

Trace metal metabolism in plants



Training School

Metals as essential nutrients for agricultural crops

(Wednesday, 6th – Friday, 8th March 2024)



Location: At Research, Development and Innovation (RD & I) Center, Nouryon in Deventer, The Netherlands.

Day 1 (6th March 2024)

8:30 – 12:00

Welcome at Nouryon

Alberto Allegro (Global Marketing Director Micronutrients)

What are different types of chelates? And how chelated micronutrients are produced?

Dr. Arjen Reichwein (Sector manager- R&D micronutrient, Nouryon)

 ☕ **Coffee break**

Lab tour- production of chelates and chelated micronutrients at lab scale – industrial process.

Dr. Arjen Reichwein (Sector manager- R&D micronutrient, Nouryon)

12:00 – 13:30

Lunch break

13:30 – 17:30

Soil fertilization with micronutrients and inspiring practical tests with chelates to prove their function.

Dr. Walter Schenkeveld (Associate Prof., Wageningen University),

Marcel Bugter (Market development manager, Nouryon)

Theory and practical illustrative tests will be mixed in this session.

Participants will learn:

- Which factors in the soil will determine the availability of micronutrients and how can we measure those,

- What plants themselves do to promote the uptake to avoid deficiencies,
- Conceptual possibilities to enlarge the availability of micronutrients,
- Ideal carriers to promote availability,
- Differences between iron chelates – why the ortho-ortho isomer so important is?
- Differences (visual and explained) between complexes, partly chelation and full chelation of metals,
- Differences in adsorption of copper to peat soils.

Day 2 (7th March 2024)

8:30 – 12:00

Participants presentations,

4 participants (15 minutes each) will present their ongoing/ already published work.

 **Coffee break**

Essential metal nutrients as foliar fertilizers

Dr. Muhammad Imran (Technical development manager Micronutrients, Nouryon)

- Why foliar fertilization of metal nutrients
- Different types of foliar fertilizers (metal nutrients)
- Penetration and efficiency of foliar applied metals (nutrients)

12:00 – 13:30

Lunch break

13:30 – 17:30

Participants presentations,

4 participants (15 minutes each) will present their ongoing/ already published work.

 **Coffee break**

Application of metals (essential nutrients) in hydroponics and fertigation agriculture systems.

Marcel Bugter (Market development manager, Nouryon)

How to calculate and prepare nutrient solutions for commercial hydroponics and fertigation agriculture systems.

Plant nutrition quiz

Participants will be divided into two teams.

Day 3 (8th March 2024)

8:30 – 10:30

How to conduct standard biodegradability test of chelated and complexed micronutrients according to OECD standard methods.

Dr. Roy Geerts (Research scientist, biodegradability lab., Nouryon)

10:30 – 12:00

Coffee and Break

12:00 – 16:00

Travel to and visit a commercial Greenhouse farm in The Netherlands.

16:00

Coffee, closing of training school and departure to homes 😊

Participants will receive a certificate after the completion of the course.

Editorial

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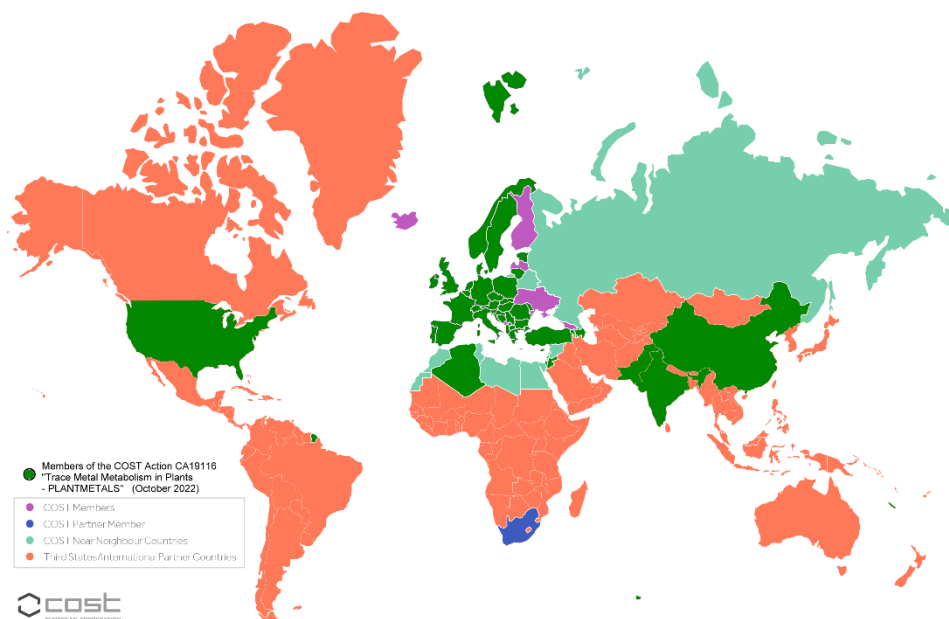
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map showing the
participating countries
in this COST Action



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"Trace metal metabolism in plants - PLANTMETALS"



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