

<b>Name of research project:</b>	Surveillance of herbicide resistant weeds in Australian grain cropping and Innovative crop weed control for northern region cropping systems (the two projects are complimentary)
<b>Research organisation(s):</b>	QDAF, CSU, UWA, UA
<b>GRDC Project code:</b>	UCS00024 and US00084
<b>Key contacts:</b>	<p>Michael Widderick (QDAF) – 07 4529 1325, <a href="mailto:Michael.widderick@daf.qld.gov.au">Michael.widderick@daf.qld.gov.au</a></p> <p>Bhagirath Chauhan (UQ)</p> <p>John Broster (CSU) – Project leader</p>
<b>Project objectives:</b>	<p>This project will conduct regional surveys across the northern, southern and western regions to deliver information about the extent of herbicide resistance in key weeds, changes in resistance patterns over time and identify potential emerging resistance threats.</p> <p>Summarised results on resistance status and mapping information will be delivered to growers, agronomists, consultants and industry through GRDC updates, media articles, AHRI insights, and in peer-reviewed journals throughout the project.</p>
<b>Project period:</b> Start and finish dates	01/07/2015 – 30/06/2020
<b>Project outcomes and status:</b>	<p>QDAF and CSU are working together to survey the northern region (Qld and NSW respectively). The project will deliver the extent of herbicide resistances to growers and industry, enabling better informed management and research decisions.</p> <p>A winter crop survey was carried out in Nov/December 2016. Approximately 180 paddocks were surveyed in Qld (not sure how many in NSW?). QDAF will conduct their summer crop survey during Feb/March 2017. Following these collections, testing will begin on key weed species including common sowthistle, flaxleaf fleabane, barnyard grass, windmill grass, liverseed grass and feathertop Rhodes grass (all tested in Toowoomba) and wild oats, annual ryegrass and brassicas (tested in Wagga Wagga).</p> <p>Please see the attached table to see which MOAs will be included in the herbicide resistance testing.</p>

<b>Links</b> to any relevant websites or specific documents you feel are relevant and may be of interest.	Not yet.
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**Table 1.** Weed species to be collected during the random summer and winter crop surveys and the herbicides with which these populations will be screened.

Winter crop weeds	Screened by	Collection location and herbicides to be screened	
		New project: regions and herbicides screened	Existing project UCS00024: regions and herbicide screening
Annual ryegrass ( <i>Lolium rigidum</i> )	CSU	Added zones of NE NSW and SE QLD, NW NSW and SW QLD and Central QLD. Same herbicides as existing project	Southern New South Wales only. Glyphosate, diclofop, clethodim, sulfometuron, imazamox/imazapyr, trifluralin, prosulfocarb, pyroxasulfone
Wild oats ( <i>Avena</i> spp.)	CSU	Added zones of NE NSW and SE QLD, NW NSW and SW QLD and Central QLD. Same herbicides as existing project	Southern New South Wales only. Glyphosate, clodinafop, clethodim, idosulfuron
Sowthistle ( <i>Sonchus oleraceus</i> )	UQ	Added zones of NE NSW and SE QLD, NW NSW and SW QLD and Central QLD. Same herbicides as existing project plus pyrasulfatole/bromoxynil	Glyphosate, chlorsulfuron, 2,4-D
Turnip weed ( <i>Rapistrum rugosum</i> )	CSU	Glyphosate, chlorsulfuron, diflufenican, atrazine, 2,4-D amine, pyrasulfatole/bromoxynil	
Wild radish ( <i>Raphanus raphanistrum</i> )	CSU	Additional herbicide pyrasulfatole/bromoxynil	Glyphosate, chlorsulfuron, imazamox/imazapyr, diflufenican, atrazine, 2,4-D amine
African turnip weed ( <i>Sisymbrium thellungi</i> )	CSU	Glyphosate, chlorsulfuron, imazamox/imazapyr, diflufenican, atrazine, 2,4-D amine, pyrasulfatole/bromoxynil	
Indian hedge mustard ( <i>Sisymbrium orientale</i> )	CSU	Additional herbicide pyrasulfatole/bromoxynil	Glyphosate, chlorsulfuron, imazamox/imazapyr, diflufenican, atrazine, 2,4-D amine

<b>Summer crop weeds</b>			
Barnyard grass ( <i>Echinochloa</i> spp.)	UQ	Additional zones of NSW central, NSW slopes  Plus imazapic	Glyphosate, propaquizafop, clethodim,
Feathertop Rhodes grass ( <i>Chloris virgata</i> )	UQ	Additional herbicides glyphosate, clethodim	Haloxyfop, paraquat
Liverseed grass ( <i>Urochloa panicoides</i> )	UQ	Glyphosate, propaquizafop, clethodim, imazapic	
Windmill grass ( <i>Chloris truncata</i> )	UQ	Glyphosate, propaquizafop, clethodim, imazapic	
Fleabane ( <i>Conyza bonariensis</i> )	UQ	Additional herbicides, Glyphosate	2,4-D