

# GROWTH OF MICROALGAE ON PROCESS WATER FROM A DEMINERALIZATION UNIT: A PILOT-SCALE TEST

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## Pilot-scale cultivation: Introduction



*N. gaditana*



*C. typhlos*

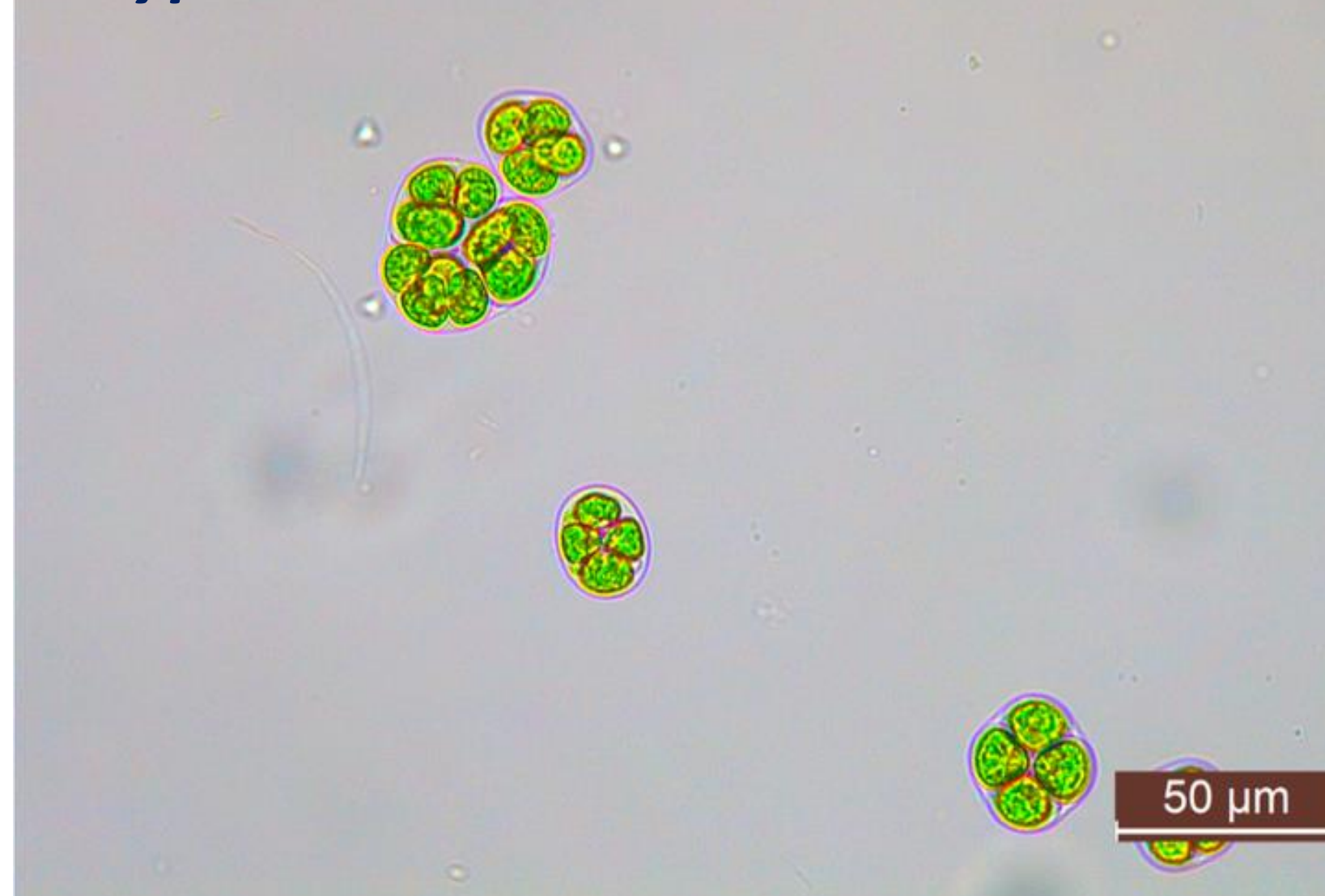
- Undiluted MAF-treated process water from an open pond with algae (PER= permeate)
- *Nannochloropsis gaditana* and *Chloromonas typhlos*
- 1500 L photobioreactor
- *N. gaditana* during spring period
- *C. typhlos* both in winter and spring period
- PER water enriched with nutrients similar to regular medium

## Pilot-scale cultivation: Results

- Growth rate for *N. gaditana* lower than compared to regular medium (0.19 vs 0.40 d<sup>-1</sup> respectively)
- Growth rate for *C. typhlos* comparable with regular medium (0.12 – 0.17 vs 0.15 d<sup>-1</sup> respectively)
- Both species show different morphology and behavior in PER, e.g., cell morphology (A), foam formation (B), loss of flagella, lipid globules, ...
- Successful cultivation up to 2-3 months with large batch harvests
- Risk of contamination: extra filtration step needed

A

*C. typhlos* in PER



*C. typhlos* in regular medium



B

*C. typhlos* in PER



*C. typhlos* in regular medium

