Nijmegen Trip Summary

From the 12-14.05 the Living Technology Team went on a science trip to visit a collaborating researcher at the University of Nijmegen. After arrival at the Radboud University, Renske Vroom showed us her lab, as-well as the lab-bird, a parrot that flys through most of the laboratory - very funny!

The reason we got in touch with Renske is our shared interested in the natural growth conditions of the plant Azolla, on which we conduct our research with the living Technology Project. Renske showed us the different approaches with which she and her Lab are growing this plant, both inside a greenhouse, as-well as outside in the open.

The trip was very informative, and gave us many new ideas on how we can integrate the fastest growing plant (Azolla) into our lives and city.

We wish to express our thanks for Renske and her kind willingness to share her unpublished research results with us.

Azolla Updates from Nijmegen

Renske Vroom

Radboud University Department of Aquatic Ecology

PhD student interested in anthropogenic effects on aquatic ecosystems

Studies paludiculture and Azolla's effects on former agricultural soils (peatlands)

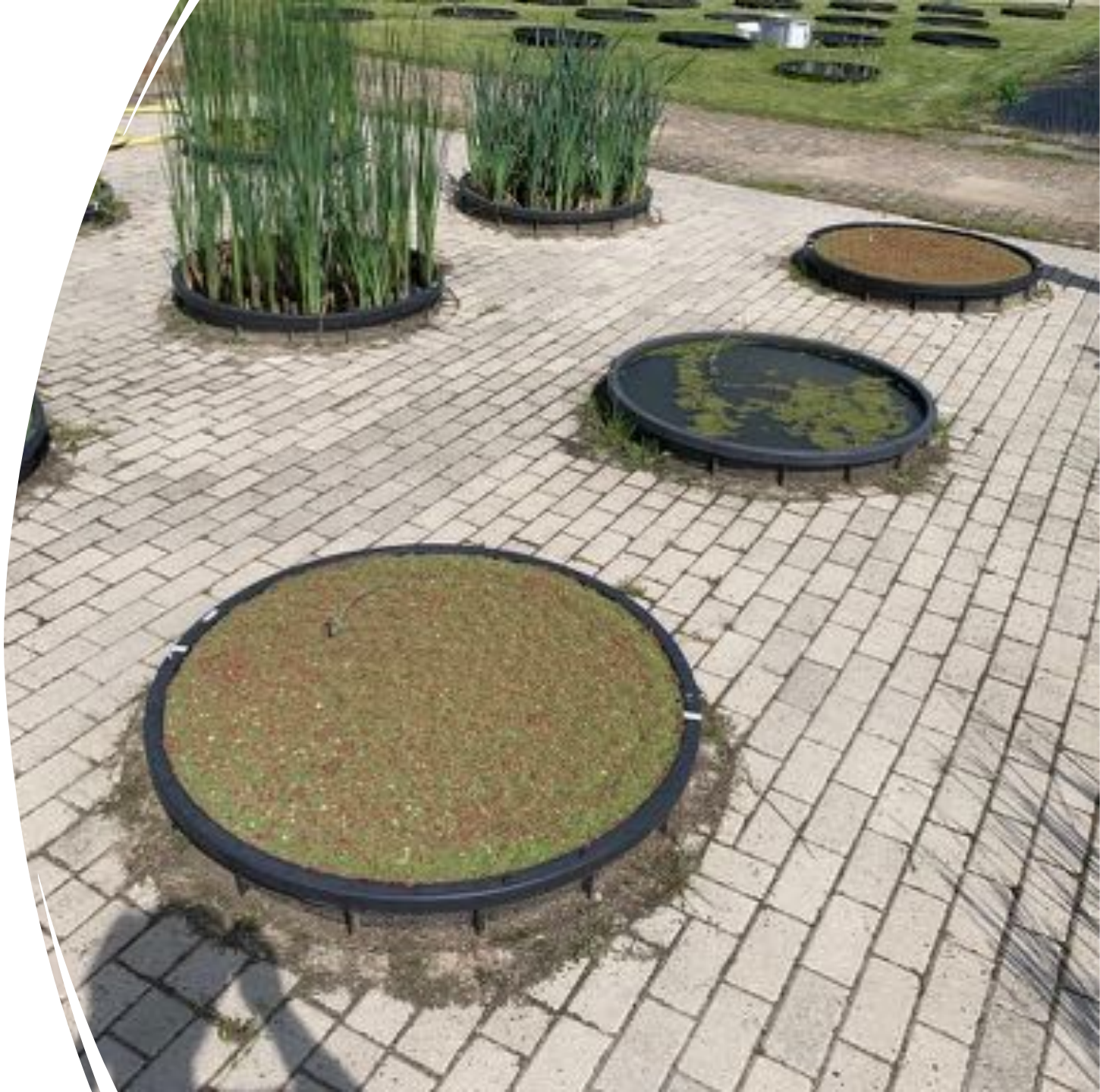
Experimental Setup

Outdoors

- Growth medium: water + agricultural soil
- Open system
- No harvesting

Indoors

- Growth medium: water + general stock solution
- Regulated conditions (greenhouse)
- Harvested ≥ once per week



Outdoors Results

Left:

- Not too dense, yet still mat-like
- Healthy, green color
- Normal, short root length
- Milky water

Right:

- Extremely high density → red discoloration
- Very thick mat, green Azolla under red on surface
- Elongated roots
- Milky water

Indoors

Outdoors

Root Length Comparison

Indoor Results

- Not overly dense (harvested at least once per week)
- Healthy, green color
- Still forms a somewhat thick mat
- Clear water compared to outdoors, not as many other organisms growing in container

Key Takeaways

Experimental Results

- Growth in variety of conditions
  - Medium
  - Climate
  - Light
- Resistant to density stress
  - Root elongation
- Grows in presence of many other organisms

Other

- Multiple stresses → red discoloration
  - Light
  - Nutrients
  - Density?
- Sulfate (K_2SO_4) helps alleviate many stresses
- Nutrient or density stress → sporulation

Renske’s publications

CLICK HERE!


Nijmegen


STARTUP


Afraid of the parrot ???
Knock!
And then Roy puts Rinus back in the cage!!!


TIC