

Cooperation in technology and breeding

Efficient sticking system reduces pressure in transplant period

There's a 10-12 week window for sticking bedding plant cuttings. This can be a hectic time which is sometimes made more difficult by a shortage of manpower and proper space. A new sticking system offer growers a helping hand. The project is a joint venture between two companies: one developed the basic components that automate the system and the other provides added value by supplying both rooted and unrooted cuttings.

Sales manager Robbert Jan in 't Veld of Dutch manufacturers Visser Horti Systems proudly reports that 25 large American and Canadian companies have already installed an AutoStix sticking machine. And they are all very happy with the results. The concept was presented at IPM in 2017 and won the Innovation Award

at GreenTech in Amsterdam in June 2018.

"There are already several pilot projects running in the Netherlands," in 't Veld says. "Our decision to start in America stems from the fact that the labour problem is even worse there than here. And that's precisely where automation can help. There is a shortage of skilled workers and labour costs are high, and that has been causing growers a lot of stress. And to be honest, I think Americans are a bit more open to innovation than their Dutch colleagues."

Automating sticking

But first, a brief look at the technology. The system consists of a transplanter and a matching strip, both patented by Visser. The bottom edge of this strip is the common denominator in the system. It can hold cuttings with various stem diameters, meaning that a

nursery can stick different types of plants without having to adjust the machine. The strip simply goes into the machine, which cuts off each cell separately and plants it (plus the cutting) into the plug, pot or tray, regardless of the medium used. Also important is the fact that the cutter in the machine doesn't touch the leaves. The special gripper picks up the cell and not the plant, as often happens in conventional systems. Strips are available with 51 or 34 cells. The company recently launched the 51-ST strip, which is specially designed for cuttings with thin, short stems, such as Impatiens. The machines can handle about 11,000 cuttings per hour.

Nespresso

Marketing manager Charlotte Langerak likens the system to a Nespresso machine. "You have one machine on which you can make different types of coffee. The pods are all the same, it's only what's inside them that differs. The concept is so simple and innovative that it has widespread appeal."

What's more, the strips are biodegradable. The plastic is easily absorbed into the substrate of the end product through the process of cold composting.

Rooting without substrate

Plant breeder Dümmen Orange immediately recognised the added value the system delivers. By contributing its own knowledge of plant physiology, it developed a concept that enables it to supply growers with ready-to-use rooted cuttings. This Basewell technology includes a special rooting process in the AutoStix strip called "contactless rooting". Perry Wismans (Dümmen Orange's Global Head of Floriculture Innovation) is very enthusiastic: "It's fantastic to be able to offer our customers something completely new. And the benefits are obvious. Growers can reduce complexity within their organisation by outsourcing part of the cultivation process – the rooting. They let a specialist do the difficult work, which takes the pressure off them in terms of labour and space."

Dümmen Orange uses this technique for all vegetatively propagated bedding plants.



Charlotte Langerak, Robbert Jan in 't Veld and Perry Wismans regularly visit the North American growers who use the "iPhone of ornamentals".



The strip is the common denominator in the new transplant system. It can be processed mechanically or manually.

The product is suitable for both large and small growers because besides the automation option, the strips can also be potted up manually. The cuttings are then supplied in individual cells (cartridges).

Less labour needed

Wismans expects to sell between 25 and 30 million Basewell cuttings next season. “They are sent from our offshore production sites directly to the growers, who can stick the cuttings straight into the final pots. Not only do growers save on the labour normally needed for the intensive cutting and rooting process, but they also free up space that enables them to focus on more profitable activities such as raising and finishing.”

What’s more, the strips help get the plants off to a uniform start. Each plant is supported by the plastic cell immediately after potting, and in the automated system the machine inserts each cutting into the substrate to exactly the same depth. “So instead of ten

workers working individually you have just one machine that’s always consistent. You really do notice this quality in the end product.” Wismans thinks there is even more to come. The R&D department is working hard on various innovations for the cuttings. Such as a special coating that protects the roots and supplies nutrients during transportation, for example.

Clean and safe

North American growers and pilot nurseries in the Netherlands love the system. Customers of bedding plants are also embracing contactless rooting in combination with the biodegradable strips as it fits in with their philosophy of sustainability and concerns about contaminated and environmentally unsound potting compost. This method also makes the production chain a little more manageable – in other words, it reduces the risks. Once again, Wismans points to the uncertain factor of labour. “The number of

workers available in the horticulture sector is falling. Outsourcing the labour-intensive cutting and rooting phase takes away the stress this can cause. And the strips make the cuttings easy to count, so growers get exactly what they ordered. All in the same uniform quality. Needless to say, the losses that arise during the rooting phase are for our account. And we have also noticed that the strips make transportation easier. The product stacks without damaging the plants and the structure of the cells provides plenty of air.”

Bigger stocks

In ‘t Veld adds that the use of the cells also improves the shelf life of the cuttings. “Cuttings arrive at the customer in perfect shape. The products can also be buffered in special buffer trays with water. The cuttings keep well this way – either at the mother plant location or at the nursery – until they are ready to be planted.”



The new technology includes a special rooting process in the strip, known as “contactless rooting”.

Summary

A major breeder in the ornamentals sector has launched a concept consisting of an offshore rooting process and a biodegradable strip. This innovation enables it to supply high-quality rooted cutting material without substrate directly to the grower. The strip itself is suitable for automated transplanting. The sticking machine that goes with it reduces the amount of labour for the grower. Thanks to the uniformity of the system, the machine can plant different varieties without the need for adjustments.