other mode of action groups in a future integrated approach.
5. Specific recommendations are available for CoAXium® Production System; Quisalofofop-p-ethyl tolerant cereals, which are available from Sipcam: <https://www.coaxium.com.au/>.

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The above recommendations should be incorporated into an Integrated Weed Management (IWM) program. In all cases try to ensure surviving weeds from any treatment do not set and shed viable seed. Keep to integrated strategies mentioned in this brochure including cultural weed control techniques to reduce the weed seedbank. Make sure you mix and rotate herbicides from different mode of action groups. Always consult the product label prior to use.

*Continued on next page.*

### Please note:

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Chemical family	Active constituent (first registered trade name)
<b>GROUP 1</b>	
<b>Inhibition of acetyl co-enzyme A carboxylase (/ACC'ase inhibitors)</b>	
Aryloxyphenoxypropionates (FOPs)	clodinafop (Topik®), cyhalofop (Agixa®*, Barnstorm®), diclofop (Cheetah® Gold* Decision®*), fenoxaprop (Cheetah®, Gold*, Wildcat®), fluazifop (Fusilade® RoundupFNG Weedkiller®), haloxyfop (Verdict®), propaquizafop (Shogun®), quizalofop (Targa®)
Cyclohexanediones (DIMs)	butroxydim (Factor®*), clethodim (Select®, Zero Triple ActionGarden Weedkiller®), profoxydim (Aura®), sethoxydim (Cheetah® Gold*, Decision®*), tralkoxydim (Achieve®)
Phenylpyrazoles (DENS)	pinoxaden (Axial®)

\* This product contains more than one active constituent.

#### Notes:

List of chemical families, approved active constituents and, in parenthesis, the trade name of the first registered product or successor. Refer to the APVMA website ([www.apvma.gov.au](http://www.apvma.gov.au)) to obtain a complete list of registered products from the PUBCRIS database.

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