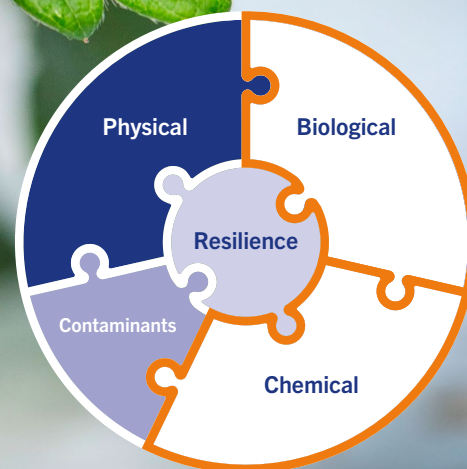




Horti Solutions

Understanding water quality

To manage water responsibly and determine the right fertilisation strategy, you need to know how high the quality of the water is. Eurofins Horti analyses water for both chemical and microbiological composition.

The chemical composition of water is essential in determining the correct fertilisation plan, as optimal growing conditions ensure optimal quality and yield. Good and sufficient water is the basic requirement.

For all crops, irrigation water should contain limited amounts of sodium and chlorine. In addition, the EC should not be too high. Damage thresholds depend on the crop, growing medium, etc.

If recirculation is used, harmful substances can accumulate in the water. In addition, drippers should not be blocked by contamination, and pathogens such as bacteria, fungi and viruses should not be (re)circulated.

Record water quality by analysing:

- the initial water in the tank, osmosis water, surface water, tap water
- the nutrient solution and drain water (to fine-tune fertilisation)
- the operation of the disinfection system (ozone, UV, etc.).

‘Optimum yield and quality are based on good and sufficient water’

After analysis by Eurofins Horti, you will receive a report with a clear overview of the measured values, along with practical advice. With the results of the analysis, you can take the right measures, whether for fertilisation or disinfection.

CHEMICAL COMPOSITION

Understanding the chemical composition of water is necessary to establish the correct fertilisation plan. Regular analysis of the source water and nutrient solution is essential.

Analysis results are available digitally within one day of sample receipt at the laboratory. You will receive a report with target values, an evaluation of the figures, and (if desired) a crop-specific fertilisation recommendation.

MICROBIOLOGY

It is also important that the biological quality of the water is in order. The cultivation system must be free of pathogens. Viruses, bacteria and fungi can spread quickly through the recirculation or irrigation system. Have the disinfection system checked regularly. You will receive the test report within five to eight working days and can take action if necessary.

Next Generation Sequencing (NGS) allows Eurofins Horti to fully characterise the DNA of the soil and water microbiome, mapping the DNA of many fungi and bacteria.

SOIL LIFE

Phospholipid fatty acid (PLFA) analysis allows the analysis of different groups of microorganisms. PLFAs are only found in living organisms. The PLFA composition of cell walls is unique to different groups. Understanding which PLFAs are present provides information on both the amount of living biomass and the groups of microorganisms present in the water. The method is not suitable for identifying specific species.

FOOD SAFETY

Residue tests play an important role in water quality. These tests determine which active substances from pesticides are still present. Water can also be tested for human pathogens such as E-coli. These tests are often required by legislation and/or certification. Eurofins has separate residue studies for: surface water, drinking water and horticultural water.

Analyses

Basic chemical water analyses consists of the following parameters: pH, EC, NH_4 , K, Na, Ca, Mg, NO_3 , Cl, S, HCO_3 , P, Fe, Mn, Zn, B, Cu, Mo, Si.

Depending on the purpose of use additional parameters are available.

CHEMICAL ANALYSES

Drain-/SlabwaterCheck Basic analysis

DripwaterCheck Basic analysis

BasicwaterCheck Basic analysis + total and temporary hardness of water

WellwaterCheck Basic analysis, Fe-total + total and temporary hardness of water Additional: N-area, Al, F

PurificationCheck Waste water analyses and broad pesticide analysis

Methane CH_4 in well water

Heavy metals Cr, Ni, Cu, Zn, As, Cd, Hg, Pb, Al, Ba, Co, Mo, Se

BIOLOGICAL ANALYSES

DisinfectorCheck Before and after disinfector (number of bacteria and fungi) and total number fungi

DNA Multiscan Common plant pathogens

PlantDoctor Virus, fungi and bacteria

Human pathogens E. coli, coliformen, enterococci

Soil Life Monitor Microbial biomass, total bacteria, gram+ bacteria, gram- bacteria, actinomycetes, total fungi, arbuscular mycorrhiza, protozoa, fungus-to-bacteria ratio, gram+/gram-ratio, Shannon-Wiener index

Microbiome Analysis of all known fungi and bacteria via DNA NGS technique