

CO₂ sources of the future for Greenhouse Horticulture

CO₂ quality of future CO₂ sources suitable for greenhouse horticulture

21 10 2025 Janneke Grit et al.

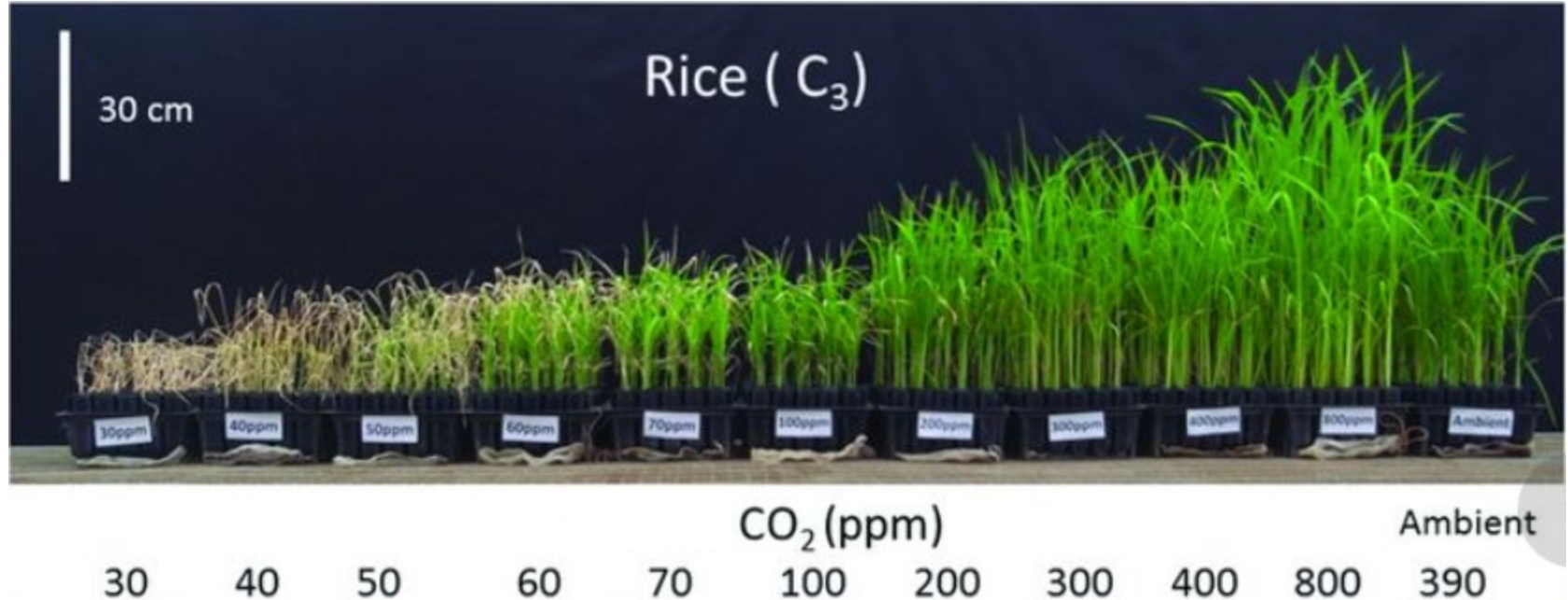


Janneke Grit

- Scientist WUR Business Unit Greenhouse Horticulture
 - Greenhouse crop physiology
 - New CO₂ sources
 - Transitions to new cultivation systems



Why is CO₂ important for crop production?



Current sources of CO₂ in Dutch horticulture

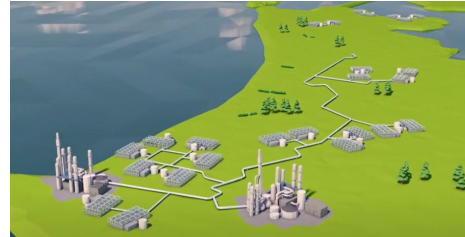
- **CHP installations and boilers** (natural gas combustion)
- Delivery by **truck as liquid CO₂** from:
 - Fertilizer plants (with natural gas as raw material)
 - waste processing companies (origin of the waste is partly fossil)



OCAP

(Organic CO₂ for Assimilation by Plants)

By-product of the petrochemical industry (fossil) and from a bioethanol plant (biogenic)



Possible new CO₂ sources

- Temporary storage CHP
- Carbon capture other industries/sources
- Direct air capture

Important: Quality should be good enough for plant growth!

→ Test new CO₂ Sources by WUR Greenhouse Horticulture



IDC-CO₂ project

- Innovation and Demonstration Center
- CO₂ from DAC for Greenhouse Horticulture

Funder:  KAS ALS
ENERGIEBRON

Duration: 2024-2027

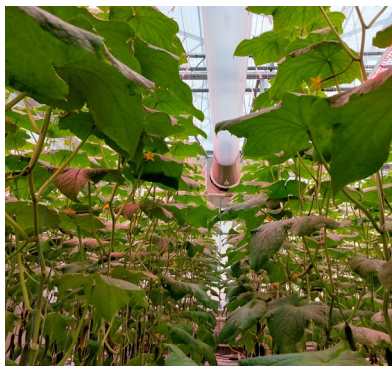
Potential suppliers:



SEIBU GIKEN



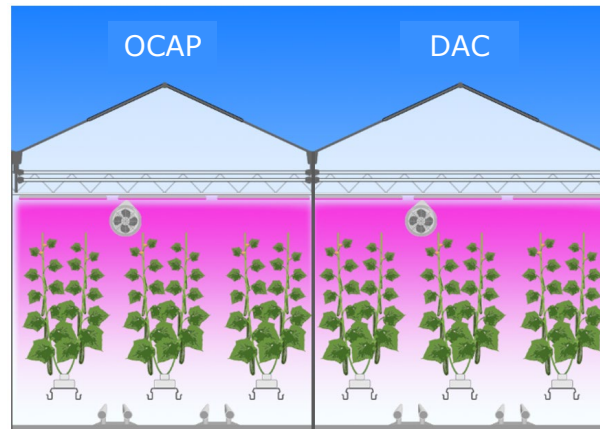
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News

Greenhouse horticulture is taking an important step in energy transition by capturing CO₂ from outside air

Goals: test effect on plants, gas analyses, performance characteristics machine, test practical implementation



CO₂ battery – CHP and ship

- Short term test and long term test
- Goals:
 - Test phytotoxic effect on plant growth
 - Gas analyses – CO₂ quality
 - Economic analysis
- Conclusion: positive



Thank you for your
attention!

Questions?

Contact: janneke.grit@wur.nl

*Thanks to all my colleagues
working on this project:*

*A. Boedijn, I. Righini, J. den
Bakker, F. Kempkes and many
others from the BU Greenhouse
Horticulture*

