



Dynamic Plant Nutrient Diagnostics and In- Season Corrections

PRIA PROJECT • FIELD DAY INTRODUCTION

Testing whether in-season nutrient correction can improve plant function under real farm conditions.



A Result We Could Not Fully Explain

What happened

Zero-fungicide areas performed strongly

What it was

A signal, not a recommendation

The question

What made those plants perform?









The Question Moved Inside the Plant

- Was nitrogen being used better?
- Was stress tolerance higher?
- Was nutrient balance the missing link?
- Was photosynthesis stronger?
- Was disease resistance improved?

The answer is inside the plant.

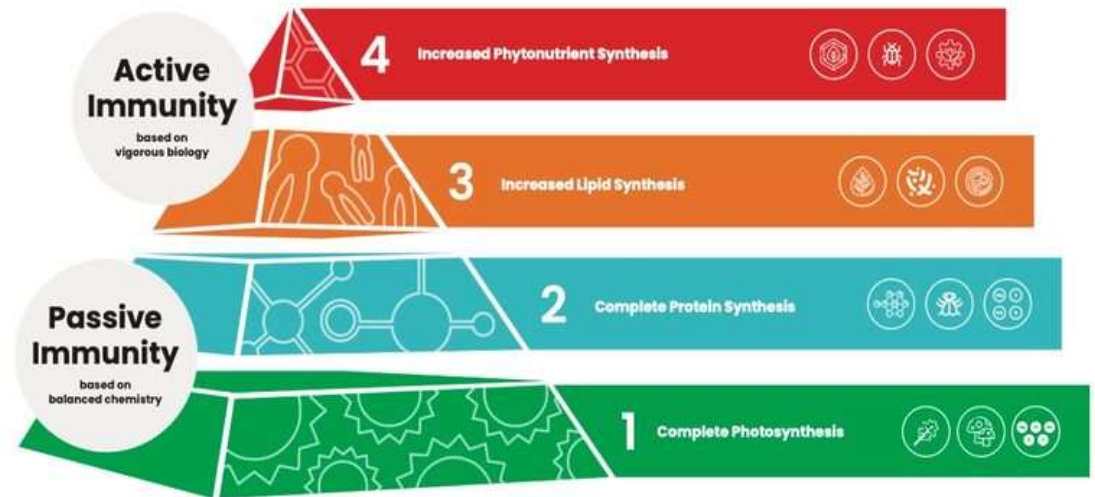
Nutrients as Plant Functions

-  Boron
Sugar movement
-  Zinc
Hormone balance
-  Molybdenum
Nitrate reduction
-  Sulfur
Amino acid formation
-  Magnesium
Chlorophyll
-  Manganese
Photosynthesis support

A nutrient deficiency is a blocked plant function.

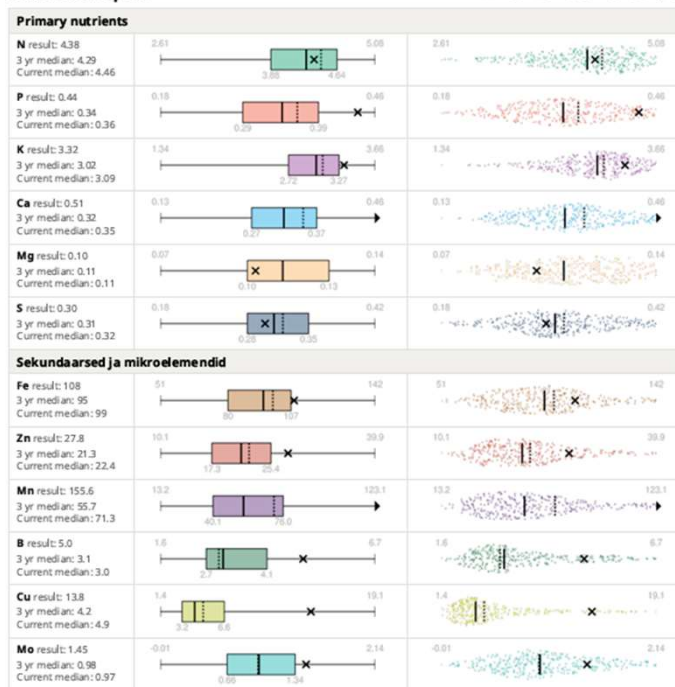
Plant Health Pyramid

“Healthy plants can become completely resistant to diseases and insects.” –John Kempf



Leaf reach report

TALINISU BBCH 30-39 - 337 Samples

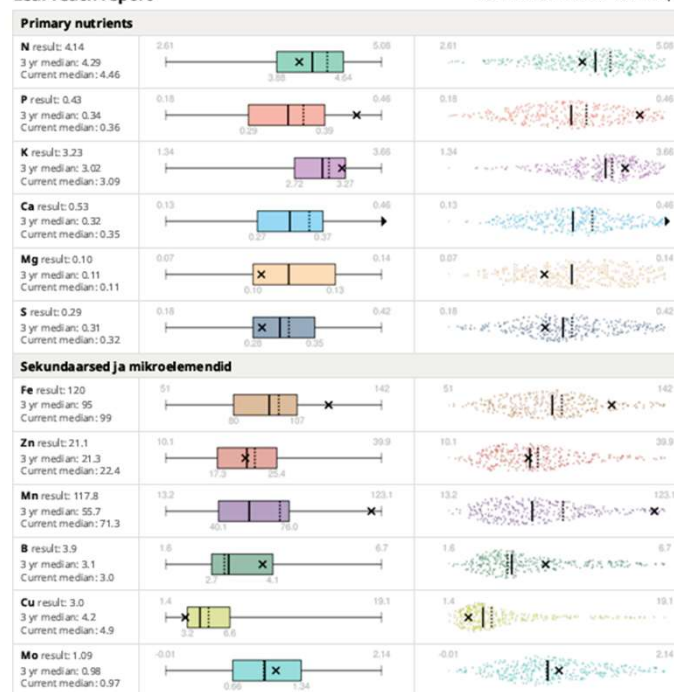


A box and whisker plot displays the spread of data by showing the middle 50% within a box, with a line inside marking the median value. The whiskers extend to the lowest and highest values within the normal range, while points outside the whiskers are considered outliers. This report uses normalised jitter plots, where points are spread vertically to reflect how many samples share similar values. Wider sections indicate a higher concentration of data at that point. The top 5% of values have been left out to stop outliers from stretching the scale and making the main data harder to see.

Legend: — Previous 3 year median - - - - Current year median X Sinu tulemus

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In the soil
but not available

Available to roots
but not taken up

Inside the plant
but not moved

Present in tissue
but not used

Remobilised later
but too late or too little

The question is not only: is the nutrient there? It is: is the plant using it at the right time?

The PRIA Project Tests This Properly

3

Farms

9

Fields

Ongoing

In-season assessments

Targeted

Nutrient correction

From observation to structured evidence.



Control vs Treatment

Control

Standard farm
practice

Treatment

Crop feedback +
Targeted correction

From observation to structured evidence.

Questions for the Field

- Can corrected deficiencies improve plant function?
- Can nitrogen become biomass and yield more efficiently?
- Can this protect yield potential?
- Can this become a practical farm decision tool?
- Can stronger plants tolerate disease pressure better?

