

Feathertop Rhodes grass – is it the beginning of the end?

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AT A GLANCE...

- Feathertop Rhodes (FTR) grass (*Chloris virgata*) is emerging as one of the biggest weed threats in Australia and challenges the 'farming system' as we currently know it.
- It produces thousands of seeds, which spread through several means.
- Employing different chemical and non-chemical tactics are needed to combat this problematic weed species.
- Prevention is the best control measure.

NO-TILL and conservation agriculture systems are common in Australia with environmental and sustainability advantages leading to much-improved soil erosion control, increased fallow efficiency, increased water use efficiency, reduced labour requirement, lower costs of operation, reduced machinery inventory, and other benefits compared to conventional farming systems.

But weeds are a major biotic constraint in conservation farming agricultural systems.

The presence of Feathertop Rhodes (FTR) – a grass weed species – in cropland and pastures is probably the biggest threat to no-till farming in the northern region of Australia (Queensland and NSW). It is very difficult to control with herbicides –



Small FTR grass seedlings in a fallow paddock.

knockdown, residual or both.

The following traits make FTR grass a problematic weed:

- It is a prolific seeder and has been shown to adapt to management. A single plant of FTR grass can produce over 40,000 seeds.
- It germinates at temperatures common in winter and summer. Recently, we observed that FTR grass can germinate at temperatures ranging from 15/5° to 35/25°C (day/night temperatures). The only negative is that many winter growing seedlings are killed by frost but not all. In a dense population, only a few plants are enough to produce seeds for the next generation.
- The plant can be tall (one to two metres) and has a wide germination and emergence timeline.
- Over-reliance on glyphosate has resulted in the evolution of herbicide resistance in FTR grass populations.
- The seed is easily spread by vehicles, farm machinery, wind, waterways and animals (domestic as well as wild).
- The FTR seed bank, mostly at shallow depth, is in an ideal position for best emergence and FTR grass has a reputation for 'false starts'; that is, it will germinate and establish after small falls of rain, unlike many Australian native grasses. But with competition, many of those plants would not survive.
- The widespread adoption of crop residue retention and furrow seeding with all their benefits, provide a favourable environment for germination, establishment and survival of FTR grass. It means moisture is held around the seed for longer.
- It is also becoming more common that Australian roadsides and stock routes have become arteries for further spread of FTR grass. It establishes well along fence lines and roadsides because of the favoured environment created by frequent grading (placing seed at a shallow depth), combined with regular rainfall events providing water runoff from the typically



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