

AHT Low temperature Amorphous Ribbon Infrared Heating for the Agricultural Sector



Tests

The Dutch Ministry of Economic Affairs as well as some private agricultural companies have financed an extensive series of tests at the Delphy Improvement Centre in Bleiswijk in order to do research into energy saving and production efficiency during the process of growing plants. In the tests AHT infrared heating mats were installed in several growing tables as the main and only heating source. The heating mats were located directly under the pots, a potting soil temperature sensor was placed per growing table to be able to control the pot temperature. Tests were carried out between December 2018 and November 2019 with *Zamioculcas* plants.



Results

The results of this test led to the following conclusions:

- 59% less energy consumption than with traditional tube heating
- Completely fossil-free energy consumption
- Shortening the cultivation period by approx. 4 weeks
- Fuller plants

The technology

AHT heating mats consist of thin flexible amorphous metal ribbon strips with unique isotropic properties, 25/1000 mm thick, which are double insulated and have much higher hardness, higher elasticity, strength and corrosion resistance compared to normal metals that have a normal crystalline molecular structure with anisotropic properties.

AHT Amorphous metals, also known as glass metals, have more free ions available than normal metals, which makes it function as a superconductor. When connected to a voltage source, it emits long-wave (50 μm - 1 mm) infrared radiation. Given the geometric shape of the metal strips, there is a very favourable heat flux density (flow of energy per unit area per unit time).

By varying the distance between the strips, which are fixed on a plastic grid, or by varying the width of the amorphous ribbons, any desired capacity per m² can be realized. The heating mats are available in various sizes, voltage: 230 V.

Temperature range: up to max. Approx. 60 C, temperature can be set accurately to 0.1° C based on local sensors placed in the potting soil and / or around the plant.

Advanced Heating Technologies

AHT-Netherlands, part of the AHT-International Group based in Lugano (Switzerland), is active in more than 50 countries with sustainable infrared heating systems based on amorphous metals in the agricultural sector, the built environment (construction and infrastructure) and sports fields.

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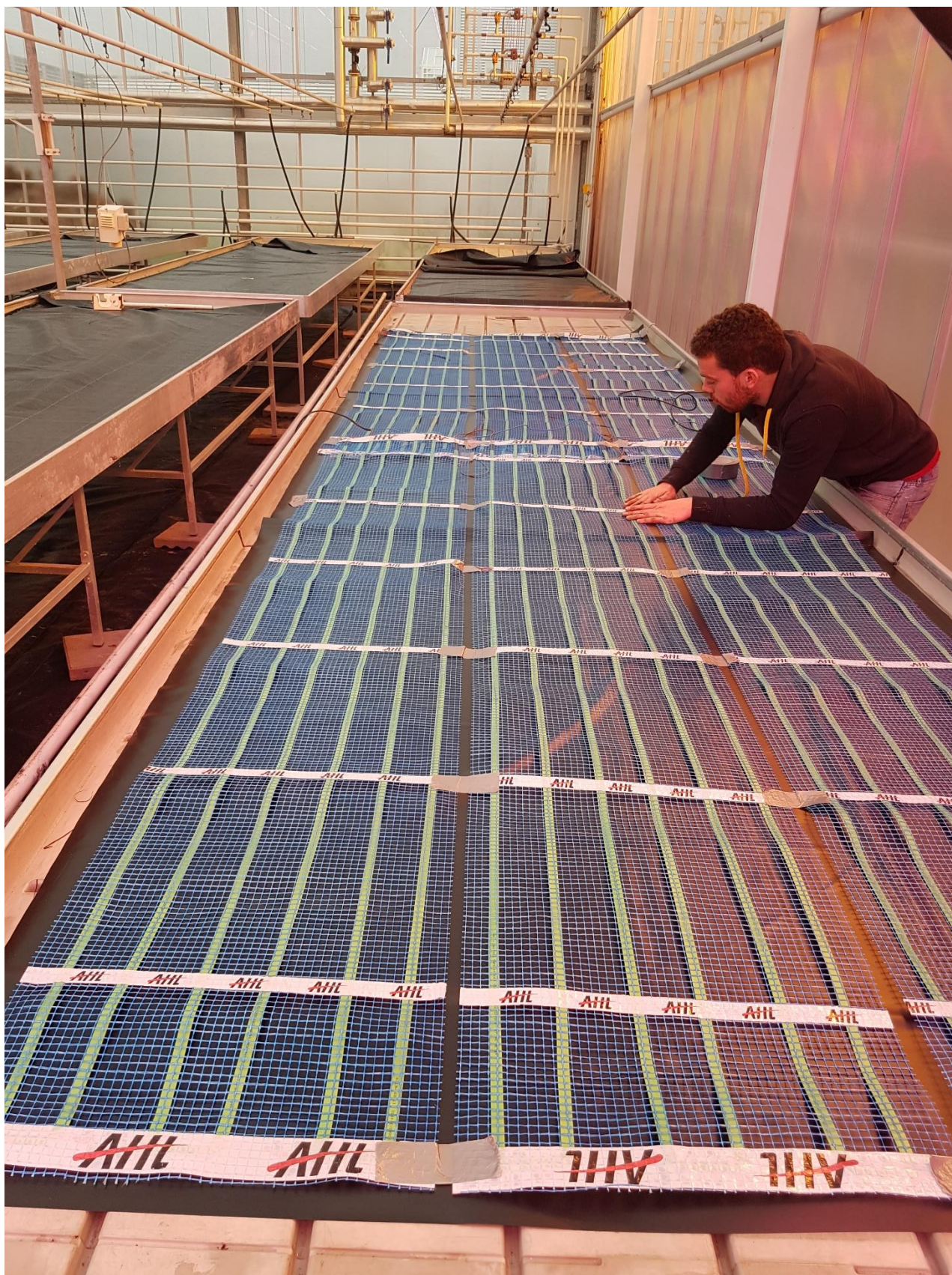


Advanced
Heating
Technologies

AHT-Netherlands BV
Postbus 2224
6802 CE Arnhem

www.aht-netherlands.com
info@aht-netherlands.com
+31648159526

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