



Irrigation Research & Extension Committee

Demonstration Report

Assessing the Need for Plant Growth Regulators in Durum

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Demonstration Summary

This demonstration was set up in an irrigated durum wheat paddock to look at whether using the plant growth regulator Moddus® Evo (Syngenta) could help reduce lodging and protect yield.

The paddock was split into a treated area and an untreated area, with all other inputs and management consistent across the whole crop. When assessed before harvest, there was no difference in lodging between the two areas, and yield at harvest was also the same. Seasonal conditions meant lodging didn't occur, so there was no benefit from using Moddus® Evo in this case.

The demonstration shows that PGRs can be useful when lodging risk is high, but they're not always needed every season.

Background & Aims

Plant growth regulators (PGRs) are used in cereal production systems in order to reduce crop height and minimise the risk of lodging.

Lodging is a significant issue in high-yielding irrigated cereals, particularly in wetter conditions, where heavy biomass and soft soils are common. Lodging reduces harvest efficiency, increases grain losses, and can impact grain quality.

Moddus® Evo (Syngenta) is a PGR designed to reduce lodging in cereals. When applied at the stem elongation growth stage (Z31), Moddus® Evo promotes shorter plant height and increased root growth, resulting in stronger, more resilient plants.

By reducing susceptibility to lodging, the product has the potential to protect yield and improve reliability in seasons with higher rainfall or irrigation.

The aim of this demonstration is to assess the effectiveness of Moddus® Evo in reducing lodging in durum wheat under irrigated conditions.

Demonstration Details

Location	Whitton
Crop type	Durum Wheat
Irrigation system	Bankless channel system

Methodology including:

The demonstration was conducted in a commercial durum wheat paddock that was divided into two treatment areas.

PGR-treated: Moddus® Evo applied at the recommended label rate when the crop reached the stem elongation stage (Z31).

Untreated control: No PGR applied, with all other crop inputs kept identical to the treated area.

Crop management practices (sowing rate, fertiliser applications, irrigation, and pest and disease control) were consistent across the entire paddock.

Lodging incidence will be assessed visually across both treatments prior to harvest, with observations recorded on the extent and severity of lodging. At harvest, grain yield will be measured separately for the treated and untreated areas using a calibrated yield monitor. Differences in lodging and yield between the treatments will be compared to determine the impact of PGR application.

Agronomic results

Lodging scores conducted before harvest indicated that there was no effect from applying the Moddus Evo product. However, both the untreated and PGR-treated areas were given a lodging score of 1, meaning that there was no lodging in any area of the paddock. This means that seasonal conditions were not conducive to lodging, and other inputs were applied in appropriate amounts not to cause too high biomass, and irrigation was effectively managed to reduce soft soil at critical periods.

The non-treatment effect, therefore, is not a result of Moddus Evo not being effective, but rather that conditions did not warrant the use of the product.



As a result of no lodging across the paddock, there was also no difference in yield or grain quality between the two treatments. The crop yielded 5.7t/ha.

Economic results

As no yield benefit was observed from using Moddus Evo, applying the chemical in this scenario would only result in a reduction in gross margins.

Therefore, using a PGR is not always warranted in cereal production and is likely only required in specific situations, such as poor seasonal conditions or growing a high-yielding variety that is susceptible to lodging.

Key learnings & recommendations

The key learning from this demonstration is that although PGRs have proven to reduce lodging and increase grain yield of cereals, they will not always be effective when the situation is not conducive to lodging.

Therefore, it is important to note that PGRs are a tool than can be used, but the impact they will have will need to be carefully analysed before application or there will be a risk of decreasing overall gross margins for the cereal crop.

