Pumpkin | Trial Sheet

Mycorrcin and Foliacin

How it Works

Biostart Mycorrcin is a soil biostimulant that activates naturally occurring beneficial microbes present in soils that stimulate new root growth and branching leading to better plant establishment, improved nutrient availability in the soil and uptake by the plant, and greater overall plant resilience.

BioStart Foliacin is a foliar-applied biostimulant that helps with green leaf retention and leaf biofilm recovery after environmental or chemical stress.

Trial Description

The trial was undertaken in a commercial pumpkin crop grown in Waiuku, Auckland. The crop was sown on 3 November 2021 and harvested on 9 February 2022. BioStart Mycorrcin was applied at 6L/ha after planting. Three applications of Foliacin at 1L/ha were applied from the 2nd true leaf stage and then every 18-21 days.

Results

Root development

The roots of the treated pumpkin plants were more extensive and had greater branching. This allows plants to gather more water and nutrients from the soil.

Biostart-treated pumpkin roots on the left and untreated roots on the right.

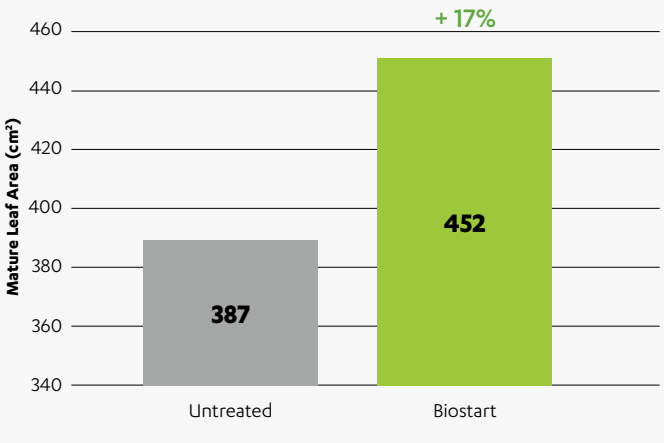
Drought Resilience

Leaf temperature, as a measure of drought resilience, was measured in January with BioStart treated plants showing a 3.6°C lower temperature than the ambient temperature and 0.9°C lower than the untreated plants. The lower leaf temperature means the plant is controlling its temperature better through transpiration and will therefore withstand drought and heat stress better and longer.

Leaf canopy size

Leaf area was measured on day 50 with treated plants showing an increase over untreated of 17%. This means treated plants were photosynthesising at a greater rate and conserving soil moisture better through their bigger shading capacity.

FIgure 1. Pumpkin Mature Leaf Area



Biostart-treated pumpkin plants in the left photo, showing greater leaf mass than the pumpkin plants on the right.

Marketable Yield Increase

There was a 13% increase in the number of marketable fruit harvested from the Biostart-treated area (Figure 2.) equating to a 4.8 T/ha yield increase. The average marketable weight of pumpkins was similar for the standard and BioStart-treated plants (~2.46 kg).

Better Storage

Biostart treated pumpkins lost significantly less weight over four months during storage than the untreated pumpkins (Figure 3.). This indicates that fruit quality had been improved through better fruit cuticle integrity resulting in lower moisture loss. This better storage equates to improved returns to both the grower and retailer.

Conclusion

These results show that regular applications of **Mycorrcin** and **Foliacin**, by optimizing the biology and overall plant health, increased the yield and profitability in a commercial pumpkin crop.

FIgure 2. Marketable Pumpkins (/ha), Waiuku 2022

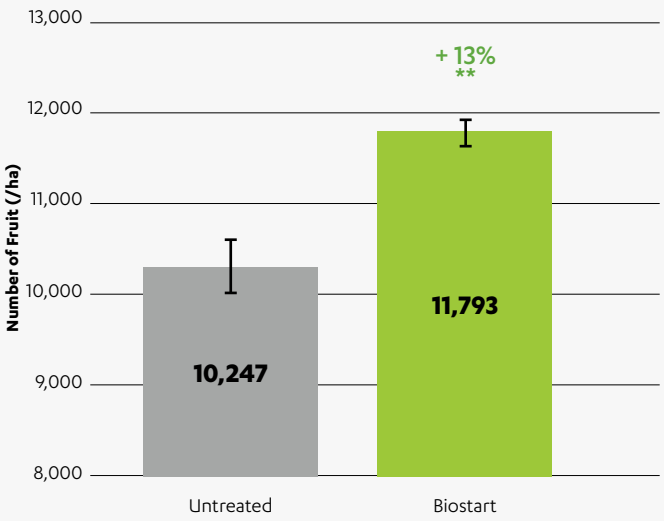


Figure 3. Impact of Biostart Programme on Pumpkin Fruit Storage (Weight Loss)

Waiuku: Sown 3 November 2021 – Harvested 9 February 2022