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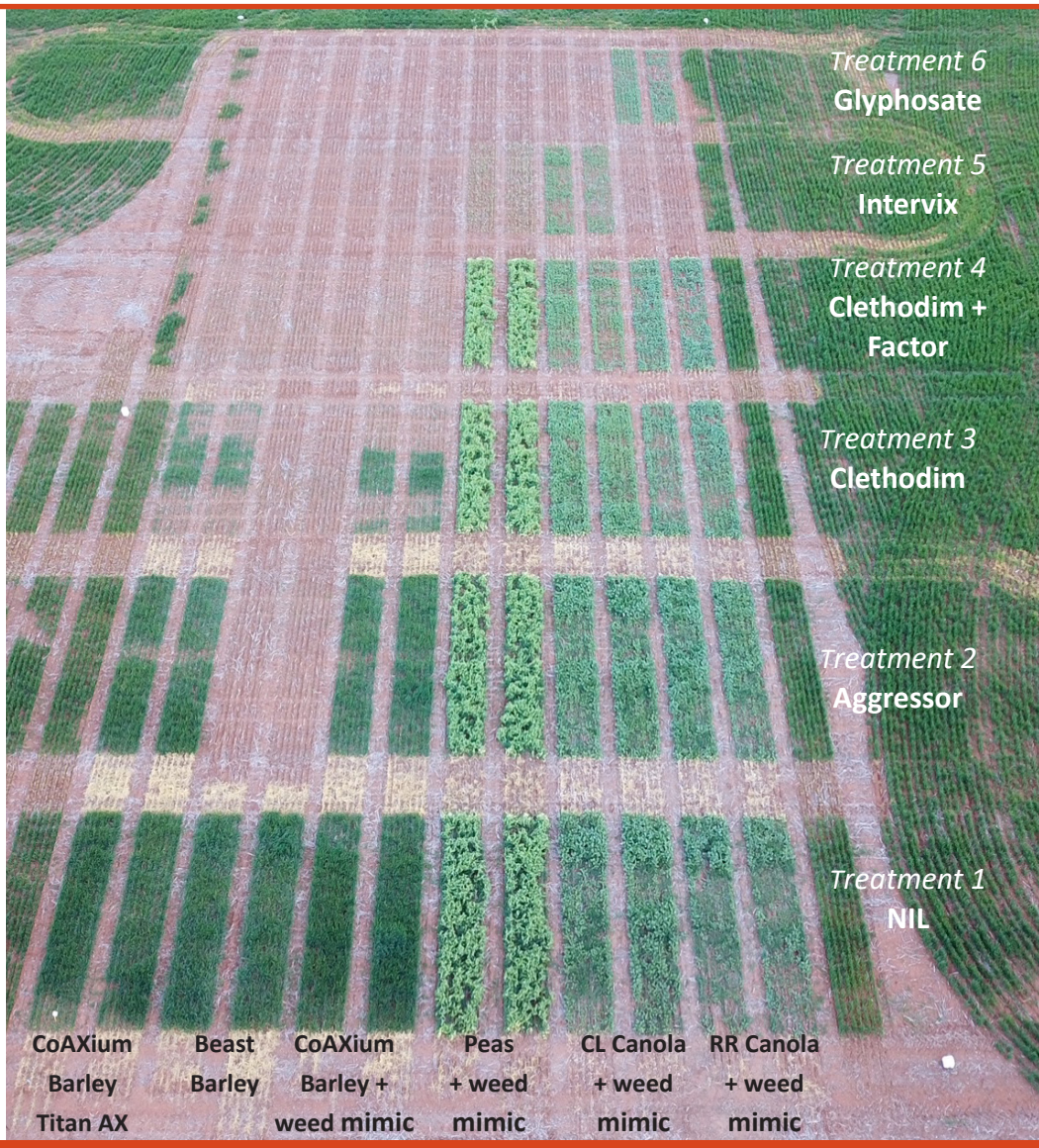
KEY POINTS

- Quizalofop-p-ethyl tolerance offers a number of potentially beneficial weed control options in barley, without the residual issues associated with industry alternatives.
- Aggressor did slightly reduce crop vigour in CoAXium barley (20%), however the effect was small and short lived.
- To control CoAXium barley volunteers, this trial showed Clethodim alone to be weak, but adding Factor completed control. Intervix and glyphosate also provided 100% control. This shows there are commercially acceptable options available for controlling volunteers.



COAXIUM BARLEY DEMONSTRATION TRIAL

BEELBANGERA 2022

INDEPENDENT AGRONOMY ADVICE + CUTTING EDGE RESEARCH

TRIAL DETAILS

The purpose of this demonstration trial was to determine the effectiveness and safety of Aggressor herbicide (Quizalofop-P-ethyl, Group 1 herbicide) in CoAXium barley (Aggressor tolerant barley). The CoAXium tolerant barley variety used in this trial was Titan AX.

Canola, both Clearfield and Roundup Ready, and field peas were also included in this demonstration to look at the control of volunteer CoAXium barley weed mimic with different herbicide options across the crop types.

There were 6 different herbicide treatments in the trial, including.

Trt 1 Nil
Trt 2 190ml Aggressor + 1% hasten
Trt 3 500ml Clethodim + 1% hasten
Trt 4 500ml Clethodim + 80g Factor + 1% hasten
Trt 5 500ml Intervix + 1% hasten
Trt 6 Glyphosate (1.2L Crucial)

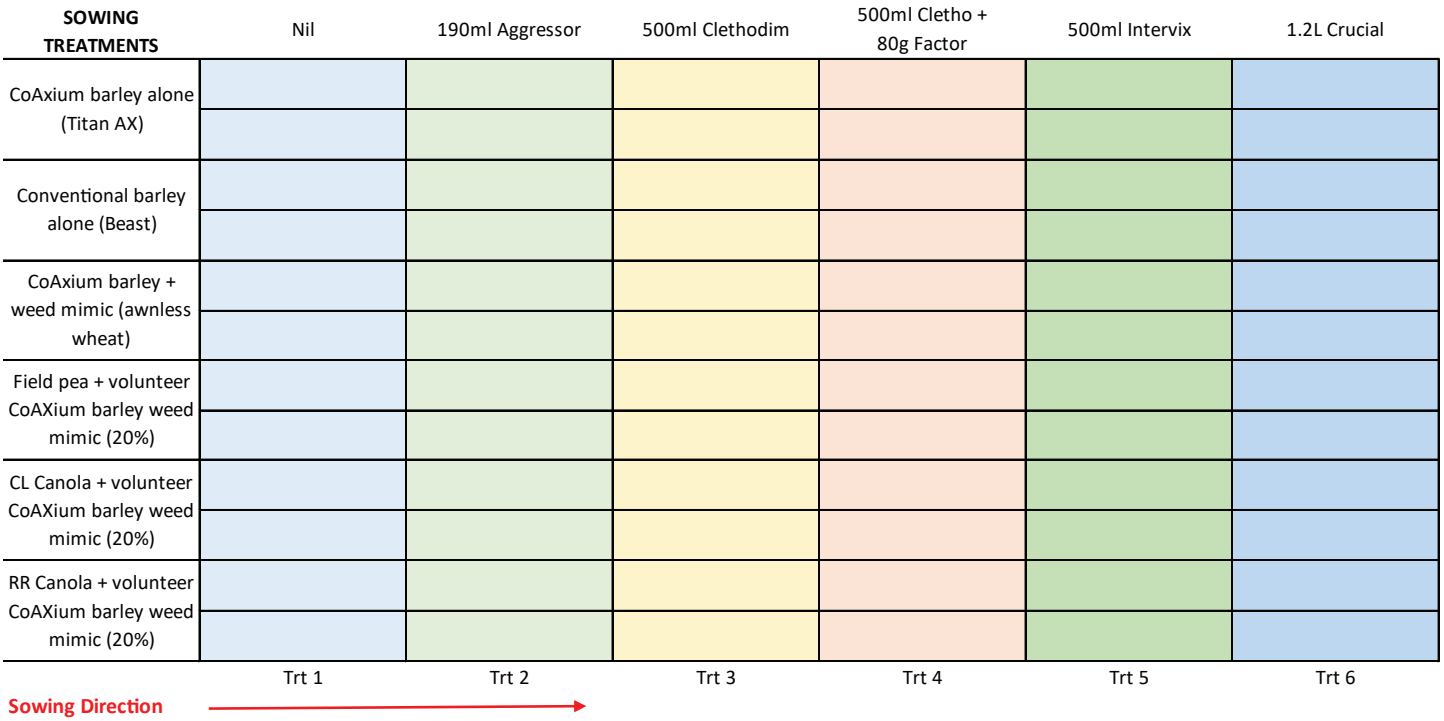
The demonstration was conducted at Ag Grow Agronomy and Research's research farm "Ridgetop" at Beelbangera,15km north of Griffith, on a sandy loam soil.

The demonstration consisted of a non-replicated matrix design consisting of strips of CoAXium barley (plus and minus a weed mimic), conventional barley (Beast), field peas (Sturt), CL canola and RR canola, figure 1.

Each strip of crop type was 1.75m by 72m (126m^2), consisting of 7 x 25cm rows, with 2 strips per treatment. The trial was sown with a small plot Morris Contour Drill parallelogram seeder on 4th May 2022.

Herbicide treatments (12m) were sprayed across the plots when the barley and wheat were between the 3-5 leaf stage, on 2nd June 2022. Herbicide treatments were boom sprayed, using a 6m wide boom mounted onto an ATV at 8km/hr and at 80L/ha water volume. The environmental conditions at the time of application (3pm) were 12.6^{o}C temperature, 53% relative humidity, and wind speed 5.4km/hr.

Figure 1: CoAXium barley trial matrix design.



RESULTS AND DISCUSSION

Crop safety and efficacy were assessed on this trial around 4 weeks after herbicide application, 24.06.2022.

1. CROP SAFETY:

For crop safety a visual assessment of crop effect was undertaken on each crop type and treatment. Crops were visually assessed for crop injury (relative as a % compared to the Nil) due to the treatment, ignoring any environmental stress affect. A scale from 0 to 100%, was used with no crop effect = 0% and complete death = 100%. The crop effect for each crop type and treatment is shown in figure 2.

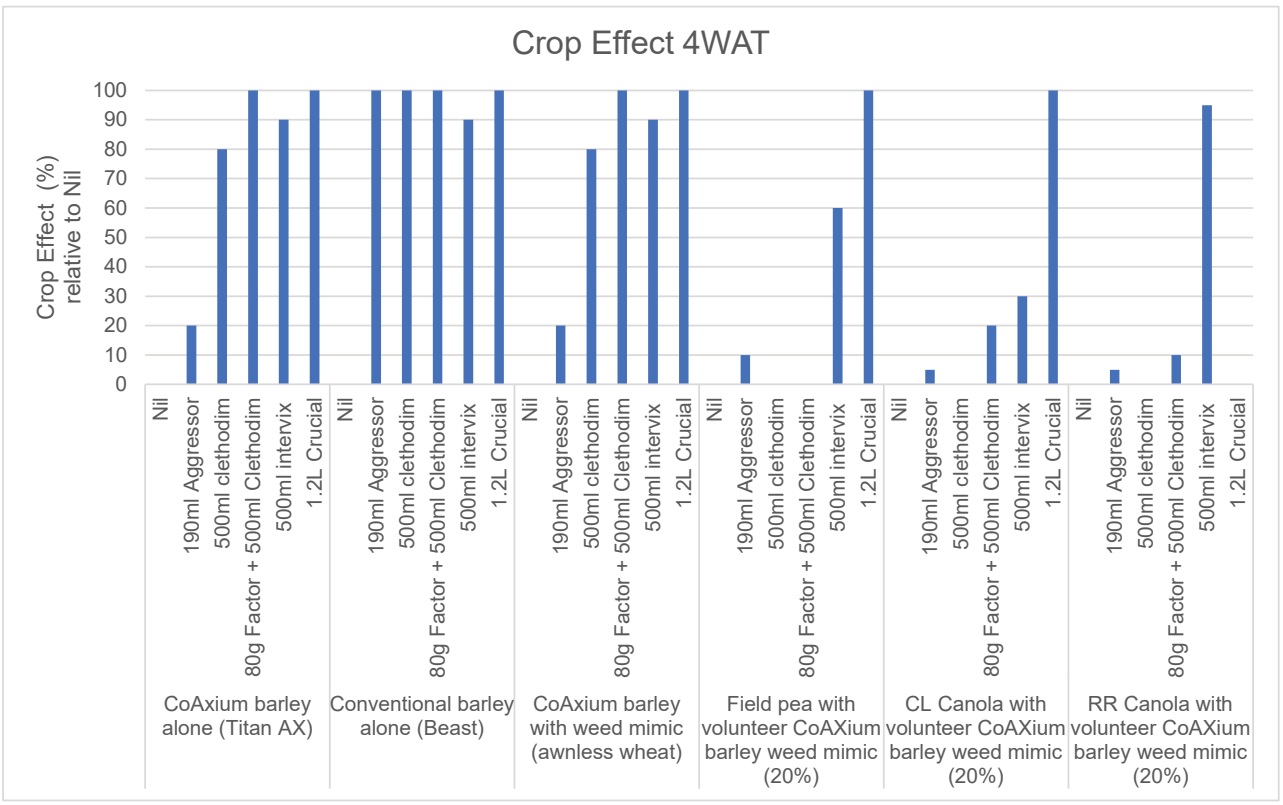
The use of Aggressor herbicide (treatment 2) had the greatest impact on conventional barley with the crop completely dead (100% crop effect) after 4 weeks. In comparison the CoAXium barley only had a 20% crop effect from the application of Aggressor herbicide. Field peas and canola only had a 10% and 5% crop effect respectively from the Aggressor herbicide, figure 3.

Treatments 3 (500ml Clethodim) and 4 (80g Factor + 500ml Clethodim) had 100% crop effect on the conventional barley. In comparison in the CoAXium barley, Clethodim alone only had 80% crop effect. Treatments 3 and 4 also had more crop effect in the CL canola compared to the RR canola.

As expected, except for the Roundup Ready canola, treatment 6 (Glyphosate treatment – 1.2L Crucial) caused complete crop death in all crop types.

Figure 3: Crop effect - CoAXium barley (left) compared to conventional barley (right) both treated with Aggressor herbicide.

Figure 2: Crop Effect Assessment undertaken 24th June 2022.



2. WHEAT/WEED 'CONTROL':

A visual assessment of wheat/weed 'control' mimic was undertaken on each crop type and treatment. Weed control was visually assessed for each treated plot, relative as a % of the Nil. It was scored on a scale from 0-100, where 0=nil weed control and 100=complete weed control. Weed control for each crop type and treatment is shown in figure 4.

Control of the wheat 'weed mimic' in the CoAXium barley was 100% effective for all herbicide treatments. For field peas and canola, the addition of Factor to Clethodim (treatment 3 v treatment 4) gave better weed control of the volunteer CoAXium barley "weed mimic" across all crop types, with 60% weed control for Clethodim alone compared to 100% with the addition of Factor, figure 5. Intervix gave 90% weed control in the peas and canola.

Figure 4: Weed control assessment undertaken 24th June 2022.

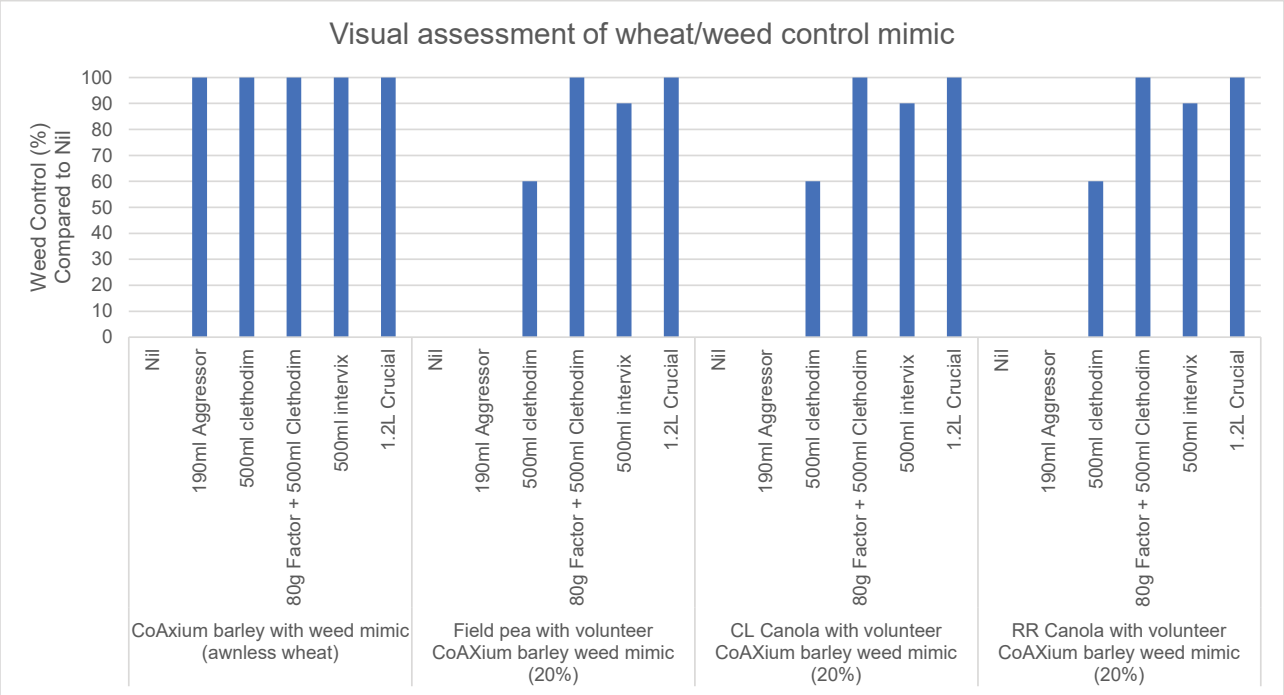


Figure 5: Volunteer CoAXium barley 'weed mimic' control in field peas- Clethodim (left) compared to Clethodim + Factor (right).

This trial was a collaboration between Ag Grow Agronomy and Research and AGT

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