

# Lexone tolerant wheat – a demonstration

The aim of this demonstration was to investigate the metribuzin tolerance of a new wheat variety from WA (Eaglerock) and compare it to Yitpi .

## Summary

Managing brome grass populations in wheat is a challenge facing many growers, however chemical and variety control options have improved over the years with the introduction of Clearfield wheat technology and now metribuzin tolerant wheats.

Eaglerock, a new metribuzin tolerant wheat variety from Western Australia, was compared to Yitpi for crop tolerance to trifluralin and metribuzin combinations as well as agronomic performance.

Yitpi was higher yielding than Eaglerock (yield t/ha) in the control treatment (no chemical) and in the treatments where lower rates of metribuzin were applied. With higher rates of metribuzin, Eaglerock outperformed Yitpi.

Eaglerock did not have full tolerance to metribuzin.

## Background

Brome grass is becoming more problematic for farmers particularly in Mallee regions. This annual weed is known for its tolerance to water stress and for possessing an extremely efficient root system. The dry sowing conditions over previous years has restricted its control prior to cropping and has enabled it to aggressively compete with crops.

There are two main species of brome grass. They are Red Brome (*Bromus rubens*) and Great Brome (*Bromus diandrus*). The difference in the two varieties is maturity time, with Red Brome often maturing two to three weeks earlier than Great Brome. Staggered germination in the cropping phase increases the difficulty in controlling this weed as it prevents effective control with knockdown herbicides.

Many studies have shown that brome is fairly soft seeded, with seed persistence no more than two to three years. Therefore, a period of at least two years is required to reduce the brome grass seed bank. Some options to achieve consecutive years of control include:

Conventional wheat and applying Monza and Atlantis at the 2 to 3 leaf stage. However, on the chemical label these applications will reduce the growth of brome and its ability to compete with the crop and will reduce seed set, but may not give a significant reduction in plant numbers. Suppression only.

Clearfield JNZ and applying Midas at 4 to 5 leaf. In lower rainfall districts there is a greater risk of herbicide persistence in the soil, which may limit the choice of plant back crops and management options following Clearfield wheat.

The three chemicals listed above are Group B chemicals and continual application may lead to the development of resistance.

Another option is metribuzin (Lexone), a Group C herbicide that works well when incorporated by sowing or applied in-crop, although control of this chemical can be variable in drier seasons as moisture is required to active the chemical. At present, our Victorian varieties have low tolerance to metribuzin and there are no registrations for in-crop use.

2525A, registered as Eaglerock, is a Western Australian wheat line that is claimed to have excellent tolerance to metribuzin.

Eaglerock has a Sunelg/Blade parentage, is an awnless variety and can tolerant up to three times the registered rate of metribuzin. It also has triple rust resistance and in WA, protein levels were 1.5-2% better than the majority of other varieties with similar yields. However it DOES NOT have CCN resistance or tolerance and it agronomic qualities are questioned under Victorian conditions.

## Methods

This demonstration was conducted at the Birchip site. Yitpi wheat and Eaglerock were sown June 25 at 175pl/m<sup>2</sup>. The treatments were not replicated.

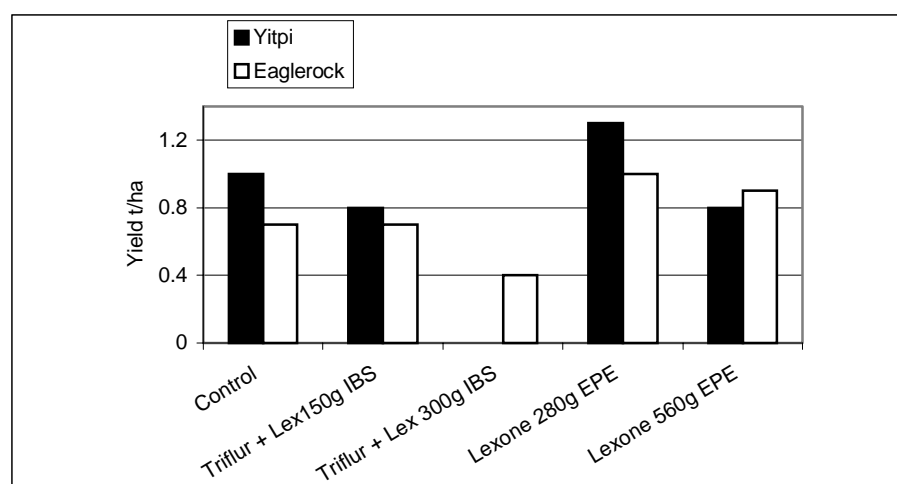
**Table 1.** Rate and timing of trifluralin 480g/L + metribuzin 750g/kg combinations

Variety	Treatment	Rate/ha	Timing
Yitpi	Control		
2525A	Control		
Yitpi	Triflur480 + Lexone	0.8L + 150g	IBS
2525A	Triflur480 + Lexone	0.8L + 150g	IBS
Yitpi	Triflur480 + Lexone	0.8L + 300g	IBS
2525A	Triflur480 + Lexone	0.8L + 300g	IBS
Yitpi	Lexone	280g	Z14
2525A	Lexone	280g	Z14
Yitpi	Lexone	560g	Z14
2525A	Lexone	560g	Z14

IBS – Incorporated by sowing; GS14-4 leaf stage

## Results

Brome grass was not found at the site. This trial was conducted for variety tolerance to metribuzin levels only.



**Figure 1.** Yield (t/ha) comparisons of Yitpi versus Eaglerock with Lexone treatments applied IBS (incorporated by sowing) or EPE (early post emergent)

## Interpretation

Yitpi performed better agronomically compared to Eaglerock both in the control treatment as well as the treatments with the lower rates of Lexone. However, under the higher rates of Lexone, Yitpi performed poorly to the extent that it did not register any yield when the Triflur + Lexone 300g IBS treatment was applied.

In previous BCG trials (see 2002/03 Crop and Pasture Production Manual) Lexone was applied in crop at the 4 leaf stage to determine its activity on brome grass. Lexone is not registered for use in wheat, however Lexone can provide good control of Brome grass with reasonable crop safety. The window of application for effective and safe application of Lexone is both small and critical. Soil moisture and rainfall after application are crucial to activate this chemical and, as this was lacking in 2004, the performance of the chemical may have been compromised.

## Commercial Practice

Long-term planning and an integrated strategy is essential if effective management of brome grass is to occur. To effectively control this weed, at least two consecutive years of control are required. On non-wetting soils this period may be longer, as seed persistence tends to be greater.

## Management options

Shallow burial of brome seed, with a light tickle of the soil before sowing, may stimulate its germination and therefore improve subsequent control with knockdown herbicides.

If seasons permit, growing canola or pulse crops with the use of a Group A herbicide in crop, followed by a Clearfield wheat the following season is a good strategy. In 2002, the Clearfield system (Midas herbicide and JNZ Clearfield wheat) and knockdown treatments applied at the 0.5 leaf stage delivered good brome grass control.

If Lexone in wheat becomes registered in Victoria consider introducing a Lexone tolerant crop in badly infested brome paddocks. Due to Eaglerock having a lower agronomic performance in Victoria, introducing it as a single year break crop may be an option in heavily infested paddocks in order to get two years of good control.

Be careful about the use of new herbicides (Group B) so as to prevent resistance to these important herbicides.