

Sampling pots and containers

The basis for
resilient growing

Testing for Life

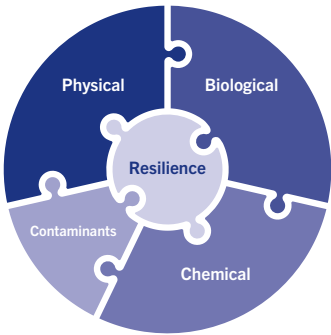
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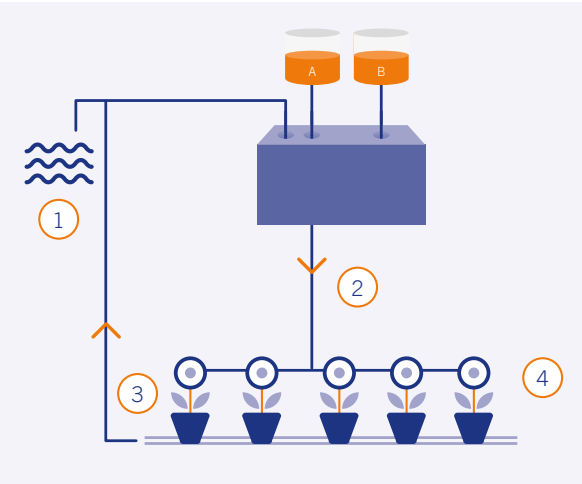
Why potting soil and water testing?

More and more growing media contain renewable resources. This brings new challenges, such as understanding what nutrients are available or how the pH fluctuates during cultivation? Eurofins Horti provides analytical data to solve the puzzle of resilient growing.



Regular analysis of starting water, substrate and crop provides essential insight during cultivation. Especially when using new mixtures, it is very important to know how the chemical, physical and biological properties react, for example N-immobilisation or the availability of calcium and trace elements.

Where to sample, what to sample, and how often?
This white paper provides the answers.



Basic water ①
Understand the quality of the water you are using for irrigation. *Package 610 and 612*

Drip water/nutrient solutions ②
Make sure that your crop always gets the right nutrients. Adjust the feeding schedule if necessary! *Package 515*
Gain insight into nutrient levels in recirculation/return water. *Package 510*
Ensure there are no harmful micro-organisms in the water. *Package 151 to 183*

Growing media ③
Regularly check what is happening in the pot: what is the pH, how many nutrients are available? *Package 310*

Plants ④
Monitor plant health: is the plant taking in enough nutrients, are there no (latent) fungi and bacteria? *Packages 801, 560, 780*

Disinfectant
Do you have a disinfectant? Check that it is working properly to avoid unexpected problems. *Package 709*

MAKE A PLAN

Keep your finger on the pulse with a sampling schedule. Some analyses should be done weekly; others less frequently. Adjust the plan if there are crop problems.

Frequency	Irrigation Water				Substrate Mixture				Plants	Disinfector
	Basic water		Nutrient solution	Recirculation water	Standard	Peat				
	Well water	Other				>50%	<50%			
							N-immobilisation			
							low			high
weekly							310 ¹⁾			
fortnightly			515	510			310	310 ¹⁾		
monthly				160	310 ²⁾	310 ²⁾			810/560 ²⁾	
yearly	612	610								709
incidental	612 ⁴⁾	610 ⁴⁾	151 t/m 183 ³⁾	151 t/m 183 ³⁾					780 ³⁾	

- 1) Sample weekly for the first six weeks, after which fortnightly is sufficient.
- 2) For warm or fast-growing crops, sample every two weeks for extra assurance.
- 3) If growing problems occur, sample packs 151 to 183 (DNA Multiscan) and/or pack 780 (Plant Doctor). Sample at a fixed frequency for extra certainty to monitor for the presence of pathogens if at risk.
- 4) In case of changing water source (e.g. from rain to surface water).

Testing package	Package	Parameters
Irrigationwater		
BasicWaterCheck	610	pH, EC, NH ₄ , K, Na, Ca, Mg, NO ₃ , Cl, S, HCO ₃ , P, Fe, Mn, Zn, B, Cu, Mo, Si + total and temporary hardness
BasicWaterCheck + Fe	612	same as 610 plus Fe-totaal
NutrientSolutionCheck	515	pH, EC, NH ₄ , K, Na, Ca, Mg, NO ₃ , Cl, S, HCO ₃ , P, Fe, Mn, Zn, B, Cu, Mo, Si
RecirculationWaterCheck	510	pH, EC, NH ₄ , K, Na, Ca, Mg, NO ₃ , Cl, S, HCO ₃ , P, Fe, Mn, Zn, B, Cu, Mo, Si
Substrate Mixture		
PottingSoilCheck	310	pH, EC, NH ₄ , K, Na, Ca, Mg, NO ₃ , Cl, S, HCO ₃ , P, Fe, Mn, Zn, B, Cu, Mo, Si
Plant Material		
CropCheck	801	Dry matter, N-total, K, Na, Cl, Ca, Mg, P, S, Fe, Mn, Zn, Cu, Mo, B + additional Si
PlantsapCheck	560	Brix, pH, EC, NH ₄ , K, Na, Ca, Mg, NO ₃ , Cl, S, P, Fe, Mn, Zn, B, Cu, Mo, Si
DNA Multiscan	151-183	Many types of fungi and bacteria (See the website for more information)
Plant Doctor	780	General diagnostic testing by our Plant Doctors
Disinfectant		
DisinfectantCheck	709	Aerobic plate count, total fungi, yeasts + moulds



HOW TO TAKE A SAMPLE?

Sampling is better done by hand. If necessary, you can use a soil auger, but be careful not to damage the roots or pots/containers.

- Sample at least 40 handles from 40 different pots and collect $\frac{1}{2}$ - $\frac{3}{4}$ litre of material.
- Choose pots evenly distributed throughout the greenhouse or container field.
- Sample equivalent plants.
- If drippers are present, move the dripper and collect soil from underneath it.

Where to take the sample?

- Always take the sample in the middle of the glass or container, i.e. do not sample from the top third or bottom third of the container.



Which method?

Always take a sample by hand in the following situations:

- When the pot is lower than 7 cm in height.
- In the case of an intermittent flooding system.
- If slow-release fertiliser granules have been mixed into the potting compost.
- If there is a risk of serious root damage (e.g. tubers and bulbs).
- If growing bags may be damaged.

By hand

Take the sample as follows:

- Remove the plant from the pot and sample the moist active root zone by removing soil with your thumb from top to bottom (under the top loose potting soil or dry layer).
- If slow-release fertiliser granules are present, keep the granules out of the sample if possible and take care not to damage the granules.

Using a soil auger

Take the sample as follows:

- First remove the top loose potting soil or dry layer and sample the moist active root zone.
- Drill with a twisting motion, centred between the centre and the edge of the pot.

Shipping

Send the sample in a plasticised (soil) bag to: Eurofins Horti, Binnenhaven 5, 6709 PD Wageningen, The Netherlands



Watch the video 'How to take a sample'

