

GROWERTALKS

Cover Story

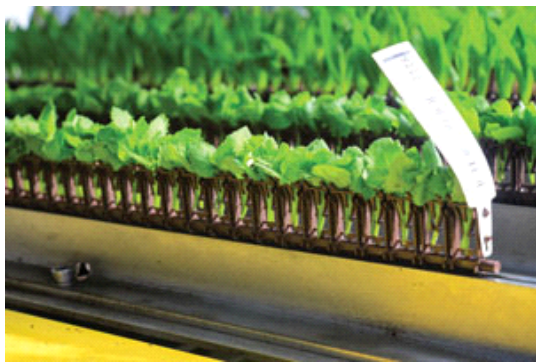
5/31/2017

AutoStix: The Next Big Thing Since the Plug Tray?

Chris Beytes

What you're looking at is an AutoStix strip and it may be as big for unrooted cuttings (URCs) as the plug tray was to seed.

Developed by Visser HortiSystems in the Netherlands in conjunction with the Dutch young plant growers P. van der Haak and Florensis, along with Ball FloraPlant in the U.S., the AutoStix strip is a biodegradable holder that allows URCs to be mechanically planted by Visser's AutoStix machine. The strips are loaded with cuttings as they're harvested at the offshore farms, then are bagged, boxed and shipped north to customers. At the greenhouse, the strips are inserted into the machine, which plants each module (or "clip," as the growers tend to call it) and the cutting it contains.



Pictured: Bacopa cuttings in an AutoStix 51-count strip. You can see the details of how each module holds its cutting and also how cutting placement within the module is critical for a good stick.

The benefit? You can reduce or eliminate the hand-sticking of cuttings, except for very small batches. One person running the AutoStix machine can do the work of 10 hand-stickers. An added benefit is that cuttings can be held for several days if necessary (perhaps even longer) in a cooler or on the bench before planting—something you can't do with bagged cuttings.

The downside? So far, AutoStix strips are only available with Ball FloraPlant genetics. But Ball is working hard to bring more breeders on board, with the hopes that eventually everyone's URC genetics will be offered in strips. Also, the price per cutting is 2 cents higher (more on the economics in a bit).

The system got its first North American beta test this past winter, when three Ball rooting stations (Sant's Greenhouses in Ontario, Tagawa Growers in Colorado and Dickman Farms in New York) and two Ball customers (Costa Farms in Florida and Metrolina Greenhouses in North Carolina) planted a total of about 5

million Ball FloraPlant and Selecta cuttings using the AutoStix machine. GrowerTalks visited Sant's to see the machine in action and spoke to all five to get the story.

How AutoStix originated

The foundation of the system—a strip to hold cuttings for planting—is based on technology Visser has been working on for more than a decade, including the “SNAP” system, which was offered for a short time by The Ecke Ranch.

Ball FloraPlant was looking for a way to help customers be more efficient. Says Business Development Manager Michael Henzler, “Our customers were looking for solutions to save labor on unrooted cuttings. Sticking unrooted cuttings is still very labor intensive.” Knowing of Visser's experiences with SNAP, Michael and Dutch grower Perry van der Haak met with them at IPM 2014 with a concept: a biodegradable strip that would hold the cutting for planting. Visser incorporated those ideas into their strip-handling technology and AutoStix was born.



Pictured: Ron Sant loads 51-count strips into his AutoStix machine. Note the drive rings on the bottom of the strip. “We’re all in” for the 2017-2018 season, he says.

The strip is the key to the system. It starts in two sizes: 34 for larger cuttings and 51 for small ones (both for planting into 102-count trays). You can see in the picture how each module holds the cutting. Strips are loaded into the machine (up to 24 at a time), where they're fed toward six sets of knives and grippers. The knives cut each module loose from the strip and the six grippers plant the modules, much as a regular bedding plant transplanter plants plugs. The 102-count trays are moved into and out of the machine on a conveyor.

Maximum planting speed is about 10,000 cuttings per hour—roughly the equivalent of 10 good manual stickers. Realistically, it's 7,000 to 8,000 including downtime, based on the tests.

After several months and millions of cuttings stuck, the growers mostly like what they see.

“The technology in general works pretty good from our end of it,” says Ron Sant, who planted 1.2 million AutoStix cuttings—about 20% of their total production—this winter. “Once the machine was set up right, we were getting about 95%-plus accuracy on it, so it's working pretty well.”

“We had very good results,” agreed Jim Dickman. Dickman's did the largest test, 1.7 million cuttings. “I like the technology. The machine is very simple and basic. It puts the onus of everything working well back on the cutting farm because they're the ones who have to get the cutting right—you know, size, caliper and installed in the strip properly. As long as they do all those things, our job is quite easy.”

LJ Contillo of Costa Farms calls his overall impression of the technology, “Very positive. [As for the] crops it's good for, I don't see a lot of limitations.”

Art Van Wingerden of Metrolina has more automatic sticking experience than anyone, being the proud owner of five ISO robots, AutoStix's only competition in the category. Those five machines cost \$700,000 and can stick a total of 10,000 cuttings per hour—the same as one AutoStix, which, with conveyors and such, will run you about \$125,000.

Art, who stuck about 800,000 cuttings (of their 70 million) says AutoStix has one weakness to overcome: how well the cuttings are loaded into the strips. "How the machine works—how it clips it off, how it sticks it, all that stuff—[we have] no issues there at all. Our issue is getting that cutting where it belongs in the strip." The other testers agree.

"Strips functioned flawlessly ... so long as the cuttings were inserted correctly and the strips weren't damaged during handling, packaging and shipping," says Costa's LJ.

Tagawa's Bill Kluth mentioned the same thing, saying that they saw some calibrachoa stems that curled upward upon planting, due to being at the edge of the module.

Ball's Michael Henzler says Visser has already designed a tool that should help solve that issue.

The quality of the cuttings and the strips falls squarely on Ball FloraPlant's Las Limas cutting farm in Nicaragua. There, AutoStix has had an interesting benefit: It's increasing the quality and consistency of all cuttings. Michael explained that because the cuttings are visible in the strip, the overall uniformity (or lack thereof) is evident. Tall and short cuttings are obvious. Cutting count is more accurate, too, because it's hard to mess up loading 34 or 51 cuttings into a strip. This impacts all cutting customers, not just AutoStix customers, because Ball says it won't have two sets of specs, one for strips and one for traditional bags. Bagged cuttings will be just as uniform as the strip cuttings.

That brings up another problem several testers mentioned: buffer. If you receive two 51-count strips to plant into a 102-count tray, there's zero room for loss. The growers say Ball (and any other breeder/cutting producer who adopts the technology) needs to find a way to build in some overpack to cover losses.

AutoStix economics

It costs, on average, 2 cents to hand-stick a URC. An AutoStix URC, shipped to your greenhouse, costs about 2 cents more than a standard URC. So the cost of sticking is a wash. Where you will save money is on the number of workers you need to stick cuttings. Three people operating an AutoStix can stick 7,000 to 8,000 cuttings per hour, including downtime. It takes 10 to 12 people to do the same by hand.

For the growers we talked to, the biggest benefit to AutoStix is labor availability, today and in the future.

"I think a lot of [payback] is driven by your labor issues," says Jim Dickman. "If you don't have any labor issues ... are you going to save any money with it? No. We don't have labor issues right now, but we're concerned that New York is going to raise the minimum wage to \$15 an hour ... and finding seasonal labor becomes harder and harder every season."

Costa's LJ Contillo agrees. "Things are changing rapidly with labor availability, work ethic, quality of work and

higher wages in general. So we see this as a tool in the tool box worth investing capital into.”

What’s next?

Four of the five testers say they will use AutoStix next season. Sant’s is “all in” and Dickman’s is committed to 7 million of their 10 million total cuttings—“as long as Ball can supply it,” says Jim. LJ says Costa has a second AutoStix machine in their plan and they’re going to test the strips with their own offshore cutting production.

Metrolina is still undecided. “I’m not ready to give up on AutoStix,” says Art, “Because I do think there’s a place for it. Is there a place for it at Metrolina next year? That I’m not sure of yet.” Admittedly, Metrolina has already invested in the ISO robot technology. Plus, Art says the other breeders need to get on board to make the machine worthwhile. An ISO will plant anything, but AutoStix requires the strips.

Ball knows that and is working hard to get the rest of the cutting producers onboard, says Michael. He reports that, as of press time, most of the high-volume URC suppliers to North America were currently testing the strip system in their production facilities.

“It needs to be an open platform,” he says. “That’s key. When we developed this whole system, the growers right from the beginning said, ‘If you want this to be successful, we have to have more supply choices than just one or two.’” **GT**