GREENHOUSES WITHOUT WATER POLLUTION FEASIBLE

A four-year research project conducted by WUR Greenhouse Horticulture in Bleiswijk shows that it is possible to grow cucumbers and bell peppers for a whole year without discharging any wastewater.

PHOTO: ERIK VAN OS

Horticulturists water their plants using a solution of nutrients such as nitrogen and phosphate, and then recycle the excess water. However, this causes salts to accumulate in the water, due to the salinity of surface and groundwater in the western Netherlands. So most horticulturists dump the water after three to four months. 'That is not necessary', says Wageningen Plant Research researcher Erik van Os.
For a start, horticulturists must ensure they can collect sufficient rainwater to provide their plants with sodium-free water. Secondly, the rinsing water used to clean the filters and the new substrate (artificial plant bedding) can be reused rather than dumped. Thirdly, the water in the substrate should be released slowly so the drains don't overflow. These measures will enable horticulturists to use the same water for a year.
The research is in line with Dutch legislation, which requires horticulturists to gradually stop discharging their wastewater into surface water. By the year 2027, they will not be allowed to discharge wastewater containing nitrogen and phosphate.
It is not yet feasible to recycle all the water, according to Van Os. 'Previously, horticulturists would dump about 1000 cubic metres of water per hectare of greenhouse per year,' says Van Os. The horticulturists have managed to reduce that to 100 cubic metres. His proposal would bring it down to 10 to 20 cubic metres. **AS**