



Swiveling Hydro-Stackers allow for easy harvest of fruit.



Aaron Kennel checks on the ripeness of some 'Diamante' strawberries that will soon go home with a U-picker.



Sarah Kennel harvests red-ripe 'Albion' strawberries.

STAND AND PICK

Oregon grower diversifies his farm using Hydro-Stacker to grow berries for the U-pick market

TEXT AND PHOTOS BY JOHN SCHMITZ

People visiting Airlie Hills U-pick strawberry farm are in for a real surprise when they pull into the little “patch” just south of Monmouth, Ore.

There to greet them is not the traditional berry field they may have expected to see but rows of hydroponic Hydro-Stackers. An Oregon grass seed grower looking to diversify his farm, Airlie Hills owner/operator Aaron Kennel, opted for U-pick hydroponic strawberries for several reasons. For one thing, Oregon growers are producing far fewer strawberries than in years past. Another reason is that with hydroponics he can stretch out his crop through October.

And then there's the vertical Hydro-Stacker, which makes picking a lot easier, allowing even the disabled who require mobility aids to harvest their own fruit. Finally, hydroponics requires about a third of the water conventionally grown berries do, Kennel said.

“We only use 500 to 600 gallons of water a day on this whole system. (Field-grown berries require 20,000 gallons to 30,000 gallons per day per acre.) We time it so that everything that goes in is absorbed by the media, with just a little trickle out the bottom.”

Airlie Hills hydroponic farm is a labor-intensive, family-run operation, with Kennel's wife Sarah and their two children, Taylor and Teegan, involved with everything from planting to thinning to marketing the berries.

After researching the hydroponics industry for two years, the Kennels began installing Hydro-Stackers in 2006. Five months later they planted their first starts. "It's really been a big learning process," Kennel said.

When start-up operations wrapped up they had around 15,000 plants—the equivalent of two acres of soil-grown berries—growing on close to a quarter-acre covered with heavy-duty nursery cloth.

"This system allows us to grow 20 full-sized plants in the same space it would traditionally take to grow only two plants," Kennel said.

He did not want to disclose his start-up costs, but did say "it was a lot more than growing (berries) in the ground." He added that day-to-day operating expenses are "very, very low because of how efficient the system is."

Seven-day neutral, everbearing varieties of strawberries, as well as a few vegetables and herbs, are grown in 750 swivel, foam Hydro-Stackers that rise about 5 feet above the ground. This puts the fruit between the knees and shoulders for most people. There are 20 planting sockets per stacker, each filled with a 50-50 blend of vermiculite and perlite to give the plants upright stability and provide wicking action for water and nutrient solutions.

Kennel acquired the rooted cuttings for his first crop from several propagation houses around the country and then had them sent to a greenhouse in Salinas, Calif., where they spent several weeks growing into 8-inch plants. One thing Kennel has learned is that the mid-March planting date this year was a little premature. "It was too early and there was some frost damage. They all came through okay, but it set (the berries) back about a month." He'll be planting three weeks later next year.

The plants receive all of their water, nourishment and protectants through a drip line, with one emitter per stacker. Because practically all of the water and nutrients are taken up as they trickle through the media-filled stackers, there is no recycling.



Top: Joanne Urbigkeit of Salem, Ore., visits Airlie Hills hydroponic strawberry farm for the first time between pickings. She vowed to come back for a future picking. *Directly above:* Sarah Kennel harvests 'Albion' strawberries with a scissor instead of plucking berries by hand.

Strawberries Love Hydro-Stacker

In the United States some 300 farms are growing hydroponic strawberries using vertical grow units called Hydro-Stackers, said Chester Bullock, Hydro-Stacker LLC founder and owner.

Bullock said that Kennel should expect his strawberries to yield a lot more than a pound and a half per socket.

"Our growers will get anywhere from three to five pounds on a plant."

Hydro-Stacker also makes a 25-gallon stacker, called Stacker II, designed to grow more expansive crops like potatoes, asparagus, blueberries and fruit trees. "We try to get people to not grow just one thing because most of us are

U-pick, and when people come in they'll say, 'What else do you have?'"

The Hydro-Stacker is guaranteed for life, "as long as you don't chew on them."

Hydro-Stacker also sells its own proprietary nutrient blend called Secret Sauce, which works with all plants. In July Bullock was putting

the finishing touches on a 10,000-square-foot hydroponics school in Florida, with one planned for central California. "We will teach people how to grow anything hydroponically, from A to Z."

For more information on the Hydro-Stacker, call 941.322.9602, or go to hydro-stacker.com.

Unlike the conventional Oregon strawberry season, which lasts about two to three weeks in June, the Kennel's strawberry crop can keep U-pickers happy and the farm stand stocked from May through October.

"These are all day-neutral varieties, so I'll have pretty much a continuous crop," Kennel said.

As of mid-summer, Kennel said that he is expecting each plant will yield about a pound and a half of berries during the entire season. On his quarter-acre site that works out to a total production of around 11 tons, considerably more than the seven tons per acre obtainable in a soil-grown operation.

As the summer heats up, the Kennels expect berries to ripen faster, allowing them to add a day or two to the original Tuesday-Saturday harvest schedule. Eventually, plans are to restrict production to the top three varieties and schedule exclusive picking times for each.

For better production and bigger berries, the Kennels trim back excess foliage, runners and some immature fruit. "We've found the berries have gotten a lot smaller as the plants have gotten a lot bigger," Kennel said.

Pickers are handed scissors to snip fruit from vines. While most of the strawberry plants stay firmly rooted in the Hydro-Stacker sockets, the Kennels have found that after several pickings the old-fashioned way some plants had been pulled out of the growing media.

So far, the Kennels are pleased with how things are working out. "We're selling everything we can grow," said Kennel, who thinks that the start-up payback period could be as short as two to three years.

The word "hydroponics" that appears somewhat inconspicuously on the Kennel's roadside signs has helped pique interest and bring U-pickers in, Sara Kennel said. "Some people know what it means, but a lot just stop out of curiosity."

Others who are attracted by the signs but don't pick up on the hydroponics part drive right by the rows of Hydro-Stackers, Aaron said, because they're looking for a traditional strawberry patch.

The Kennels use mostly OMRI-approved inputs to grow and protect their crops. Gray mold and powdery mildew are the biggest disease challenges.

Kennel family members will have their work cut out for them at the end of the growing season. That's when all plants must be uprooted and discarded and the growing media made ready for next season's rooted cuttings.

Kennel is the Oregon distributor for Hydro-Stacker. He can be reached at 503.871.2072, or go to AirlieHills.com. 🍓

Freelancer John Schmitz covers agriculture in Oregon.

Fresh-picked hydro **berry** book!

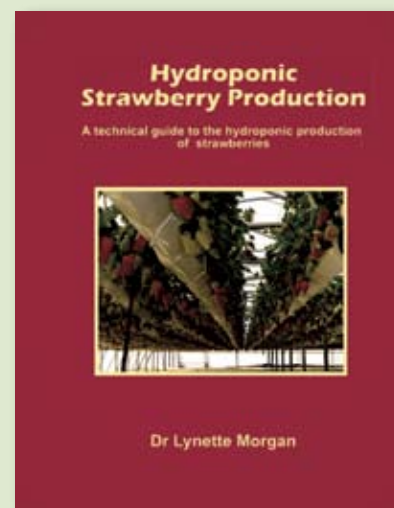
In her concise new book, *Growing Edge* writer Lynette Morgan gives you what you need to know to successfully grow strawberries year-round.

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Who should buy this book

- Commercial hydroponic growers who want to diversify into strawberries
- Small-scale commercial berry growers who need more information to manage an expansion
- Serious hobbyists who dream of growing the best berries possible 🍓

Lynette Morgan has authored two other must-have books for year-round growers—*Fresh Culinary Herb Production*, *Hydroponic Capsicum Production* and *Hydroponic Lettuce Production* (also available in Spanish).



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