

Cleaning and checking the irrigation system



Before cleaning

Grodan takes its position in respect to sustainable cultivation seriously. Before cleaning the greenhouse please ensure that appropriate steps have been taken to minimise the emission of cleaning agents to the environment. For more information on emission and environmental policy where it applies locally we advise that you contact your local Environmental Officer.

Use chlorine bleach (against organic organisms) and nitric acid (against inorganic pollutants).

- Check if your drippers can stand a chlorine/ acid treatment (if not, ask your dealer for the cleaning procedure).
- Carefully read the labels of the chemicals prior to use.
- Prevent contact between these substances (danger of lung burning and explosion).
- Prevent the irrigation lines from becoming dry.



Preparation

1 Clean the mixing tanks and the irrigation system.

2 Solution can be made in the mixing tanks: remove pH meters and put them in a pail of water, also remove the EC electrodes.

3 If you have a drain system, fill up the drain basins with clear water so that the concentrated chlorine or acid will not affect the concrete.

4 Mix 4.5 litres of 10% concentration chlorine or 3,0 litres of 15% concentration chlorine in 100 litres of water. This solution has an EC above 10 and a pH between 10 and 11.

5 Add 3 to 5 litres nitric acid (38%) to 100 litres of water. A solution of 3% gives a pH of 1.5 and a solution of 7% gives a pH of 1.0 (depending on the quality of the water). The EC is between 7 and 9.



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Cleaning

- 1 Flush the main and secondary pipes with clean water.
- 2 Apply the chlorine solution: ready when the last dripper has pH >10.
- 3 Leave the system filled for 24 hours, do not irrigate.
- 4 Flush after the chlorine solution: rinse the pipes and mixing tanks with clean water, irrigate for some time.
- 5 Add nitric acid and trickle shortly once per 3 hours to flush out chalk precipitation. Only run the irrigation system when the pipes are clean of any organic matter and the drippers dirty.
- 6 Flush the system thoroughly with clean water, no residues of cleaning product may remain.
- 7 Dip the irrigation pins in disinfectant solution for 5-10 minutes (when very dirty up to 30 minutes).

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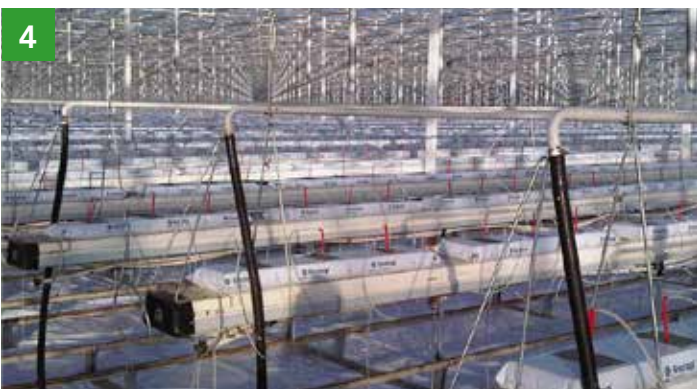
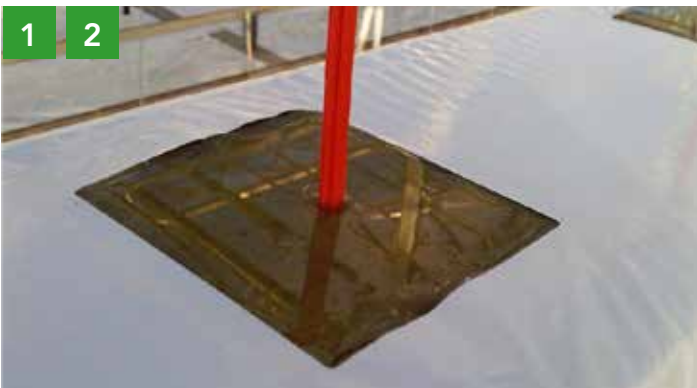


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Checking the level of variation

When clean and before the new plants arrive it is a good idea to check the uniformity of the distribution system.

- 1 Select 10 drippers from the first, middle and bottom irrigation line of a chosen irrigation section.
- 2 Place irrigation pins into empty bottles at various locations in the greenhouse.
- 3 Irrigate two or three times. Then use a measuring cylinder to record the volume of the solution in each bottle
- 4 Adding up the volume of these 30 drippers provides a good insight into the output per section.
- 5 Go to www.grodan.com/irrigation and enter the data on the 30 drippers to calculate the variation:
 - 5% variation is good, no action is required.
 - 5% to 10% variation is poor, it is recommended that action is taken to correct this.
 - More than 10% variation is extremely poor and will result in uneven slab water contents and poor water management capabilities if action is not taken.