4. CANOLA AGRONOMY TRIALS

4.1 GROWTH REGULATOR TRIALS

4.1.1 CANOLA GROWTH REGULATOR TRIAL (LAKE BOLAC)

Location:
McMasters Paddock, Lake Bolac SFS site

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Background:
The lodging of canola is a significant windrowing, harvesting, and yield loss issue. Growth regulators are registered for use in some cereal crops (not in canola), and have a demonstrated ability to prevent lodging by reducing crop height and increasing stem strength. In trials conducted in 2001, growth regulators demonstrated their ability to reduce the height of canola with no significant effect on yield or oil content.

Aim:
The aim of the trial was to determine the effect of growth regulators on crop height, grain yield and oil content of canola.

Trial Method:
Charlton canola was sown on the 28th of May 2002, at 4 kg/ha, with 115 kg/ha Pivot 13.16.0.7 (Lime had been applied to the paddock).

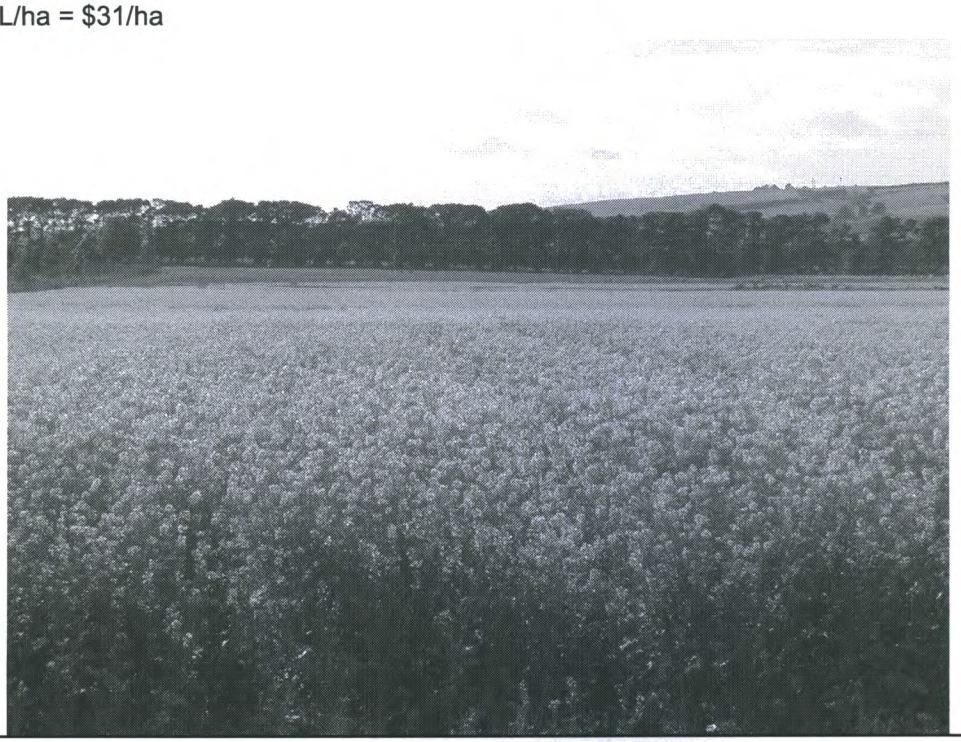
The growth regulators were applied on the 11th of September (Canola was 5 % Flowering). The treatments below were applied to three replicated plots, the approximate commecial cost for the products is also included:

Ethrel @ 500ml/ha = $10/ha
Ethrel @ 750ml/ha = $15/ha
Ethrel @ 1.2 L/ha = $24/ha
Cycocel @700ml/ha = $11/ha
Cycocel @ 1 L/ha = $15/ha
Cycocel @ 2 L/ha = $31/ha

Ethrel is produced by Bayer Cropscience. Active constituent is 480 g/L Ethephon (an anticholinesterase compound). Cycocel is produced by BASF. Active constituent is 582 g/L Chlormequat present as Chlormequat Chloride.

Currently the growth regulators used in the trial are commercially available, however there is no registration for use on canola.

The trial was windrowed in the first week of December and harvested on the 18th of December 2002 using the DNRE trial plot equipment.



Results:
Lodging did not occur in the treated or control plots, however the Ethrel treated plots where reduced in height, particularly in the 1.2L/ha treatment. All of the Cycocel treated plots had the same height as the control plots. Table 56 demonstrates that the yield and oil content of the trial plots were not significantly affected.

Table 56: The Yield and Oil Content of the Trial Plots were Not Significantly Affected.

Treatment	Avg. Yield t/ha	Avg. Oil	Price[31] $/ha	Avg. Height at Wind-rowing
Control	1.98	44.9	980	120 cm
Ethrel @ 500ml/ha	1.60[32]	45.1	799	110 cm
Ethrel @ 750ml/ha	2.11	45.3	1049	110 cm
Ethrel @ 1.2 L/ha	2.03	44.9	1004	100 cm

Treatment	Avg. Yield t/ha	Avg. Oil	Price[31] $/ha	Avg. Height at Wind-rowing
Cycocel @ 700ml	1.98	45.3	985	120 cm
Cycocel @ 1 L/ha	1.91[31]	45.0	950	120 cm
Cycocel @ 2 L/ha	1.92	45.4	955	120 cm

[31] Canola price = $490/t + 1% of price per 1% above 42% oil.
[32] The Ethrel @ 500ml & Cycocel @ 1L treatments contained one plot that yielded 0.55 & 0.48 t/ha respectively. The two yields are particularly low for no apparent reason.

Conclusion:
The results suggest that there was no significant impact on yield or oil content of the canola following the application of growth regulators.

The Ethrel @ 1.2 L/ha did produce the shortest crop, and therefore in broad acre situations this product may be the most effective at reducing crop height and preventing lodging.

If you receive $490/t on farm for your canola you only have to save 49 kg/ha of canola seed to pay for the $24/ha (Ethrel @ 1.2L/ha) growth regulator chemical cost.

This indicates growth regulators have the potential to significantly decrease the windrowing and harvesting loss and therefore increase the return of broad acre canola crops. Growth regulators also have the potential to significantly decrease the cost and time associated with windrowing and harvesting lodged canola crops.

More work needs to be conducted to determine the most effective rates and application timing of the growth regulator chemicals currently available. The registration of these chemicals for use on canola crops also needs to be considered.