Tooling Around

Former produce growers discovered “a gaping niche” in the farm tools market. They filled it with equipment designed specifically for women.

BY DEBORAH R. HUSO | PHOTOS BY TOM GRALISH

Ann Adams and Liz Brensinger are no strangers to identifying and working to meet community needs. The two worked in nonprofit consulting with a focus on organizational development for many years before joining the world of agriculture. “We helped agencies identify community needs and meet them,” Brensinger explains.

Thus, it’s no small surprise when the two began growing and selling produce, they noticed some gaps in the world of agricultural production.

“At the farmers’ markets, we got together with other women producers or couples farming, and the topic of tools constantly came up,” Adams explains. Women expressed concerns they weren’t strong enough to work with certain tools, but Adams and Brensinger thought strength wasn’t the problem. “Some of the tools didn’t work because they were designed for men,” Adams adds. “We saw a need for a place where women could go for tools that work for their bodies.”

Hence, Adams and Brensinger started Green Heron Tools, a Pennsylvania-based company that specializes in developing and selling farming and gardening implements for women.

IDENTIFYING A NEED. Produce growers themselves for 15 years, they experienced firsthand the enormous effort often required to do something as seemingly simple as dig a hole or attach a plow to a tractor. When they spoke to other producers, they heard the same thing—not only were women frustrated with the difficulty of handling certain tools, but men were, too. They often had to call on neighbors to help them hitch equipment to tractors, or they struggled to complete tasks efficiently with a garden shovel.

Injuries were also a common complaint with producers. Back and muscle injuries often seem part and parcel of lifting and maneuvering heavy equipment or contending with tough farm labor like repeated digging. “It wasn’t just a comfort issue,” Brensinger notes. “We recognized the connection between tools and health and safety, too.”

“What we discovered was a gaping niche,” Brensinger explains. “It almost felt like a social justice issue.”

The two entrepreneurs were surprised no one had already tapped into this tool market. Between 1978 and 2007, women-operated farms increased from 5 to 14%, according to data from the U.S. Department of Agriculture. While 300,000 women own their own farms, about a million qualify as “farm operators,” often running an ag operation alongside a spouse.

RESEARCH FIRST. The business partners applied for an $80,000 Phase I Small Business Innovation Research grant through the U.S. Department of Agriculture. “The grant allowed us to do the research we needed,” Brensinger explains. “We did focus groups. We did interviews with researchers, farmers and public health experts.”
Adams and Brensinger recognized early on creating tools designed for women wasn't just about making it easier for them to farm but about making it safer, too. They discovered women use tools differently than men. When those tools are designed for men's bodies, women are more prone to injuries and have a harder time making the tools do the job.

Interestingly, the two were unable to find any data on injuries to women farmers; most injury data is on farmers across the board without reference to gender. "And many women don't identify themselves as farmers, either," Adams adds. "They call themselves 'farmers wives.'"

**LEG STRENGTH.** "Men have a lot of upper body strength," she explains. "We have up to 45% less." What women do have, however, is a lot of lower body strength. That means, for example, that they shovel differently. Men use the strength in their arms. Women attempt to use the strength in their legs. But a traditional shovel doesn't allow them to put much lower body power behind digging.

So the two women applied for a Phase II SBIR grant, this time for $400,000, to actually develop the equipment farmers said they were lacking. They hired an agricultural engineer in the Mechanical and Industrial Engineering Department at The Pennsylvania State University (Penn State) to help them create women-focused tools. Adams remarks with a laugh, however, that when the male engineer first viewed videos of women shoveling, he said, "We need to teach women how to shovel!"

Adams and Brensinger quickly corrected him, explaining women shovel at an angle in an effort to leverage their lower body weight. The result? Penn State developed a shorter shovel with a D-shaped handle that allows users to dig with the force of legs and abdominal muscles instead of upper arm strength.

"The shovel is a pretty simple tool, but it took two years to research and develop," Brensinger says.

**SPECIAL SHOVEL.** Essentially, researchers took to the field and had women shovel for hours at a time, measuring calorie burn with different styles of shovels. The shovel that ultimately became Green Heron's HERS shovel was the easiest model for women to use. The shovel comes with three shaft lengths to fit the buyer's height. Its D-shaped handle offers space for natural hand positioning and smaller diameters to reduce hand fatigue. Plus, the blade angle and large foot space on the blade allow users to dig in ways that aren't necessarily straight down into the soil. The shovel costs $64.99 plus shipping.

"It is the first agricultural item in the world designed exclusively and ergonomically for women," Brensinger says of the HERS shovel.

Next researchers looked at rototillers. "Rototillers are brutal," Brensinger says. "A lot of men don't like them"
either.” So they created a walk-behind rototiller that is battery-powered electric and lightweight, so it doesn’t jump around as much as conventional rototillers or require massive upper body strength to control it. The tiller also allows users to adjust the depth of the till. The tiller is patented but not yet available for sale.

Then Green Heron moved onto tractor hitches. Adams and Brensinger had heard numerous complaints from farmers about the difficulty of hitching equipment to tractors on their own. Farmers told them they couldn’t lift and manipulate implements while also trying to connect the PTO or exercise the torque necessary to remove pins holding equipment in place. Green Heron’s DeltaHook Rapid Tractor Hitch allows users to change tractor implements without having to get off the tractor or lift anything. The implement does require two people initially to install the control and receiver plates. The hitch plate is self-aligning, making attaching implements possible in seconds. It comes in two versions for Category 1 (20 to 60 hp) and Category 2 (40 to 125 hp) tractors.

**EXPANDED CUSTOMER BASE.** Adams and Brensinger expect to keep growing the business steadily. After six years, they’re finding the market has expanded beyond women, with men buying the tools, as well. They say the tractor hitch makes a particularly popular purchase for their expanded customer base.

However, Brensinger says it was women themselves who first inspired Green Heron Tools. “Women play a critical role in producing food,” she says. “We couldn’t believe no one had done this before.”

Explore Green Heron Tools online at www.greenherontools.com.