

Alternative Soil Ameliorants

Aim: To investigate the benefits of Kelpak, seaweed extract containing high concentrations of auxin, a plant growth hormone.

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Farmer: Liam Carter
Location: Main Trial Site, West Buntine

Background: Kelpak is an extract from seaweed that has a high concentration of auxin, which is a naturally occurring plant growth hormone. The primary role of Auxins in plants is to promote root growth. Increasing the rate of root growth in theory results in a larger root system and therefore better nutrient uptake efficiencies and improved water uptake, especially during early growth in the winter months.

Trial Details:

Plot size and replication	2.5m x 20m; 6 replications
Soil type	Sand over gravel
Sowing date	22 nd June
Conditions at sowing	Good soil moisture
Machinery	Knife point, press wheels.
Seeding rate	80 kg/ha Calingiri wheat
Fertiliser	80 kg/ha DAP at seeding; 2 nd August: 40 kg/ha urea
Herbicides and Insecticides	15 th June: 1 L/ha Glyphosate 22 nd June: 1 L/ha trifluralin Also had a late radish spray
Paddock History	2001= Wheat, 2002 = Wheat, 2003 = Lupins

There were four separate rates of Kelpak used in this trial; 0, 2 L/ha, 4 L/ha and 8 L/ha. The treatments were sprayed out on the 29th June, 7 DAS, in good spraying conditions.

Results:

There was no improvement in grain yield from the addition of Kelpak and there was no significant rate response between the different rates of Kelpak used in this trial. We expected there would be a yield and quality increase with the top rate, 8 L/ha, compared to the untreated strip but there is no statistical difference, as seen in Table 1. Yield at 8L Kelpak was 1.21 t/ha compared to the 1.20 t/ha achieved in the untreated plots.

Table 1: Shows the yields and quality data for the four rates of Kelpak.

Treatment	Timing	Yield	Protein	Hectolitre	Screenings
0 L		1.20	10.6	78	2.5
2 L	PSPE	1.18	10.6	79	2.9

4 L	PSPE	1.15	10.6	78	2.7
8 L	PSPE	1.21	10.9	80	3.0

There may be several contributing factors to the lack of response that we can see. The crop was sown very late and was sown at about 5 cm depth. This meant that the crop was very slow to establish which would negate a lot of the benefit that a treatment like this would be likely to have on a wheat plant.

The late sowing date and the sowing depth combined with a dry finish has not given the best growing conditions and has not allowed the crop to develop a high yield potential and therefore not allowed products such as Kelpak to be assessed properly.

Summary:

- No significant increase in yield from applying Kelpak.
- No significant difference in yields between different rates of Kelpak.
- Other preliminary trials have shown responses to high rates of Kelpak.
- Need to repeat trials where environmental factors are not as restricting.
- May only have a fit when we have a good finish to the season.

Technically reviewed by: Peter Carlton (Elders Ltd)