FEEDING THE WORLD

PLANT BREEDING

Responding to cultivation threats with high-tech horticulture

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Plant breeders are working hard to prevent major problems in the cultivation of greenhouse vegetables. All their activities and vision on cultivation is focused on the prevention of crop losses caused by plant pathogens such as bacteria, viruses and fungi.

RijkZwaan presented a range of ideas, based upon the company's work on preventing and suppressing plant pathogen symptoms in tomato, cucumber and lettuce.

Protocol for healthy seed

After the first outbreak of the bacteriological disease Clavibacter michiganensis subsp. michiganensis in tomato in 2006, a committee of plant breeding companies was formed to prevent a second outbreak of this highly infectious disease by improving the propagation chain. This has led to a solid approach to managing the risks of Clavibacter michiganensis subsp. michiganensis in the tomato propagation and production chain by a Good Seeds and Plant Practices (GSPP) hygiene protocol and a GSPP certificate for seeds propagated according to the GSPP standard.

Virus in cucumber

Cucumber is grown in many countries, in different varieties and under various conditions. RijkZwaan has launched two concepts to suppress pathogen symptoms: Blue leaf (promotion of chlorophyll and suppression of yellowing) and BonDefence (highly resistant varieties to Cucumber Green Mild Mosaic Virus (CGMMV)). The breeder stresses that suppression of symptoms is not a cure for the disease. As varieties show symptoms if the pressure of virus particles is high, risk awareness and attention for hygiene during cultivation and crop change remain important.

Cultivation on water

Growers cultivating lettuce in soil are facing new challenges. Examples include the demands by supermarkets for lower residue levels of plant protection products (PPP) than laid down by law, reducing the risk of chemical contaminants from the soil , new regulations on phosphorus and nitrogen emissions to surface water, and consumer demands for sustainable products. Cultivation of lettuce on water might offer a solution. This system makes it possible to grow a residue-free product, to use water efficient, to prevent emission of water and nutrients to sewage system or surface water, and to decrease labour costs.

Many small steps

The chain has to overcome the abovementioned threats and new techniques in seed production, plant breeding and cultivation might provide the answers. The combination of numerous small steps can help to produce a healthy and sustainable high quality crop.

Partner in this seminar: RijkZwaan and Horti Alliance