



Workshop Hydroponics ▲



# Workshop Hydroponics

During the Hydroponics workshop, Marc Celis of Rijk Zwaan, Matthijs Blind of Research Station Zwaagdijk and Julien Van Linden of Cortoni BVBA (a Belgian grower) gave an introduction.

Marc gives us a worldwide overview of existing hydroponic systems. Roughly three groups can be distinguished: Nutrient Film Technique (NFT),



NFT system ▲



Floating system ▲



Aeroponics ▲

Floating System and Aeroponics. For all three systems indoor and outdoor alternatives are available. The indoor techniques are often more sophisticated than the outdoor ones.

Research Station Zwaagdijk has conducted trials with different crops for three years in an outdoor Floating System as well as a Fixed Gutter System. "The main advantages of hydroponics are increased control of growth and development. This results in a more reliable yield and a cleaner product with less input of labour and chemicals. Especially the reduced use of chemicals will contribute positively to complying with the future restrictions as a consequence of the EU Water Framework Directive. One of the attention points appeared to be the wind: a part of the plants was blown out of the gutters.

Cortoni BVBA is one of the largest lettuce growers in Belgium. Until now they have grown their product in the soil. Last year they started a first hydroponic trial, with an outdoor fixed gutter system on 2,000 m<sup>2</sup>. Generally speaking they are happy, especially regarding the significant reduction in chemicals needed.

### NFT system

The NFT system is a hydroponic technique whereby a very shallow

stream of water containing all required nutrients is recirculated past the bare roots of plants in a watertight gully. The stream is ideally not more than a film of water to ensure that the thick root mat that has developed in the bottom of the channel has an upper surface which is in contact with the air. This ensures a sufficient supply of oxygen to the roots of the plants.

### Floating system

The floating system is a system whereby Styrofoam floats are covering a pond containing water with a nutrient solution. The plants are growing in the holes of the Styrofoam floats. The plants are normally transplanted twice. Final spacing is between 12 and 25 plants/m<sup>2</sup> on a 60 x 120 cm. For Salanova it is possible to go up to 30 plants/m<sup>2</sup>.

### Aeroponics

Aeroponics is the process of growing plants in an air or mist environment without the use of soil or an aggregate. Unlike NFT and the Floating System, which use water as a growing medium and essential minerals to sustain plant growth, aeroponics is conducted without a growing medium. The key to root development in an aeroponic environment is the size of the water droplets. A variety of misting techniques is available on the market. The Aeroponic system is an indoor system.