8. GROWTH REGULATOR TRIALS

8.1 BARLEY - GNARWARRE

Location: "South Roxby" Gnarwarre

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Aim:

- To determine whether the chemical "Cycocel ®" is effective at reducing the lodging tendency of barley.
- To measure the effect of "Cycocel ®" on Barley yield and grain quality.

Background:
Barley has a tendency to lodge when grown under good rainfall conditions and high nitrogen status soils. This is particularly so for the variety Gairdner which is the preferred variety in SW Victoria. Early plantings will also worsen the problem because of a prolonged vegetative period.

Variety: Gairdner
Planting rate: 120 kg/ha
Sowing date: 22nd May 2001
Harvest date: 4th January 2002

Trial Design:
2 chemical treatments at 2 different timings were applied each to 3 beds of barley. These treatments were replicated twice.

Treatments included:

T1 : Control – no chemical
T2 : "Cycocel ®" (500 ml/ha) applied at GS32 (early tillering)
T3 : "Cycocel ®" (1000 ml/ha) applied at GS32
T4 : "Cycocel ®" (500 ml/ha) applied at GS35 (late tillering)
T5 : "Cycocel ®" t (1000 ml/ha) applied at GS35

Fertiliser: 100kg/ha MAP at sowing and 100kg/ha Urea at GS32

Herbicides: 1.5L/ha Roundup Max + 100 ml/ha Goal + 100 ml/ha Dimethoate on 4/5/01
700 ml/ha Tigrex on 27/6/01
1.5 L/ha Tristar Advance + 125 ml/ha Dominex on 13/7/01

Results:

Treatment	Yield kg/ha	Protein %	Test kg/ha
T1	4,584	11.2	62.6
T2	4,494	10.6	62.2
T3	4,431	12.0	60.2
T4	4,382	11.6	62.4
T5	3,968	11.8	62.8
Average	**4,372**		

LSD = 1215 kg/ha

Discussion:

There was no difference between the treatments in terms of crop standability. The crop lodged quite badly with approximately 50% of the plants less than 45 degrees to the horizontal across all treatments.

Although the yield differences were not significant (LSD = 1,215 kg/ha), it appears that as the chemical rate was increased and the later it was applied to the crop, yield decreased.

This trial is indicating that "Cycocel ®" is ineffective at controlling lodging in Gairdner barley when applied at 500 or 1000 ml per hectare at Z32 or Z35.

Possibly planting rates, nutrition management and better standing varieties may be a better approach than using growth regulators, although a different suite of growth regulators should be trialled again next year.

Note "Cycocel ®" contains the active ingredient Chlormequat at 582 g/L as Chlormequat Chloride

Photo taken 29th Nov 2001 showing Barley starting to lodge at the Gnarwarre site