

Seed treatments in wheat and barley

Alistair Crawford, Bayer CropScience, Broadacre Extension Manager - Southern Region; Swan Hill

The aim of this trial was to look at Zorro[®] (barley) and Hombre[®] (wheat) versus standards and to look at plant numbers, aphid and disease control.

Summary

Fungal diseases and aphids can affect yield dramatically in some years in some areas. Bayer CropScience is developing two new seed treatments which can help with fungal disease and aphid control and reduce the spread of barley yellow dwarf virus (BYDV) helping to increase yields. In this trial no aphids and very low levels of disease were recorded. The use of Hombre[®] and Zorro[®] in this situation did not increase yield.

Background

Aphids can affect cereal yields by transmitting viral diseases (eg BYDV) and by direct feeding on plants. Bayer CropScience is in the process of developing two new seed treatments Hombre[®] and Zorro[®]. Hombre[®] is a combination of the well-known seed treatments Raxil[®] and Gaucho[®]. Zorro[®] is a combination of Baytan[®] and Gaucho[®]. Hombre[®] and Zorro[®] can protect against aphid damage and reduce the spread of viruses transmitted by aphids and can also protect against certain fungal diseases.

Methods

This trial was conducted using a fully replicated randomised block design at the Birchip site.

Annuello wheat was sown at 175 plants/m² and Gairdner barley at 150 plants/m² on May 12. The seed was treated with a range of seed dressings (Table 1) and sown with MAP + EzyZinc at 60kg/ha. Prior to sowing, urea was pre-drilled at 50kg/ha with Triflur 480[®] applied at 0.8L/ha. LVE MCPA[®] at 400ml/ha and Lontrel[®] at 75ml/ha were applied on June 20.

Plant counts were conducted for all treatments and all plots were assessed for foliar disease presence and severity. Yield, screenings and protein were recorded at harvest.

Results

Table 1. The influence of Bayer seed treatments on plant density, grain yield and quality.

Crop	Treatment	Plant density (plants/m row)	Yield (t/ha)	Protein (%)	Retention (%)	Screenings (%)
Barley	Untreated	21.8	4.4	7.2	60.2	3.5
Barley	Baytan C	24.0	4.3	6.8	63.5	2.7
Barley	Gaucho	23.3	4.4	6.4	64.4	2.7
Barley	Zorro	19.6	4.3	6.7	64.2	2.9
LSD (5%)		5.2	0.3	1.3	14.2	1.6
Wheat	Untreated	19.6	3.0	8.3		
Wheat	Raxil C	18.9	3.1	7.7		
Wheat	Gaucho	18.3	2.9	7.5		
Wheat	Hombre	17.2	3.1	7.7		
LSD (5%)		3.1	0.2	1.5		

There were no aphids observed on the wheat or barley on inspection. Small numbers of aphids were observed on medic. Disease levels were very low with only low levels of spot form of net blotch found on the Gairdner barley.

Interpretation

Plant Establishment

There were no significant differences between plant numbers.

Yield

There were no significant differences between barley yields with different seed treatments. For wheat the Hombre[®] and Raxil[®] treatments yielded significantly more than the Gaucho[®] treatment. This does not seem to have great relevance but it is interesting that both treatments containing Raxil[®] had the highest yield.

Commercial Practice

- The development of Zorro[®] and Hombre[®] will mean that we have broad-spectrum seed treatments that can protect against aphids from emergence giving the best possible protection against BYDV.
- The risk of BYDV spread is highest in medium to high rainfall zones. Summer rains in the Mallee can result in aphid numbers building up and have been an issue in the past. Relatively few infective aphids can cause considerable damage if they arrive early in the growing season and are mobile in the crop.
- Work will continue to determine the optimum use of these products.