GROUP	4	HERBICIDE

Moderate resistance risk

Globally herbicide resistance to the Group 4 herbicide mode of action has been confirmed and documented in more than 40 grass and broadleaf weed species across more than 20 countries. Resistance to the Group 4 mode of action is common.

Group 4 resistance exists in Australia in 7 weed species including capeweed, winged slender thistle, more than 50 populations of common sow thistle, more than 1,000 populations of wild radish and more than 50 populations of Indian hedge mustard. Resistance has occurred after a long history of use of Group 4 herbicides. The number of populations with Group 4 resistance is increasing.

Of particular concern is the resistance in wild radish, which is the most important broadleaf weed in broadacre agriculture. Some populations may also have resistance to other modes of action e.g. Group 12 herbicides which can be important for control of wild radish in lupins where other selective non-Group 4 options are limited. Because of the long soil life of wild radish seed, measures to reduce seed return to the soil would be useful for this weed. Wild radish seed that is confined to the top 5 cm soil has a shorter life than seed buried deeper.

As a general rule in high resistance risk situations:

1. Avoid: applying 2 applications of Group 4 herbicides alone onto the same population of weeds in the same season. To assist in delaying the onset of Group 4 resistance, rotate and/or tank mix with herbicides from other modes of action.
2. Where possible combine more than one mode of action in a single application. Each product should be applied at rates sufficient for control of the target weed alone to reduce the likelihood of weeds resistant to the Group 4 herbicide surviving.

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.

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Chemical family	Active constituent (first registered trade name)
GROUP 4 Disruptors of plant cell growth (Auxin mimics)	
Benzoates	dicamba (Banvel®, Banvel M®*, Barrel®*, Casper®*, Lawnweeder plus®*, Lawn weedkiller*, Mecoban®, Methar Tri-Kombi®*, Nuturf Millennium®*, Sandoban®*)
Phenoxy-carboxylates (Phenoxys)	2,4-D (Actril DS®*, Amicide®, Fallow Boss Tordon®*, Methar Tri-Kombi®*, Pyresta®*, Vortex®*), 2,4-DB (Trifolamine®), dichlorprop (Lantana 600®), MCPA (Agtryne® MA*, Banvel M®*, Barrel®*, Basagran® M60*, Buctril® MA*, Buffalo Pro Weedkiller®*, Condor*®, Flight®*, Lawnweeder plus®*, Lawn Weedkiller*, Midas®*, Paragon®*, Precept®*, Quadrant®*, Silverado®*, Spearhead®*, Thistrol Gold*®, Tigrex®*, Tordon 242®*, Triathlon®*, Zero Triple Action Garden Weedkiller ®), MCPB (Legumine®, Thistrol Gold*®), mecoprop (Mecoban®, Mecopropamine®, Methar Tri Kombi®*, Multiweed®*)
Pyridine carboxylates (Pyridines)	aminocyclopyrachlor (Method®), aminopyralid (Fallow Boss Tordon®*, ForageMax®*, Grazon Extra®*, Grindstone®, Hotshot®*, Stinger®*, Vigilant II®*), clopyralid (Lontrel®, Nuturf Millennium®*, Spearhead®*, Trimac Plus®*, Velmac Plus®*) , florpyrauxifen (Agixa®*, Ubeniq®), halauxifen (ForageMax®*, Paradigm®*, Pixxaro®*, Rexade®*), picloram (Fallow Boss Tordon®*, Grazon Extra®*, Tordon®, Tordon 242®*, Tordon Regrowth Master®*, Trinoc®*, Vigilant II®*)
Quinoline-carboxylates	quinclorac (Drive®)
Pyridyloxy-carboxylates	fluroxypyr (Crest®*, Hotshot®*, Monsoon®*, Pixxaro®*, Roundup FNG Weedkiller®, Roundup PNG Weedkiller®, Starane®), triclopyr (Garlon®, Grazon Extra®*, Tordon Regrowth Master®*, Tough Roundup® Weedkiller*, Ultimate Brushweed®* Herbicide)

* *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) to obtain a complete list of registered products from the PUBCRIS database.