GROWERTALKS

Under an Acre

4/1/2020

A Scientific Approach to Horticulture

Anne-Marie Hardie

Aaron Fields, head of horticulture and general manager of the vertical greenhouse at Eden Green Technology in Cleburne, Texas, isn't your typical grower. A self-described journeyman, he adopts a scientific approach to each role, immersing himself in research and data to reveal solutions that will propel the industry forward. His curiosity about science started at a very young age, leading him to pursue a degree in Biogeography. In fact, a career in horticulture had never occurred to him until he came across a position at Monsanto.

"I was hired by Monsanto right after graduation," said Aaron. "It was love at first sight, as it was a position where I was able to bring together my two passions—research and science."

This role was his first exposure to the greenhouse industry and horticulture in general. However, it was far from your standard grower position. Instead, he explored which inputs and environments were needed to get the most out of each plant. As a direct result, Aaron explored several aspects of the horticulture industry, including plant trials, harvesting, growing technology and lab work.

"It was an eye-opening experience," Aaron explained. "I was involved with researching nutrient use efficiency, water use efficiency, data collection and taking a detailed look at how to make the most out of plants."

Aaron deliberately chose positions that would challenge him, improving his skills as both a grower and a scientist. This included learning about genetics and breeding as an assistant breeder in California and working as a grower closer to his hometown in the Midwest.

It only seemed natural that the next turning point of his career, at Hummert International, would take him out of the greenhouse and into sales and consulting.

"I can't overstate how important this role was for my career," he said. During this position, he developed contacts across the horticulture industry and a strong foundation in both the plastics and fertilizer industries. "I met a lot of individuals that you wouldn't have come across had I been siloed in my career as a grower."

However, he began to miss growing, so he started to seek out the next adventure in his journey. The search led him to Chicago, where Aaron secured an interview for a position at Gotham Greens. The role exposed him to indoor growing systems and the next level of commercial growing.

"This was a position where I grew dramatically," he said.

Now introduced to the world of vertical horticulture, Aaron was eager to discover new techniques and evaluate which were the most sustainable. He discovered Eden Green Technology just nine months after the business opened its

doors. The company was actively seeking an individual with a strong background in horticulture so they could improve their growing technology.

“When I did my interview, I could immediately see the areas that I could fix,” he said. “They could grow gorgeous plants, but couldn’t tell me the metrics or data.” Although this could be perceived as a red flag, he viewed it as a challenge that could easily be resolved.

Eden Green Technology was founded by Eugene and Jacques Van Buuren. The brothers had seen first-hand the challenges of hunger in their hometown in South Africa, and set on a mission to improve it. Their solution was a vertical farm technology that can create unique microclimates adapting to the needs of each plant. In 2018, the brothers brought their solution to North America and Eden Green Technology was born. Currently, Eden Green Technology’s 1-acre polyhouse has one system that operates with five different zones.

The challenge for Aaron was to discover the best method to grow leafy greens year-round in a greenhouse in Texas. One of the biggest myths that he was confronted with was that the natural lighting in Texas was sufficient for vertical farm technology.

“I came here to convince them that you can’t do this successfully without supplemental lighting,” he stated. To respond to this concern, Aaron embarked on LED light trials to determine the best system for the unique technology.

Over the last two years, Eden Green Technology has trialed over 200 plant types, including a variety of leafy greens, edible annuals, herbs and even cherry tomatoes.

“We don’t use pollinators, but the unique air delivery available in the microclimate provides us with enough fruit,” Aaron said. The company supplies fresh produce to micro farmers and various non-profits in the region, and their most valuable resource is their technology. “We don’t need to grow food for you, but instead, we would love to teach you how to grow food for yourself.”

This is a company that’s not intimidated by change and challenges. This includes seeking out solutions for the key concerns in the industry, including food safety, energy usage and labor. At the same time, the company prides itself on being at the forefront of blockchain technology, ensuring that each aspect of the supply chain is traceable.

“I’ve discovered that I’m not the guy who always has his head in the plants,” said Aaron. “I’m a big-picture person who is a much better grower manager than a grower. I enjoy working with other growers to empower them.”

His goal for the future is to discover what adaptation needs to be done to ensure that this technology responds to the global challenges of food security. “I’ve spoken to countries that have zero food security,” shares Aaron. “I know the interest is there; my big passion is to prove that it works.”

Aaron said that the experience at Eden Green Technology has truly allowed him to carve out his own path.

“This is brand new technology; there aren’t white papers and pre-established research for me to turn to for information,” he said.

It’s a position that’s allowed Aaron to delve headfirst into the world of research again, discovering both the benefits and challenges in this unique growing system. **GT**

Pictured clockwise from top left:Aaron Fields has cut his teeth on research and science during his career, which has helped him be successful at Eden Green Technology in Cleburne, Texas. • Eden Green has trialed over 200 plant types during the last two years. • Eden Green Technology's 1-acre polyhouse has one system that operates with five different zones. • Eden Green doesn't just grow leafy greens and herbs—they've also grown cherry tomatoes and bell peppers (pictured).

Anne-Marie Hardie is a freelance writer/speaker from Barrie, Ontario, and part of the third generation of the family-owned garden center/wholesale business Bradford Greenhouses in Barrie/Bradford, Ontario.