

# focus on **Weeds**

## Windmill grass (*Chloris truncata*)

### What makes windmill grass difficult to control?

- This summer-dominant grass is highly tolerant to glyphosate (Group M). There are confirmed glyphosate-resistant populations in Australian cotton farming systems.
- It is a prolific seed producer (up to 20,000 seeds per plant).
- Germination occurs throughout spring, summer and autumn; peak emergence coincides with rains in September–October.
- Zero till has coincided with an increase in windmill grass populations.
- Seed is dispersed by wind as spikelets which can break off the plant and blow around
- Maximum germination is seven months after seed maturity, but up to 30 percent of seeds can germinate immediately after maturity, ie: there appears to be limited seed dormancy
- Herbicide application in water-stressed conditions provides poor control.
- Large plants are very difficult to control with post-emergent herbicides.
- This weed persists in non-cropping areas, untreated paddocks or roadsides and panicles can blow back into treated paddocks.
- Plants can also be perennial with large root systems, making them harder to control.

### Management strategies, what are the weak links?

- Seed persistence is short-lived (up to 12 months)
- Seedlings emerge from shallow depths (0–2 cm)
- Stopping seed set for 12–24 months can greatly deplete the soil seed bank.
- The double-knock tactic can be effective on this weed, when applied at early stages.
- Targeted tillage to bury seeds is a viable option for control, especially when managing patches.
- Crop competition strategies; narrow rows, increased seeding rates.

In weed surveys conducted throughout cotton farming

valleys high levels of glyphosate resistance have been detected.

Table 1. Glyphosate resistance status, Windmill grass

	2015-16	2016-17	2017-18
Percentage resistance	90	45	45

### Herbicide control in crop

- Use high water rates to ensure good coverage
- Increase herbicide rates if targeting mature or stressed plants
- Currently there are only a few herbicides registered for controlling windmill grass:
  - Factor® (butoxydim) and Dacthal 900® (chlorthal-Dimethyl) in cropping fields and
  - Trimac® (Terbacil plus sulfometuron) in rights of ways, fencelines, around buildings and non-agricultural areas.

### Control options in fallow

- Cover crops: Touchdown Hi-Tech®
- APVMA permit:
  - Per13460. Windmill grass control in summer fallow Quizalofop – P-ethyl (Leopard®, Quinella 100EC®, Elantra®)
  - Per11163. Optical spray technologies, various herbicides

### Further reading:

- QDAF Northern Integrated Weed Management Factsheet: <https://qaafi.uq.edu.au/files/5958/Windmill-grass-ecology-and-management.pdf>
- University of Adelaide. Windmill grass - biology: <https://sciences.adelaide.edu.au/agriculture-food-wine/system/files/docs/2017-wmg-biology.pdf>
- NSW DPI. Getting on top of fleabane and windmill grass: [https://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0018/431271/Getting-on-top-of-fleabane-and-windmill-grass.pdf](https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0018/431271/Getting-on-top-of-fleabane-and-windmill-grass.pdf)