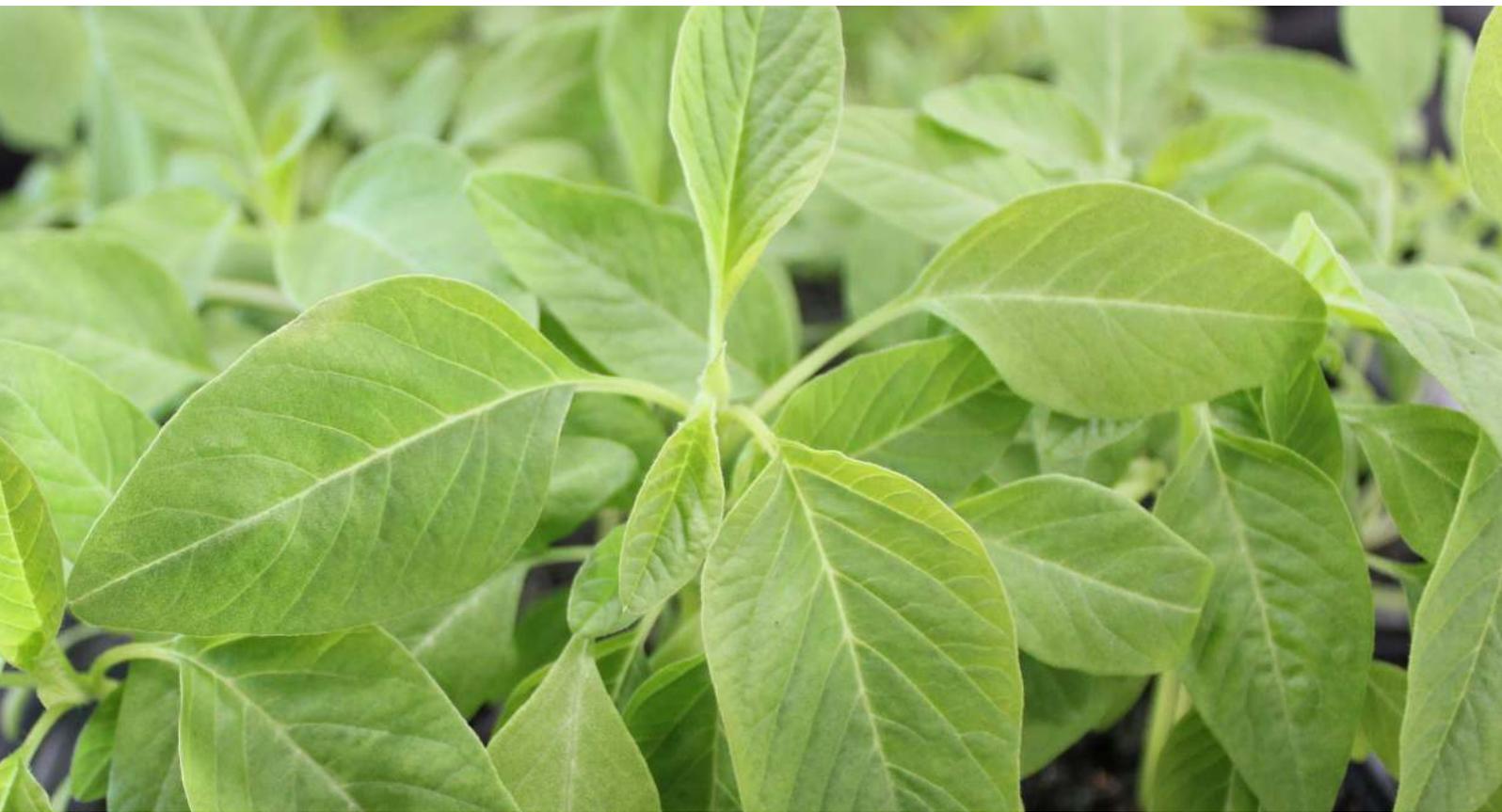


GREEN AMARANTH

Aurora Treatment Report



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GREEN AMARANTH

Amaranthus viridis

GROWN

Vertical Farms, Greenhouse, Open Field

GERMINATION

3-7 Days

HARVEST

20-24 Days

Description

Amaranth is one of the oldest grain crops. The leaves can also be eaten raw or cooked. The younger leaves particularly are mild and tender and, importantly, rich in antioxidants.

Amaranth is particularly susceptible to Anthracnose or Pythium. Those pathogens can be particularly detrimental in terms of losses. An outbreak of either can lead to ~30% yield losses, if untreated.

Aurora Process

The Aurora process is specifically designed to increase seed health by removing pathogens and increasing germination rates. The seeds are exposed to Activated Air™ – which includes a high level of “RONS” (Reactive Oxygen and Nitrogen Species). These actively disinfects the seeds and boosts growth vitality rates and speed - ensuring increased yield for the grower.

Caveats

This treatment protocol was not fully optimised to the seed/pathogen pair; an off-the-shelf protocol was used. There may have been scope for optimisations; additionally, as Zayndu are continuously improving the Aurora product range, it is likely that improved results could be achieved if these tests were re-run now. Please contact your sales rep if you'd like more details.

Pathogens

- Anthracnose
- Pythium

Processing Details

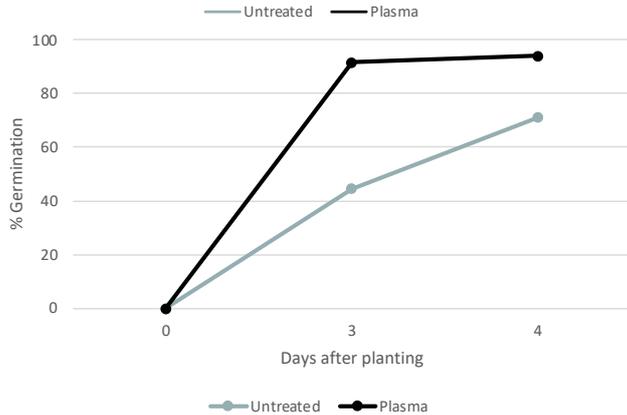
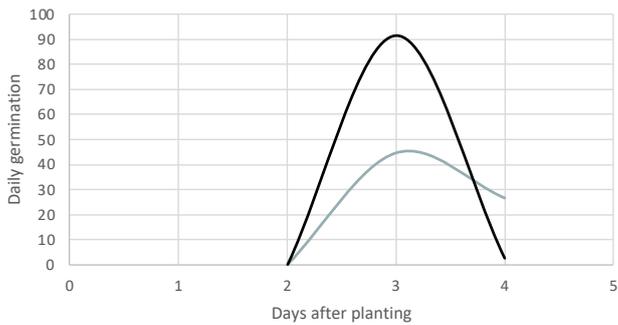
Aurora Model	Z10-1
Treatment Protocol	Z10-08x23
Date of Treatment	January 2022

Required Activated Air™ treatment levels treatment levels reached within the laboratory, under standard operation conditions. Pathology and germination tests were carried out in accordance with industry standard operating procedures (ISTA protocols).

GREEN AMARANTH

Germination

Total germination of the seeds improved significantly compared to the untreated seeds. An increase from 75% to 95% saves both time (in reducing cultivation of seeds which fail) and money (reducing the amount of seeds purchased).



In addition to increasing the total amount of successfully germinated seeds, the process also increased the speed of germination. 93% of treated seeds germinated 3 days after planting.

This improvement enables better prediction of harvestability, with the entire crop germinating within a shorter timeframe than untreated seeds.

Summary

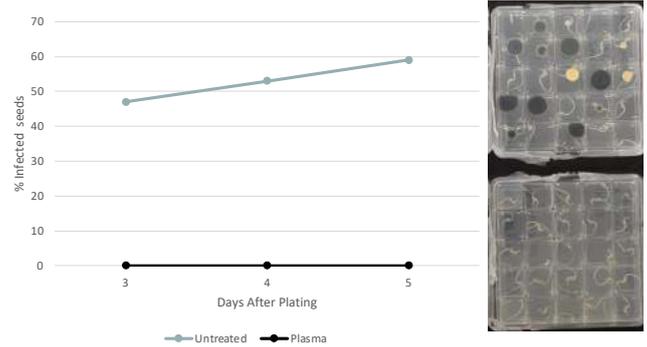
In this example, the Aurora treatment fully eliminated the seeds pathogen load. Total germination was increased by 13%. We noticed as well that the full seeds lot germinated 1 day earlier compared to untreated seeds. Overall yield was not tested to harvest date, but seedlings showed significantly increased vigour and a clear growth advantage.

For more details or to arrange an evaluation please contact our team below

Pathogens

The seeds were tested for fungal pathogens. Using the Aurora treatment 100% of pathogens were removed from the seeds.

The photograph depicts appearance of hyphae structures when seeds are placed on fungal growth media. The treatment efficacy is evident.



Overall Yield

Aurora treatment is beneficial to the overall seed health. In fact the Activated Air not only eliminates the pathogen present on the seed and effectively prime them, but we also noticed a faster plant development. This effect will also contribute to shortening the harvesting time.

