

## LIST OF HERBICIDE RESISTANT WEEDS IN AUSTRALIA

(valid as at 28 September 2011)

Resistance has been confirmed to at least one herbicide mode of action group in Australia in the following weeds:

GRASS WEEDS	GROUPS	SITES
Annual ryegrass ( <i>Lolium rigidum</i> )	A	>20,000
Annual ryegrass ( <i>Lolium rigidum</i> )	B	>10,000
Annual ryegrass ( <i>Lolium rigidum</i> )	C	>50
Annual ryegrass ( <i>Lolium rigidum</i> )	D	>500
Annual ryegrass ( <i>Lolium rigidum</i> )	Q	3
Annual ryegrass ( <i>Lolium rigidum</i> )	M	>100
Annual ryegrass ( <i>Lolium rigidum</i> )	L	3
Awnless Barnyard grass ( <i>Echinochloa colona</i> )	M	19
Barnyard grass ( <i>Echinochloa crus-galli</i> )	C	1
Barley grass ( <i>Hordeum leporinum</i> )	A	14
Barley grass ( <i>Hordeum leporinum</i> )	L	>50
Brome grass ( <i>Bromus</i> spp.)	A	>50
Brome grass ( <i>Bromus</i> spp.)	B	6
Giant Parramatta grass ( <i>Sporobolus fertilis</i> )	J	6
Goosegrass ( <i>Eleusine indica</i> )	A	1
Large crab grass ( <i>Digitaria sanguinalis</i> )	A	2
Large crab grass ( <i>Digitaria sanguinalis</i> )	B	1
Liverseed grass ( <i>Urochloa panicoides</i> )	C	7
Liverseed grass ( <i>Urochloa panicoides</i> )	M	3
Northern barley grass ( <i>Hordeum glaucum</i> )	A	1
Northern barley grass ( <i>Hordeum glaucum</i> )	B	4
Northern barley grass ( <i>Hordeum glaucum</i> )	L	>50
Paradoxa grass ( <i>Phalaris paradoxa</i> )	A	3
Serrated tussock ( <i>Nassella trichotoma</i> )	J	2
Silver grass ( <i>Vulpia bromoides</i> )	C	1
Silver grass ( <i>Vulpia bromoides</i> )	L	1
Wild oat ( <i>Avena</i> spp.)	A	>1000
Wild oat ( <i>Avena</i> spp.)	B	5
Wild oat ( <i>Avena</i> spp.)	Z	>100
Windmill grass ( <i>Chloris truncata</i> )	M	2
Winter grass ( <i>Poa annua</i> )	Z	1

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BROADLEAF WEEDS	GROUPS	SITES
African turnip weed ( <i>Sisymbrium thellungii</i> )	B	2
Arrowhead ( <i>Sagittaria montevidensis</i> )	B	20
Bedstraw ( <i>Galium aparine</i> )	B	3
Black bindweed ( <i>Fallopia convolvulus</i> )	B	2
Calomba daisy ( <i>Pentzia suffruticosa</i> )	B	2
Capeweed ( <i>Arctotheca calendula</i> )	L	1
Charlock ( <i>Sinapis arvensis</i> )	B	1
Common sowthistle ( <i>Sonchus oleraceus</i> )	B	>1000
Dense-flowered fumitory ( <i>Fumaria densiflora</i> )	D	2
Dirty dora ( <i>Cyperus difformis</i> )	B	>50
Flaxleaf Fleabane ( <i>Conyza bonariensis</i> )	M	8
Iceplant ( <i>Mesembryanthemum crystallinum</i> )	B	2
Indian hedge mustard ( <i>Sisymbrium orientale</i> )	B	>1000
Indian hedge mustard ( <i>Sisymbrium orientale</i> )	I	12
Lincoln weed ( <i>Diplotaxis tenuifolia</i> )	B	20
Paterson's curse ( <i>Echium plantagineum</i> )	B	2
Prickly lettuce ( <i>Lactuca serriola</i> )	B	>1000
Square weed ( <i>Mitracarpus hirtus</i> )	L	1
Starfruit ( <i>Damasonium minus</i> )	B	5
Stinging nettle ( <i>Urtica urens</i> )	C	1
Turnip weed ( <i>Rapistrum rugosum</i> )	B	1
Wild radish ( <i>Raphanus raphanistrum</i> )	B	>100
Wild radish ( <i>Raphanus raphanistrum</i> )	C	4
Wild radish ( <i>Raphanus raphanistrum</i> )	F	6
Wild radish ( <i>Raphanus raphanistrum</i> )	I	>50
Wild turnip ( <i>Brassica tournefortii</i> )	B	3

CropLife acknowledges the assistance of Dr Chris Preston (University of Adelaide) in compiling this list. If you suspect a case of herbicide resistance that is not on this list please notify Dr Preston at [christopher.preston@adelaide.edu.au](mailto:christopher.preston@adelaide.edu.au) so that he can maintain a register of herbicide resistance in Australia

For further information on controlling Fleabane and Windmill grass, please refer to the Australian Glyphosate Sustainability Working Group Website – [www.glyphosateresistance.org.au](http://www.glyphosateresistance.org.au)

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## INTEGRATED WEED MANAGEMENT STRATEGIES

Strategies are designed to prevent and/or reduce the occurrence of resistance by adopting Integrated Weed Management (IWM) strategies. Do not rely on a single strategy to keep resistance at bay but integrate them into the crop production program. Some of the key strategies are: -

- Refer to specific CropLife Herbicide Resistance Management Strategy guidelines for each herbicide mode of action group.
- Rotation of herbicide mode of action groups within and across years.
- **Keep accurate records of your herbicide applications on a paddock basis.**
- Read the herbicide product label and literature carefully and follow the instructions.
- Always use robust label rates.
- Rotation of crop and variety.
- Identify and monitor your surviving weed populations and check for resistant weeds on your farm. Keep good records of weed populations.
- Additional cultural weed control techniques to reduce seed banks, e.g. burning, cultivation, delayed sowing, competitive crops and varieties, green manuring, grazing and collection of weed seed at harvest.
- Control weed escapes before the weeds set and shed viable seed.
- Do not introduce or spread weeds by contaminated seed, grain or hay.
- Crop and pasture topping.
- Attend training courses, eg. GRDC IWM course, *ChemCert* and field days.
- Additional information can be obtained from: [CropLife Australia](http://www.croplifeaustralia.org.au) ([www.croplifeaustralia.org.au](http://www.croplifeaustralia.org.au)), [Australian Glyphosate Sustainability Working Group](http://www.glyphosateresistance.org.au) ([www.glyphosateresistance.org.au](http://www.glyphosateresistance.org.au)), [Grains Research & Development Corporation](http://www.grdc.com.au) ([www.grdc.com.au](http://www.grdc.com.au)) and state government departmental publications.

### Weed control options for IWM

	<i>Herbicidal</i>	<i>Non-herbicidal</i>
<b><i>Crop phase</i></b>	<ul style="list-style-type: none"> <li>- Crop topping in pulse/legume crops</li> <li>- Knockdown herbicides e.g. double knock strategy before sowing</li> <li>- Selective herbicides before &amp;/or after sowing – but ensure escapes don't set seed</li> <li>- Utilising moderate resistance risk herbicides</li> </ul>	<ul style="list-style-type: none"> <li>- Rotate crops</li> <li>- Rotate varieties</li> <li>- Grow a dense and competitive crop</li> <li>- Cultivation</li> <li>- Green/brown manure crops</li> <li>- Delay sowing</li> <li>- Cut crops for hay</li> <li>- Burn stubbles/windrows</li> <li>- Collect weed seeds at harvest</li> </ul>
<b><i>Pasture phase</i></b>	<ul style="list-style-type: none"> <li>- Spray topping</li> <li>- Winter cleaning</li> <li>- Selective herbicides – but ensure escapes don't set seed</li> </ul>	<ul style="list-style-type: none"> <li>- Good pasture competition</li> <li>- Hay making or silage</li> <li>- Cultivated fallow</li> <li>- Grazing</li> </ul>

Keep yourself informed and be pro-active in the fight-back against resistance. For further information on resistance management strategies, consult your reseller agronomist, farm consultant or Departmental Agronomist.

Specific guidelines for resistance management in rice are established by the Rice Weed Management Working Group eg. Rice Notes. Contact your local Departmental Rice agronomist for details. There are also specific guidelines for Clearfield<sup>®</sup>, Roundup Ready<sup>®</sup> and Liberty Link<sup>®</sup> Crop Management Plans and Integrated Weed Management for Triazine Tolerant Canola (refer to manufacturing companies).

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