

near impervious road surface. Even small rainfall events then become beneficial for this tough and serious weed.

- Council roadside slashing, along with roadside upgrade works, can facilitate dissemination of mature FTR grass seeds into near-perfect weed-free conditions. Coolatai grass, plus other declared weeds, are being spread in a similar manner.
- Local authorities also face future challenges keeping rural quideposts and signs clear of weeds and visible. In the past, this was achieved by herbicide spot spraying operations on plants like FTR grass. But these plants are fast becoming more herbicide-tolerant or resistant every year.
- Constant slashing or mowing (e.g., lucerne fields, roadside verges) can result in FTR grass setting seeds closer to the ground, suggesting that this weed has adapted to this practice.

What can we do about FTR grass?

Spraying with herbicides can be useful if FTR grass plants are very young and not stressed. At this stage, high rates of knockdowns in the form of glyphosate with the best surfactants available, and some group A products, can reduce the population. There may be too many escapees, but utilising the double-knock principle can improve the imperfect results.

Residual herbicides have much to offer. Unfortunately, like knockdowns, they need moisture for best results, and that moisture has been scarce in recent years. Prevention is still a key component of weed control.

Mechanical tillage or the 'Reset Principle' appears essential to break the cycle. Patch tillage has been trialled, but it appears the implement and tractor are also modes of seed dissemination, as it travels from one patch to the next. Some producers realise the need for whole paddock tillage and achieving good general machinery hygiene, when moving between fields. Mechanical tillage can provide good short-term control of FTR grass – but there are consequences of increased mechanical tillage:

- Besides the obvious loss of surface crop residue, there is likely to be increased wind and water erosion.
- Tillage results in moisture loss from the fallow. About 12 mm is lost per operation. So fallow efficiency is reduced from around 26 per cent to less than 19 per cent. Different years and fallow lengths give varied results.

- The chances of extending a crop seeding operation after a rain event are reduced significantly because of mechanical disturbances and reduced stubble load.
- Weed seeds are buried to varying depths, which influences their survival longevity and increases the time for a tillage only practice to control the potential population.
- Tillage destroys soil organic matter in its various forms. An important consequence is the impact on water-stable aggregation. These mechanical practices change the particle size distribution or soil structure and as a result, various degrees of surface sealing occur. At the very least, a reduction in water infiltration results.
- Water is the lifeblood of any farming operation. Anything that reduces infiltration has serious short- and long-term consequences for crop production.

Machinery – particularly headers – spread FTR grass seeds. Therefore, cleaning of machinery (including contractors' gear) before moving to another field is essential to reduce the spread of FTR grass.

In any natural disaster situations (e.g., drought, flood, etc), hay is supplied from one region to another. Because of this practical urgency, hay may not be physically checked for weed seeds or even have a statutory declaration attached, which may unintentionally spread weed seeds, like FTR grass. This will pose a serious problem if the weed seeds are resistant to herbicide(s).

Processes should be in place to check for weed seeds in any hay to help reduce the spread of FTR grass seeds. End-users need to be prepared to control the feeding area if possible, on these suspect loads.

Water channels, head ditches, and on-farm roadways are also a source of weed seed production with resultant spread factors and should be kept clean from any weed growth.

Agronomists and researchers visit growers' fields often. They need to strictly follow the rule, "Come Clean, Go Clean".

The price of 'tillage' is high. In the long-term, it results in soil degradation – physical, chemical and biological. The economics of farming will change, negatively. We need to arrest this weed!

1. Rural consultant and farmer, Goondiwindi, Qld 4390.

2. Pulse Australia and Australian Herbicide Resistance Initiative, Highfields, Qld 4352.

3. QAAFI, The University of Queensland, Gatton, Qld 4343. ■



**MAIL
ORDER
WELCOME**

**AT CHARLTONS FISHING YOU'RE
IN THE BEST COMPANY...**

**Minnkota Humminbird Abu Garcia Penn
Daiwa Shimano G-loomis Jackall**

18 Kerwick Street Redbank Q 4301 Ph: 3818 1677 www.charltonsfishing.com.au

No knockdown, no worries, if...

■ By Peter Newman

THINGS just aren't like they used to be. Aussie rules football used to be about the full forward taking screamers and defenders could actually tackle hard – now it's all about flooding the backline and netball rules apply to contact.

There used to be one type of beer on tap and buying a round of drinks was easy. It was a yes or no question.

We used to be able to rely on the break to the season.

It seems to be getting harder and harder to get reliable autumn rains to germinate weeds that we can knockdown before seeding the crop.

Should we be setting ourselves up to delay seeding, even when there is a late break, to get a knockdown before seeding?

As AHRI and Weedsmart Western region agronomist, I recently gave a presentation to a group of high rainfall farmers who were concerned that they hadn't had a decent knockdown for three years in a row. What I came up with, based on research and experience, was that we definitely should not be waiting for a knockdown, but we need to throw enough weed management at the farming system to make it work.

Research by Chris Preston's team in South Australia has shown that early sown crops can compete better with weeds because they grow in warmer conditions, and as a result set a similar amount of ryegrass seed as late sown crops with an extra knockdown. The key to success here is a robust pre-emergent herbicide package.

In the immortal words of Ray Harrington, "We want the farmer calling the shots, not the weeds". This has got to be one of the best weed control quotes of all time. Ray is right. If the weeds call the shots, there's little doubt that farmers will lose money if they are forced to change rotation, or delay sowing, or heaven forbid – leave a paddock out of crop altogether! We want the farmer to choose the time of sowing to maximise profit.

South Australian delayed sowing research

First, let's take a look at the time of sowing research by Sam Kleemann, Gurjeet Gill and Chris Preston from the University of Adelaide. Through several years of research at two sites, they have concluded that farmers should not delay sowing to get another knockdown prior to sowing.

In this trial at Hart SA, there were similar weed numbers in crop despite the later time of sowing receiving an additional knockdown prior to seeding. There was similar ryegrass seed set in crop between the two times of sowing, and there was a spectacular yield increase for the earlier time of sowing.

This is why we want the farmers calling the shots!

TABLE 1: Ryegrass density in crop, headcounts in spring and wheat yield for two times of sowing at Hart, where Sakura 118 g/ha was applied pre-sowing

	Ryegrass in crop (plants/m ²)	Ryegrass heads in spring (ryegrass heads/m ²)	Wheat yield (t/ha)
Time of sowing 1 (May 4, 2014)	8	39	4.1
Time of sowing 2 (June 2, 2014)	8	41	2.9

This research was repeated in 2015 at Hart at a lower ryegrass density site and a similar trend was seen. The trial was moved to Roseworthy in 2016 to a higher density ryegrass site. This time the earlier time of sowing had more weeds in crop than the later



Research has shown that farmers should not delay sowing to get another knockdown opportunity prior to sowing.