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## Feeding Asia's future

Second session of Asiafruit Congress ON explores high-tech sustainable solutions driving the future of fresh fruit production



With pressure on land and resources on the rise and the effects of climate change increasing, the fresh produce industry has been developing innovative solutions so it can continue to deliver a quality product.

These solutions took centre stage during Green Future: New Production Models, the second session of Asiafruit Congress ON, Asia's leading conference event for fresh produce decision-makers.

To begin the session, viewers from around the world were introduced to Ernst van den Ende, managing director of the plant sciences group at Wageningen University & Research, one of the world's leading agricultural research institutes.

Van den Ende provided an overview of Wageningen University & Research's approach to developing production innovations.

"Most of the research focusing on agricultural production in Wageningen is under the umbrella of more, with less and better," said van den Ende.

"We need to produce more per square metre in order to feed the world but at the same time we have to do that with less inputs and we have to do it better, safer more transparent and healthier."

To achieve this Wageningen has looked to deliver innovation in a range of areas such as vertical farming, the use of robotics and drones, data science and artificial intelligence, strip farming and greenhouses.

"We first look at the ecological principles and then we try to think, what kind of technology fits into the system to use the ecological principles? That is really changing the production systems a lot," said van den Ende.

"Technology plays an important role because if we are able to modernise agriculture maybe that's a more appealing job for youngsters, than it is today."

The focus then turned to vertical farming and Jan Doldersum, manager of chain and retail of Rijk Zwaan and Jarno Mooren, plant specialist of City Farming,

Signify, shared the advances being made in different areas of the sector.

Doldersum spoke of the role of vertical farming in meeting the pertinent challenges of food safety and product availability and Rijk Zwaan's efforts to provide the right crop.

"Selecting the right crop and variety is crucial, its best quality and maximum yield," Doldersum.

"What is the exact role of Rijk Zwaan in these kinds of projects? Apart from providing the right genetics, we offer unique traits to overcome issues in cultivation. We also provide other services like advising crop and cultivation management and market insights."

Mooren focused on the progress in the use of high-tech, dynamic lighting, a technology he said gave growers flexibility, controllability and predictability.

"With flexibility you can optimise the spectrum for different varieties. For controllability you can enhance

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coloration or red lettuce for example,” said Mooren.

“For predictability, you can do your yield forecasting more accurately. You can speed up or slow down your growth cycle, if that's needed.”

Some Asian countries such as Japan have already embraced vertical farming but Mooren, said it will become a solution not just for large cities in Asia but around the world.

“I think vertical farming is relevant not only for Japan. I think it's also for other mega-cities in Asia, and even around the world. Everywhere has a need for fresh high quality food,” said Mooren.

Peter Landon-Lane, director of innovation and technical for T&G Global, and Gavin Ross, general manager – marketing and innovation at Plant & Food Research, finished the session addressing the issue of global warming and breeding hot climate-tolerant fruit varieties.

The Hot Climate Program (HCP) is a partnership between New Zealand's Plant & Food Research, the Institute of Agrifood Research and Technology in Catalonia, Spain and

Spanish grower association Fruit Futur, established to address the challenges apple and pear growers were facing with a warming climate.

The programme has bred a number of hot climate-tolerant varieties and T&G Global joined the programme last year to commercialise these new varieties worldwide.

“Global warming is a huge issue for all fields of agriculture and growing apples is really no different,” explained Ross.

“What is different about this programme is that right from the outset, breeding selections were made in Spain in those very hot growing conditions that the industry is confronting today.”

Landon-Lane said there are already trial plantings of the first variety being released in Spain, continental Europe, the UK and in Australia with Spain expected to be the first country to reach commercial production.

Ross and Landon-Lane said there were already more “exceptional” apple and pear varieties in the pipeline with promising traditional and heat-resistant characteristics.

“The selections coming from this programme, not only must they have jumped that hurdle around hot climate suitability, but they must outperform all those other varieties that are already on the market from other production regions around the world,” said Ross.

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