

COVER STORY

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Scaling Up

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This isn't the first time I've written about 80 Acres Farms and I don't anticipate it being the last. I first interviewed CEO Mike Zelkind and Vice President of Creative & Marketing Rebecca Haders back in 2019 as their team worked on extensive research and development for optimizing indoor vertical growing for crops like leafy greens, herbs and tomatoes, among many others. At the time, Mike told me they were still in the first inning of the ballgame.

Basil growing inside a grow room at the Florence,

Kentucky, location.

They're much further along in the process now, opening new facilities, acquiring additional ones and even winning the Good Stewardship Award through the CEAs (Cultivating Excellence Award) that we partnered with Indoor Ag-Con on this March. In May, I jumped in the car and headed due south on I-71 to take a tour of a newer facility and sit down with Rebecca and Senior Manager of Sustainability Annie Wissemeier to get up to speed on where they are today.

A quick backstory

In case you're not familiar with the 80 Acres Farms backstory, Mike and Founder Tisha Livingston came from the food processing world, with experience in handling and processing everything from bakery and meats to canned vegetables. While leading the turnaround of a struggling vegetable canning company, they talked to farmers across the eastern U.S. to better understand their situation. Out of that came the realization that environment was everything and they set about to create a growing operation with an environment optimized for producing food.

That's easier said than done, but after a decade of research, development and refinement, they are much closer to cracking the code. It's been an exploration of the balance between agronomy and technology, and finding the right partners to ensure success and profitability.

"I think 80 Acres Farms has always respected that balance. Agronomy has been a huge part of our business, and then we have the engineers, we have supply chain folks," Rebecca said. "They are live plants, but it is a lot of engineering and manufacturing, and we have to meld those two together."



When it comes to partners, those come in the forms of equipment, suppliers and acquisitions, and on a global scale. Lights come from Signify, the automated bench system is custom and control systems are Priva. A partnership with Siemens provides modeling that simulates environments and outcomes before they're put into production.

Annie Wissemeier (left) and Rebecca Haders (right) take a break on the tour before we enter the harvesting area for a pic.

There's also Infinite Acres (of which Tisha is CEO), the company's own subsidiary in The Hague that focuses on research and development through collaboration with Dutch, U.S. and now Israeli experts to combine the best all have to offer. Then there's the acquisitions, which includes Plantae Biosciences, an Israeli biotech company optimizing plant genetics for vertical

farming, which they've since renamed Infinite Acres Israel. 80 Acres Farms also purchased Mother Raw, the maker of their salad kit dressing and brought that production in house. And, of course, their recent acquisition of three Kalera vertical farm facilities that primed them for expansion.

Living the sustainability message

The salad kits are a good example of the company's work toward sustainability and now is a good time to talk about their efforts across the company. Annie noted they opted not to co-manufacture salad kits with premade packs, and instead source the raw materials on their own to ensure quality and partners that also live the sustainability message.

"It really allowed sustainability to come to the decision table at every step of the process. You have packaging, you have other raw materials and dressing, and then you have our salad, which sustainability is already involved with," she said. "But sustainability gets to be a part of that decision-making process and it is hugely cross-functional, so this requires our sourcing and procurement team. It requires our operations team giving feedback, our package development, our product development team. Everybody has to come to the table.

"That's really, I think, a great example of how sustainability is just lived out. It's people asking for sustainability to be part of the discussion. And that's something I'm really proud to be a part of."



This thoughtful approach to measuring sustainability is what caught the eye of our Good Stewardship Award judges. For example, energy use is obviously a huge aspect of 80 Acres Farms' operation, and because of that, they situated their Hamilton location (nicknamed 70K because it is 70,000 sq. ft.) to access hydroelectric power.

A finished blend of microgreens destined for the grocery shelves under the Micro-topia microgreens mix.

"Part of what I brought to the table is doing our greenhouse gas calculations, looking into that data side of sustainability," Annie added. "And understanding and documenting the importance of that renewable electricity. We do utilize renewable energy certificates (RECs) for other facilities such as Florence here, but we are looking for long-term solutions outside of RECS for energy sourcing."

That means working with utility companies and others to find regional and community solutions. Those partnerships we talked about earlier, too, allow the farms to optimize their energy usage and track data to see where they can improve.

The push and drive for sustainability doesn't just come from inside the organization, either. Investors have also supported the efforts financially.

"It's been really great to have that support and talk through those things, completing our greenhouse gas inventory, our SBTI target," Annie said of the Science-Based Target Initiative, a corporate climate action organization that helps track and meet sustainability goals. "Those things are not without effort and time and energy, but they are helping us obtain the resources that we need to do them.

"I will say, we are one of the first or one of the very early CEA organizations to have an SBTI target. We completed that target through the small and medium enterprise a few years ago, and that's been a good guiding force for us."

Other sustainability initiatives include composting media and leafy green leftovers after harvest, reduced water usage and a recirculating system, recycling some of the plastic trays, and changing product packaging from clamshells to a tray system to reduce the amount of plastic.

Let's go inside

Now that I've given you the rundown from the outside, let's head inside to get a peek at the operation from within. The facility I visited was a repurposed printing facility with office space and room for three separate isolated grow rooms. The height wasn't tall enough for their typical 10 layers of growing, so they opted for six wider ones instead.

The grow rooms and the outside space are tightly controlled—in fact, they have a color-coded smock system to make sure they know who's where in the facility: purple is for packers, gray is for staff/admin, those in green can handle the plants and pink is for visitors like me. It's an easy way to look at the floor and know who's doing what quickly.

Much of the outer space is dedicated to some storage of supplies (the other farms don't have nearly as much storage so this holds some of what they need, too), HVAC, recirculating growing water system including

filtration and sanitation steps, plants in transit and transplanting. The seeds go into the germination chamber for two to three days, then spend 10 to 12 days on the propagation side of the grow zone. They come out and get run through one of two TTA automated transplanting machines (they were just getting the second one online while I was there—exciting!).

Once transplanted into new floats, they return to the other side of the grow zone where they spend two to three weeks growing on to harvest. There are 19 different crops of leafy greens, herbs, microgreens and tomatoes being grown at the Florence facility.

Once they mature in the grow rooms, they move to the outer room via the automated system and then on to the harvesting room. There's a significant drop in temperature there to keep produce fresh. I watched a blend of leafy greens make their way through an automated harvester, then bounced along a conveyor belt until they reached packaging, where plastic trays are automatically filled, weighed and closed with a top sealing machine. Those containers make their way to cardboard boxes that are shipped out on pallets to retailers like Kroger (headquartered in nearby Cincinnati), Fresh Thyme, HEB, Meijer and other grocers.

As mentioned before, the leftover media and greens after harvest get dumped to be composted, and the grow benches go through an automated sanitation process before going back in use.

Within the grow rooms, each crop is grown via light recipes optimized for yield and quality, with automated spectrum, irrigation and nutrient optimization, all pesticide-free, through a proprietary software system.

Growing from here

What operating at this level brings is data and the ability to analyze that data to optimize resources, product yield and growth. While vertical farms are currently facing headwinds, it's the opportunity out there that has Rebecca excited. And it was having that data that helped them to make leaps to scale up—like acquiring Kalera's three growing facilities in Denver, Houston and Atlanta—expanding their customer reach and creating new opportunities.

"I think a huge advantage is data control. We have a lot of data to drive decision making, so when we have those opportunities we have the data at hand to really inform us," she said. "And I would say the opportunities are really probably what everyone's facing with economics of what is the right crop, what is the right location, what are the right components to build into this?

"It's an ever-changing landscape."

80 Acres Farms Today

There are nine facilities, including:

- Hamilton, Ohio—Nicknamed 70K, this is the first scale farm that's become the modular base for future farms
- Florence, Kentucky—A newer farm that's 200,000 sq. ft., a former printing facility turned vertical farm (the one I toured)
- Denver, Houston and Atlanta—Three former Kalera facilities purchased by 80 Acres Farms

earlier this year

- Cincinnati—A former R&D facility that's now an educational facility to teach the community about indoor farming
- Springdale, Arkansas; The Hague, the Netherlands and Tel Aviv, Israel—Three R&D facilities to explore efficiencies and plant breeding
- A bonus—Two mini demonstration trucks