



# Towards maximized re-use of recirculation water

## Measuring and solving growth problems

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An improved bio assay measures water borne growth reductions in recirculation water. New combinations of methods of water treatment succeeded in removing water borne growth reductions. Combinations of the tested techniques also proved to be able to destruct traces of crop protection agents. It now seems possible to further reduce the amount of discharge from recirculation as well as to significantly reduce the load of crop protection agents.

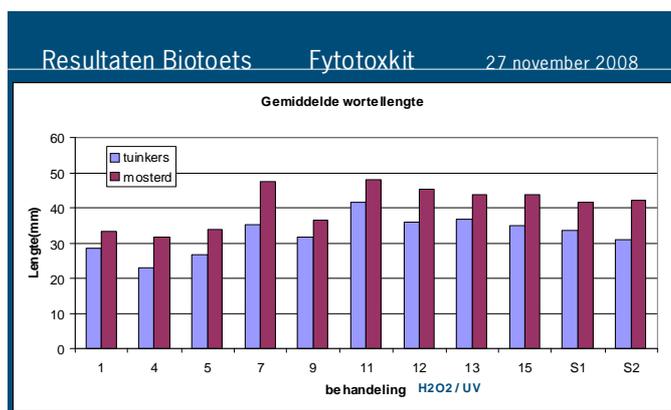
### Measuring and solving growth reductions

Research on the recirculation water of rose showed growth reductions on garden cress and white mustard, the test crops in the bio assay.



Bio assay (Phytotoxkit)

A series of treatments of the recirculation water with UV radiation and hydrogen peroxide proved to be able to remove the growth reduction.



Root length of seeds germinated in recirculation water after various treatments



Measuring in practice (equipment Gademan)

### Break down of crop protection agents

The combinations of hydrogen peroxide and UV radiation treatments proved to be able to break down most crop protection agents for a large part. This offers opportunities to further purify remaining discharge water.

### Next actions

Based on the promising results so far a duration test on rose is planned. In the duration test we will use the most effective combination of peroxide and UV radiation. We will check whether the growth reduction is permanently removed and to what extent the amount of discharge can be reduced. On the remaining discharge we will study the effects of extra treatment on any remaining crop protection agents.

### Partners

This research is conducted by Wageningen UR Glastuinbouw in cooperation with Priva, Bruine de Bruin and W. Gademan.



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