Exciting new herbicides for ryegrass control in wheat

Peter Newman, Department of Agriculture and Food, Western Australia, Geraldton

KEY MESSAGES

Two new ryegrass herbicides of novel modes of action look very promising for Australian growers. These herbicides will come into their own when trifluralin resistance becomes wide spread in WA. They offer similar levels of ryegrass control as trifluralin with excellent crop safety and possibly some suppression of wild radish and capeweed.

AIMS

To evaluate new herbicides and novel herbicide mixtures for ryegrass control in wheat.

METHOD

A Yellow sandplain soil site in the high rainfall zone (25 km east of Walkaway) near Geraldton was selected. The paddock was in pasture in 2006 and was known to have ryegrass problems. Herbicides were applied at 64 L/ha water volume through 02 flat fan nozzles immediately before seeding (within two hours). Calingiri wheat (95 kg/ha) was sown by grower with 60 kg/ha MAP at 30 cm row spacing. Seeding machine was a John Deere air drill (18 m) fitted with knife points and presswheels. Flexi N was applied twice post sowing.

RESULTS

All herbicide treatments reduced ryegrass density by similar amounts compared to un-sprayed ($p < 0.05$, lsd = 11.5). Differences in capeweed density between herbicide treatments were found ($p < 0.05$, lsd = 38.3. There were no significant differences in wild radish density between treatments ($p = 0.086$).

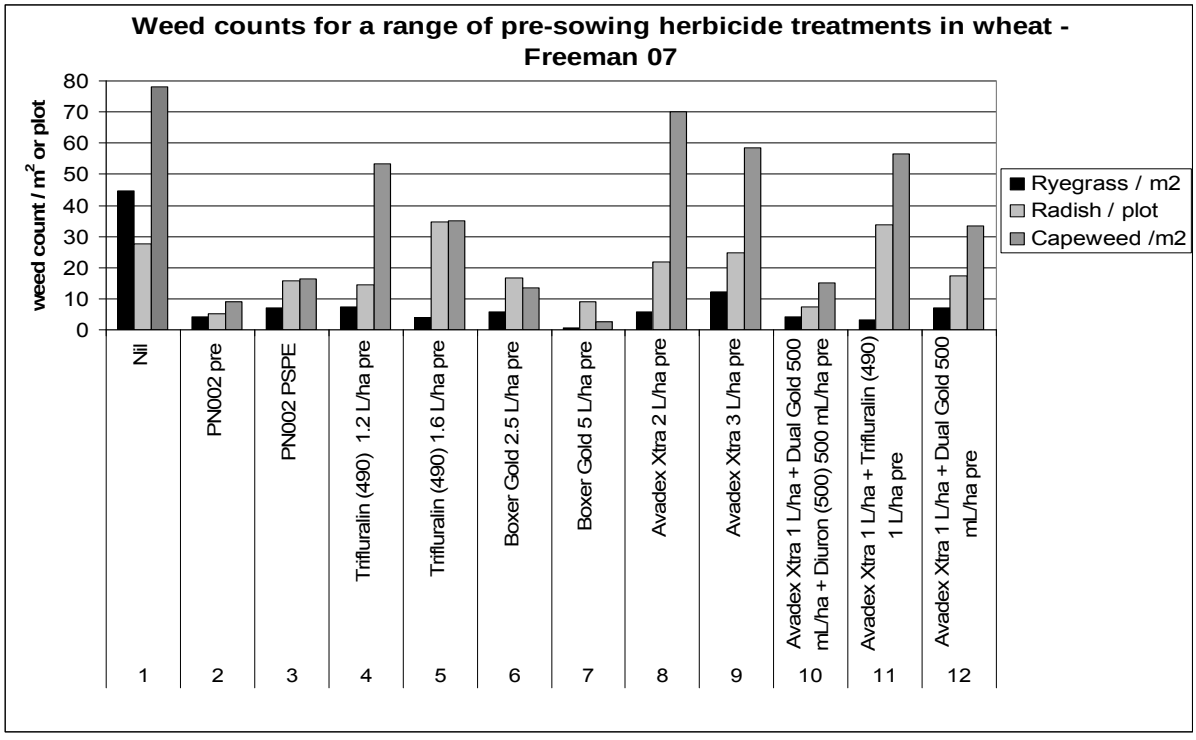

Figure 1. Ryegrass per m^2, Wild radish per plot (plot = 12.6m^2) and Capeweed /m^2 for a range of herbicide treatments applied pre-sowing of wheat.

There was no significant difference in wheat yield between treatments ($p > 0.05$). Only two reps were harvested due to mechanical problems. CV between reps 5%.

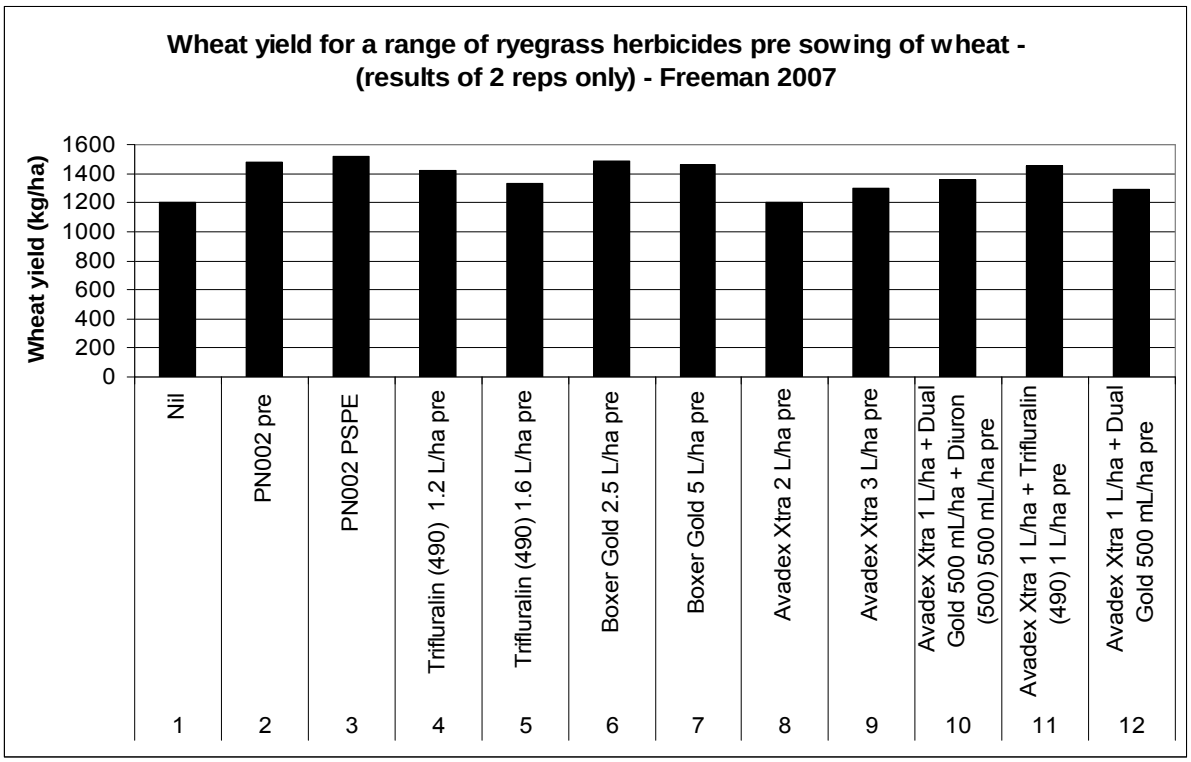

Figure 2. Wheat yield (kg/ha) for a range of herbicide treatments applied pre-sowing of wheat.

CONCLUSION

The coded herbicide PN002 is still potentially several years from release and is looking very useful for Australian grain growers. The mode of action of this herbicide is currently unknown and is likely to be considered a novel herbicide group for WA growers. This product has shown excellent crop safety and offers similar ryegrass control to high rates of trifluralin. The high level of control with the post sowing, pre-emergent (PSPE) treatment indicates that the product is not volatile however it is likely that pre-sowing application will give best weed control. The pre-emergent application of PN002 gave 91% ryegrass control, and 89% capeweed control. This treatment also resulted in 82% wild radish control however this result was not significant ($p > 0.05$) due to large variation in wild radish density.

Boxer Gold® is a new Syngenta product that is likely to be registered for use in Australia in 2008. Boxer Gold® is a combination of S-Metolachlor (Dual Gold, group K) and prosulfocarb (group E) and is considered to be a novel herbicide group for WA growers for ryegrass control. Boxer Gold® is a pre-sowing herbicide and the label is likely to read that it should be incorporated within seven days of application. The label rate of 2.5 L/ha gave 87% ryegrass control which was similar to trifluralin and PN002. Boxer Gold® also gave 83% control of capeweed at the label rate. Some radish suppression was observed however this was not significant.

Both of these new herbicides represent new chemistry for Australian grain growers. Integrated weed management messages were developed based on the assumption that there are no new herbicides coming for ryegrass management and now there are so perhaps the game has changed a little. Many growers may choose to use and abuse the products while others will choose to preserve these new products to maximise their life span. We now have the technology to make these products last for a very long time should the growers choose to adopt a sound IWM strategy from the outset. What is important is that growers now have the choice.

The Avadex® (triallate) mixes in this trial provided similar ryegrass control to trifluralin. However, these mixes are cost prohibitive compared to trifluralin and above label rates of Dual Gold® were used and is therefore not recommended. Research into Avadex® mixes will continue into the future.

Avadex® may be a viable alternative to trifluralin in the future if cheaper Avadex® comes to the Australian market.

KEY WORDS

wheat, ryegrass, herbicide, Boxer Gold, Trifluralin, Avadex

ACKNOWLEDGMENTS

Many thanks to Mat and Helen Freeman for their cooperation throughout the season. Thank you to GRDC for supporting this research; and to Glenn Adam and Trevor Bell for technical assistance.

Project No.: DAW00123

Paper reviewed by: Dave Minkey