

Survey of Glyphosate Resistance in Common Sowthistle (QDAF) 2014-16

Background:

Common sowthistle is widely distributed in the northern cropping region and can be found in fallow paddocks at most times of the year. Consequently it is a weed species frequently exposed to fallow sprays and poses a significant risk for selection of glyphosate resistance.

A regional survey was commenced in spring 2014 to provide baseline data on the glyphosate resistance status of common sowthistle in the northern region. The project is being managed by Annie van der Meulen, DAF Toowoomba with sowthistle seed samples collected via a number of pathways including the networks of GOA, NGA and the CQGS group.

Method:

Dose response experiments, conducted at the Leslie Research Facility in Toowoomba, showed that in pot tests conducted under “ideal” conditions, application of a 660 mL/ha rate of a commercial 540 g ai/L glyphosate formulation to sowthistle with five or less true leaves clearly discriminates between resistant and susceptible populations. Interestingly this is equivalent to the upper label rate for the control of sowthistle at this seedling growth stage.

In the testing, plants are sprayed at the two-to-four leaf stage and herbicide efficacy is assessed 21 days after treatment (DAT). Plants are considered survivors if the growing point (centre of the rosette) is green and/or if new leaves are present. A population is deemed “resistant” if more than 20% of the plants survived the glyphosate treatment, or “susceptible” if less than 20% of the plants survived.



Glyphosate resistant sowthistle seedlings reshooting at 21 DAT.

Key Interim Results (to June 2015):

- A total of 40 sowthistle populations have been tested to date with a similar number currently being evaluated
- **8 of these populations have been classified as glyphosate resistant**
- **All new resistant populations have been sourced from the Liverpool Plains**

Geographical coverage to date:

The map below shows the current survey coverage with good numbers of samples received from areas around Dubbo, the Liverpool Plains to Goondiwindi, the Eastern Darling Downs and in CQ.

More samples are welcomed from all areas but particularly from areas to help fill the gaps e.g. Central Qld, Maranoa and the Western Darling Downs.

Key points:

- Random survey – not just where glyphosate resistance is suspected eg spray failure
- Each sample should be from a separate property
- Turnaround time now about 60 days
- Samples will continue to be accepted until Autumn 2016



Map showing survey coverage to June 2015.

**For more details or to become involved in sample collection,
please contact**

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