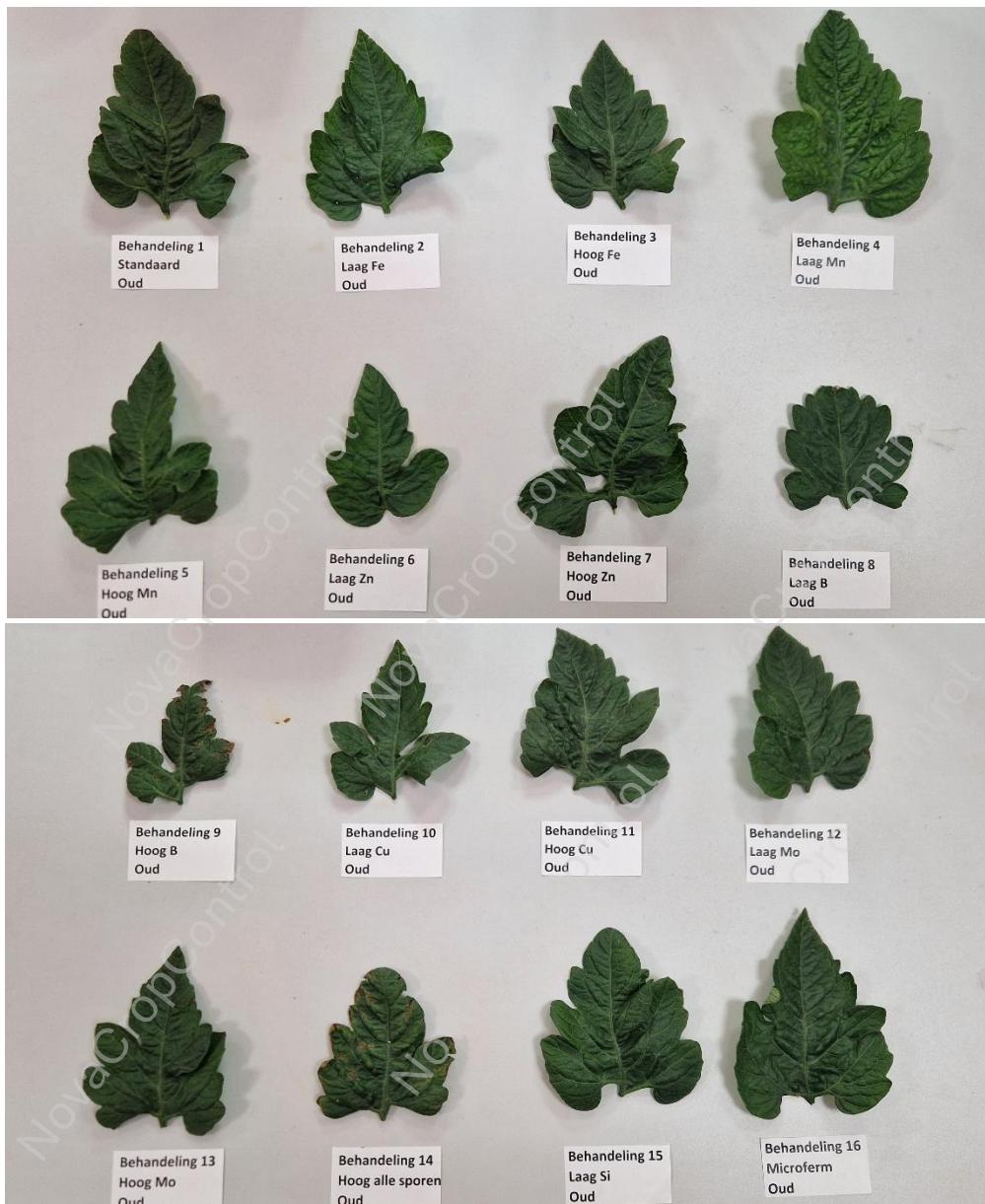


Symptoms of mineral deficiencies and excess in Tomato

**N, P, K, Ca, Mg, S, Fe, Mn, Zn, B, Cu and Mo deficiency
Mn and B excess**



 **NovaCropControl**



Index:

Standard fertilization	3
Nitrogen deficiency	5
Phosphorus deficiency	6
Potassium deficiency	7
Calcium deficiency.....	8
Magnesium deficiency.....	9
Sulfur deficiency	10
Iron deficiency	11
Manganese deficiency	12
Manganese excess	14
Zinc deficiency.....	15
Boron deficiency	17
Boron excess	18
Copper deficiency	20
Molybdenum deficiency.....	21

The images shown in this document are only guidelines, the symptoms can vary per crop and cultivation. In case of doubt about your crop health, we advise to do plantsap analysis.



Standard fertilization

Young leaves

The leaves of plants grown with standard fertilization are evenly green of color, with lighter green leaves in the top of the plants.

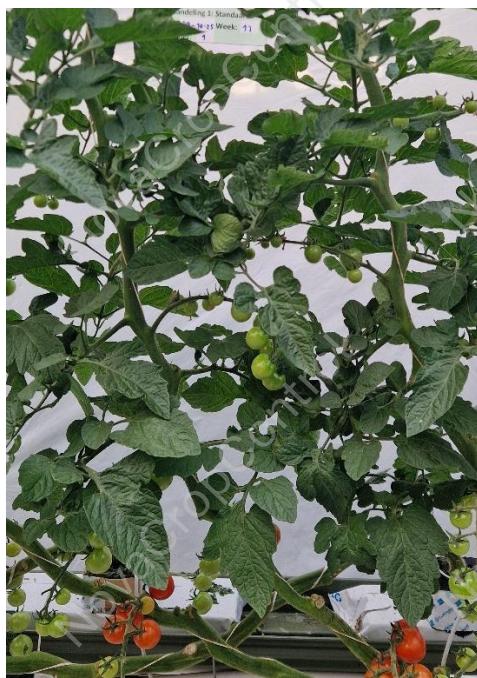




Standard fertilization

Old leaves

The older leaves are darker green of color. Every 3 branches there are bunches with evenly formed tomatoes.





Nitrogen deficiency

The leaves of plants grown with nitrogen deficiency are light green of color.



N deficiency

Without deficiency

Phosphorus deficiency

The leaves of plants grown with phosphorus deficiency show purple coloring between the veins.





Potassium deficiency

Plants with potassium deficiency have a brown withered edge on the leaves. Potassium deficiency can also result in impaired fruit coloring.





Calcium deficiency

The young leaves of plants with calcium deficiency show impaired growth, the edges of the older leaves show brown coloring. The fruits suffer from blossom end rot.



Magnesium deficiency

Plants with magnesium deficiency show light green to yellow coloring between the veins of the leaves.



Sulfur deficiency

The leaves with sulfur deficiency are light green to yellow colored.



Iron deficiency

Plants with iron deficiency show a pattern of bright yellow spots in the leaves.



Manganese deficiency

The leaves of plants with manganese deficiency show a light green spots between the veins, this was especially visible in the older leaves.







Manganese excess

The plants with manganese excess showed brown, withered tips in the crowns of the fruits, this was only visible in the lowest fruits.



Zinc deficiency

Plants and leaves with zinc deficiency remained smaller compared to the standard fertilization, the older leaves have dead, brown spots. Some of the fruits remained underdeveloped.



Standard



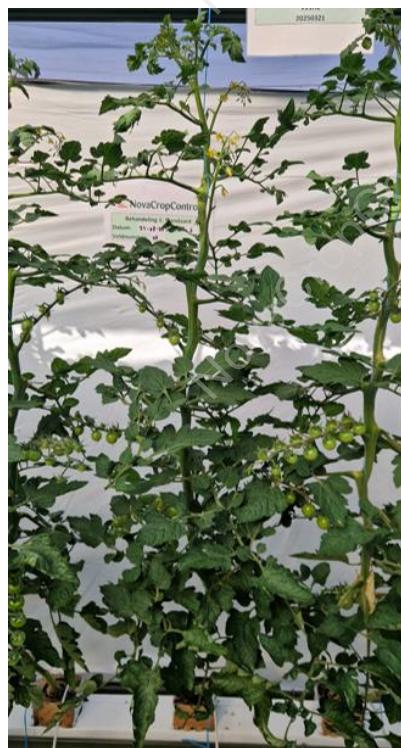
Low Zn





Boron deficiency

Plants with boron deficiency were a lot more brittle compared to the standard fertilization. The boron deficiency leaves showed yellow to brown coloring and the leaves and branches remained smaller. Boron deficiency can also lead to yellow crowns and releasing of the fruits.



Standard



Low B





Boron excess

The older leaves of plants with boron excess showed dead edges in the leaves, the leaves were also smaller compared to leaves of the standard fertilization.







Copper deficiency

Leaves of plants with copper deficiency curl up.



Molybdenum deficiency

Plants with molybdenum deficiency showed a dark coloring in the tips on the downside of the youngest leaves, in the older leaves this was not visible anymore.

