



# Lab tests and model calculations

## Lab test development

Many tests have been developed with or by WUR Greenhouse Horticulture. Some examples are:

- A quick phytotoxicity test to assess plant reaction to suspected substrates or solutions.
- A pH buffer capacity test to assess the amounts of acid or lime which will stabilize substrate pH.
- An improved degradation test to find the substrate degradation rate under conditions of ample nutrients, oxygen, temperature etc.
- Root oxygen uptake to continuously measure root oxygen uptake rate of intact plants.

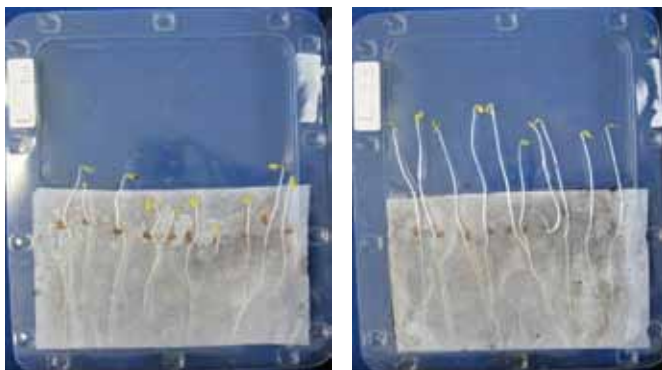


Figure 1. Phytotox method.

## Model calculations

Many recurring tests can eventually be used for modelling. In that way answers can be found without ever repeating tests. Examples are:

- A mixing model to predict properties of mixes, based on the properties of constituents.
- A plant uptake model to predict water and nutrient supply based on climate while recirculating drain water.
- A root oxygen uptake model to predict which substrates will limit air transport in containers or slabs in combination with water content.
- A water transpiration / transport model to predict when transport is too slow to meet plant uptake (even with ample water just cm's away).

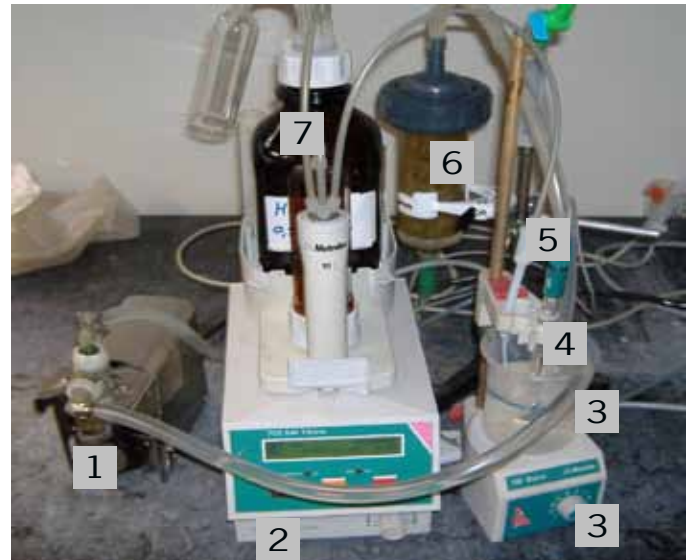


Figure 2. The pH buffer method for KIWA.

## Adapted tests

Many existing test have to be slightly adapted to better meet the needs of a specific producer/product. WUR Greenhouse Horticulture helps producers to comply to norms otherwise unattainable and delivers measuring methods which make sense to users of the tested products.



Figure 3. The CEN method for stability (OUR).

### More information

#### Wageningen UR Greenhouse Horticulture

PO Box 20, 2665 ZG Bleiswijk  
Violierenweg 1, 2665 MV Bleiswijk  
T +31 (0)317-485606, F +31 (0)10-5225193  
E [glastuinbouw@wur.nl](mailto:glastuinbouw@wur.nl)  
[www.glastuinbouw.wur.nl](http://www.glastuinbouw.wur.nl)