

Agronomist Thomas Cazin visits India & Sri Lanka

We recently spoke to agronomist Thomas Cazin, who for the last couple of months has been visiting our production sites in India and in Sri Lanka. In addition to leading in-house training seminars, Thomas visited some local growers who were lucky enough to benefit from his in-depth knowledge of soilless agriculture :

"Today marks exactly 2 and a half months since I embarked on the Biogrow journey, starting in India and finishing in Sri Lanka. During the first two months in India, I got the chance to immerse myself in the local culture and visit the substrate factories. This allowed me to gain a deeper understanding of the processes, the quality controls, and their significance. I also had the opportunity to understand the challenges faced by Indian farmers through extensive field visits where we were able to give them culture-specific technical support. The majority of greenhouse crops were tomatoes, cucumbers, bell peppers, and strawberries. However, a common observation across most farms was the lack of understanding regarding the use of soilless substrates."



Given India's water issues, high fertilizer costs, and a highly fluctuating market, farmers often attempt to irrigate similarly to traditional open-field methods, disregarding drainage as being unnecessary. Yet, it's impossible to manage the fertilization and irrigation of coconut coir substrates in the same way as in open fields. Key to soilless substrates is proper drainage.

Achieving a specific daily drainage percentage initially ensures meeting the plant's water and nutrient requirements, while also preventing toxic salt concentrations in the substrate that reduce growth. I noticed that many farmers were under-irrigating, leading to water and salt stress. On the other hand, some farmers were irrigating sufficiently but using competing open-top bags without drainage holes. This resulted in root anoxia, leading to plant mortality.

The best root results were observed in Biogrow bags. However, significant efforts are needed to train farmers on soilless irrigation and fertilization techniques.



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"Handy and affordable sensors for daily use on horticultural companies are simply not available... for now."

Development of a virus sensor

After a recent breakthrough, it seems only a matter of time before growers have a handy virus sensor that provides quick insight into the presence of pathogenic viruses in their water system. "We are still one hurdle away from a world first," says project leader André van der Wurff of Normac Groen Agro Control. Together with Kees Koopal from Sendot Research, he provides an update on the daring project, the finish line of which is in sight.

You can certainly call the 'Development of virus sensor' project daring. Because although a virus sensor in itself is not unique, the existing devices are far too large and too expensive to even consider practical use on horticultural companies.

Sensor functions

"Handy and affordable sensors for daily use on horticultural companies are simply not available," says Van der Wurff. "While there is a great need for it worldwide, because water-borne viruses are a growing problem in professional horticulture and limit the options for recirculating water. Glastuinbouw Nederland and Plantum have recognized this and made this complex project possible. We are very pleased to have cleared another crucial hurdle. The virus sensor has been implemented and is functioning. That in itself is a world first. For repeated use in practice, we now have one more hurdle to overcome: rinsing the detector."



Active and inactive virulent material

The project leader tells his story together with Kees Koopal, R&D manager at sensor builder Sendot Research. "It took blood, sweat and tears to translate the large, existing laboratory concept into a handy, well-functioning practical instrument that provides clarity in almost real time," says Koopal. "For the first time, fiber optics is used, in which our company specializes." Visual detection is accomplished by loading the detector with antibodies and bringing it into contact with water that may contain virulent material. These bind to the antibodies and are treated with a fluorescent substance with freely present secondary antibodies. This makes them 'readable' for the optical sensor. What is special is that the sensor can distinguish between active (strongly bound) and inactive (weakly bound) virulent material. That distinction is essential, as explained in previous publications. See the links below this article.

One more step needed

"Based on this principle, the sensor can detect Cucumber Spot Virus, PlumV and Tulip Virus-X with specific antibodies," Van der Wurff continues. "What still needs to be developed is a regeneration method. This is a flushing method that allows us to discharge the detector so that it is clean and ready for the next measurement. This requires more than a bowl of water, so there is still some work ahead."

Follow-up project requested

Because the original project has now been completed, the project group - again with the support of Plantum and Glastuinbouw Nederland - has submitted an application to the Top Sector for a follow-up project. Given the enthusiastic responses from the organizations and because of the enormous potential of a handy virus sensor for global horticulture and efficient water use, Koopal and Van der Wurff have high hopes for the green light.

"We will know at the end of this year whether we can continue," the Sendot researcher concludes. "Then we could pick up the thread in the spring of '24."

Source : www.glastuinbouwwaterproof.nl/



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" Not only is the coconut a sustainable product, but now we will be using renewable energy in the form of **solar panels**, to run some of our grow bags production. While full sustainability is our long-term goal, every step we take towards preserving the environment, helps us protect our planet for future generations."



China & Sri Lanka technical visit

With coco coir substrate sales growing all the time in China our technical advisor for the Chinese market Mr Kun Yang recently visited Biogrow Lanka. He was given a tour of the production sites, met with the Biogrow Lanka management team and gave a presentation on current developments & challenges in Chinese agriculture.

While visiting our Sri Lanka factories Kun was able to share his knowledge on the Chinese agricultural market. Thanks to the direct contact he has with local growers he is kept up-to-date with all the growing requirements of our Chinese customers. The great advantage of this local knowledge is Kun can feed the information directly back to both Indian and Sri Lankan production sites to ensure we offer the best service and technical support possible to the Chinese hydroponic growers.

We'd like to say a big thank you to everyone at Biogrow Lanka for giving Kun such a warm & hospitable welcome.



News in brief:

- Phase 1 of solar panel installation completed in Sri Lanka
- New renewable energy project launched by Biogrow India
- We are proud to accompany the team Les Échappées Belles in the 2024 4L Trophy race. More news to come soon.



Come & meet us:



- **EXPO AGROALIMENTARIA GUANAJATO**

When : 7th to 10th November 2023

Where : Irapuato, Guanajato, Mexico

- **AGROVISION INDIA**

When : 24th to 27th November 2023

Where : PDKV Ground, Dabha, Nagpur, India

- **KISSAN AGRI SHOW**

When : 13th to 17th December 2023

Where : PIECC, Puna, Maharashtra, India

- **FARM TECH ASIA**

When : 19th to 21st January 2024

Where : Jobner, Jaipur Rajasthan, India

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