

Site specific plant growth regulators at Marrabel, 2011

Key Findings:

- Significant yield response to plant growth regulant application in barley, except where water logging occurred.

Why do the trial?

To assess the affect of plant growth regulators on barley yield at Marrabel in different paddock production zones.

How was it done?

Plot size 32m boom width and length of paddock **Fertiliser** DAP @ 100kg/ha

In 2011 one plant growth regulant treatment was applied to Commander barley and compared with nil. The treatments were applied with the growers boom spray with strips the full length of the paddock applied when the crop was at GS31.

The paddock had two treatments applied. These were:

1. Cycocel @ 1L/ha + Moddus @ 200mL/ha @ GS31
2. Nil

Yield differences were measured using the harvester yield monitor.

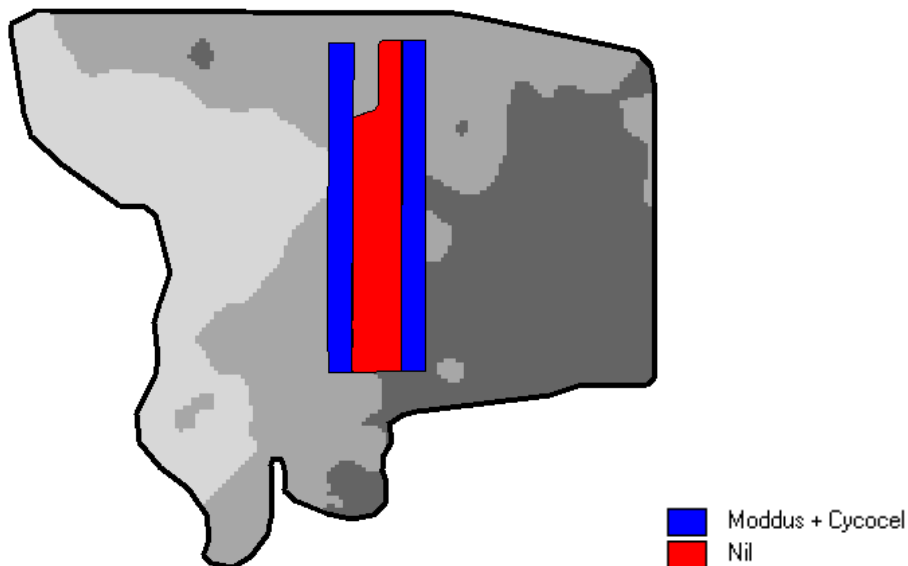


Figure 1: Layout of PGR treatments across production zones in a Commander barley paddock at Marrabel.

Results

Yield differences between treatments were highly significant (Figure 2c). Differences observed between the growth regulant treatments and nil were up to 0.5t/ha along the trial strip. The yield differences were not significant at the northern end of the trial strips, this is where localised waterlogging was observed in the trial and crop growth was reduced before the growth regulants were applied, as observed in the crop spec data (Figure 2a).

Given the high cost of these treatments (approx \$45/ha for Moddus + Cycocel), at \$200/t a 0.45t yield increase is required to give a 2:1 return on the input costs. This was achieved in most zones, except where the crop was poorer due to waterlogging. This was observed at the northern end of the trial site. The Crop Spec sensor was able to detect these areas of poorer crop. This Crop Spec sensor information could be used in future years to target PGR's site specifically only to crop where a significant response is likely.

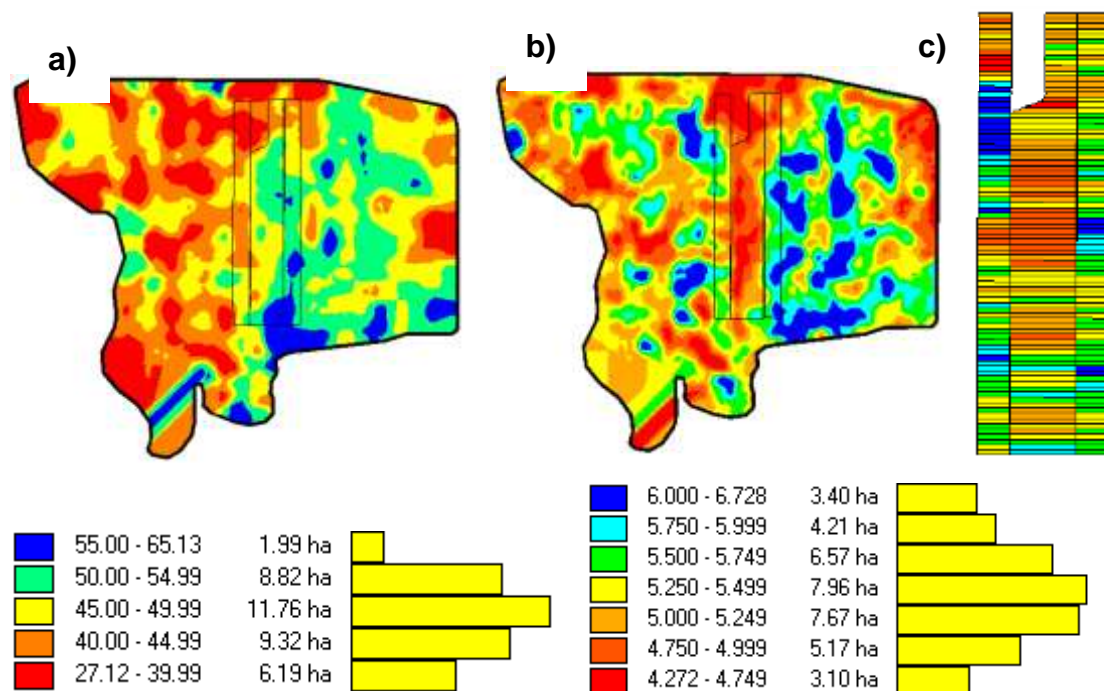


Figure 2 a) Crop Spec sensor image collected on 1/9/2011, b) barley yield (t/ha) map, c) yield of individual trial strips