



## Great Farming and Gardening Tools for Women

*Interview by Megan Phelps*

I met Ann Adams and Liz Brensinger, owners of [Green Heron Tools](#), at the 2010 MOTHER EARTH NEWS FAIR in Seven Springs, Pa., last September, and I had the opportunity to hear their very interesting presentation on farm and garden tools for women.

[Ann and Liz](#), who both come from public health backgrounds, have been examining the general problem of how to make tools more ergonomic to prevent injuries. But their main focus is on a specific issue: Helping women find farm and garden tools that are better suited to their needs. This means tools that are appropriately sized for a woman's height and arm length, but also tools found to be more ergonomic and efficient, based on field testing by female farmers and gardeners.

I recently followed up with Ann and Liz to learn more about their business, and their research on women and tools. Here's what they had to say about why all farmers and gardeners need better tools, and why good farm tools for women are especially hard to find.

### **How would you describe Green Heron Tools?**

*Liz:* It's a small business devoted to providing high-quality agricultural and gardening tools and equipment for women. Basically it grew out of our own experiences as market growers — needing to find tools that were better than the ones we had.

We had worked in public health for many years, so we were very clear about the connection between tools and health and safety. We also knew that a tool works best when it fits the person using it. Quite honestly, we were flabbergasted to discover that virtually all the equipment out there had been designed for men — or for some average user who looked a lot more like a man than a woman. So most tools and equipment don't fit women very well, or work as well for women as they could and should.

### **Tell me a little bit about the physiological differences between men and women that really make a difference when using farm and garden tools.**

*Liz:* Well, probably one of the biggest differences is that women have 40 to 75 percent less upper-body strength than men. We also have 5 to 30 percent less lower-body strength. Obviously the difference is greater with upper body-strength, and if you think about it, a lot of tools are really dependent on using that upper body. So, for example, a man will take a shovel and basically thrust it into the ground using his upper body. Very few women have the ability to do that.

*Ann:* We rely more on our legs to get that shovel into the ground, because that's where more of our strength is. That's one of the things we discovered when doing our evaluations for the new shovel we'll be coming out with early next year: Women use a shovel differently, to capture their lower-body strength. Historically, no one has really looked at the way women shovel and why that may be different.

## Improving Tool Design

### **So what would a shovel that works well for women look like?**

*Liz:* It's a little tricky because our shovel isn't out yet, so we don't want to give away too much detail. But in general, everything about the shovel, from handle to shaft length to blade, will be based on women's bodies and how women shovel.

### **Can you give me another example that shows how a tool can be better designed for a woman?**

*Ann:* Well, first of all, anything that has a pull cord for a combustion engine. The pull cords are almost always too long for the length of a woman's arm.

Women have found all sorts of creative ways to adapt. When we start our lawn mower, for example, we push it away from us at the same time that we're pulling the cord — that's how we get the extra distance we need to make up for the fact that the cord is too long for our arms. But women shouldn't have to adapt to equipment that really isn't right for them, and they sometimes put themselves at risk for injuries. We talked with a woman who puts her chainsaw in the Y of a tree to start it because the cord is too long. That's a really dangerous thing to do. It would be far better for companies to produce equipment with shorter pull cords, electric switches, etc.

Making tools ergonomic is another way they can be better designed. It's especially important for women, because we are more prone to musculoskeletal disorders. For example, if you look at anything where you're using your wrist, such as pruning, such as using a hoe, it's important to have the tool ergonomically designed to keep your wrist in a neutral position. That reduces the chance of injuries and conditions like carpal tunnel syndrome. Most of the long-handled and even the short-handled tools don't really do that for women.

*Liz:* In our focus groups with women farmers, we heard a lot of complaints about the three-point tractor hitch. Some equipment is simply too heavy for most women to connect and disconnect themselves, so they're in a position of having to wait for someone else to come and help them, which can cause them to lose valuable work time. And a few women reported injuring themselves using a three-point hitch. So one of the things that we've made available through our website is a [quick hitch](#) that allows people to disconnect and connect implements without leaving the tractor seat.

And the other big example that is very near and dear to our hearts is the current walk-behind rototiller. We have a grant now from the USDA to work on alternatives to rototillers. The ones that are powerful enough to do the kind of work that a farmer or serious gardener needs — such as digging up sod to create a new planting area — tend to be very challenging for women to control and maneuver, because they tend to be big, heavy machines.

Rototillers also create a lot of vibration, and that's something that women are physiologically more vulnerable to. Very little research has been done on injuries and disabilities among women farmers, especially related to tool and equipment use, but there's a nurse researcher out of Kentucky, Carrie McCoy, who's done quite a bit on problems associated with vibration.

### **What kind of injuries might come out of that?**

*Ann:* With vibration, you can have venous stasis in the pelvic region, which leads to circulatory problems. Another thing is that women have greater susceptibility to soft tissue injuries because, during the menstrual cycle and especially during pregnancy, there are different amounts of flexibility in our joints than at other times. And exposure to excessive vibration can result in cumulative trauma such as hand-arm vibration syndrome and carpal tunnel syndrome.

Because there's so little data on injuries to women farmers, we can only make inferences about other risks from the information we do have. So, for example, anytime a woman is lifting, she's going to be at greater risk because, in most cases, we just should not be lifting as much as men can. I'll give you one of our favorite examples: If you want to buy chicken feed, it's in a 50-pound bag. Most women shouldn't be lifting 50-pound bags.

### **And why does it have to come in 50-pound bags?**

*Ann:* Exactly! Why not 25-pound bags instead?

*Liz:* Another example we heard, from women dairy farmers, is that the typical-size pail is too heavy when it's full.

**So you need a smaller pail?**

*Liz:* Yes, exactly! Some other really simple ideas are things like changing the size of a handle to better match women's hands. Or the shorter pull cord example that Ann gave. How difficult would it be to do that? I think it shows that there hasn't been much consideration given to the needs of women farmers, because when you look at it, a lot of the solutions are really pretty simple.

**You've mentioned before that you have a following not just among women, but also men of smaller stature, and older people who have less physical strength.**

*Liz:* Yes, when we talk about rototillers, typically as many men as women are interested in a better alternative.

*Ann:* As men age, they have lower levels of testosterone, and so their upper-body strength diminishes over time. You also have the issue we mentioned before about musculoskeletal disabilities, which are considered to be fairly epidemic in agriculture. Also, the older a person is, the more likely it is that they have some sort of chronic issue that limits what they can do. One of our goals is to get people to use better equipment and tools early on so they don't develop those disabilities.

**Have you run into other people who are looking at these issues?**

*Ann:* I wish there were more.

*Liz:* We did a lot of research prior to starting the business, and we did not find a single company with a mission like ours that appears to be using scientific methods to make tools that work well for women. The only place we found around the world that has done this is India, where the government has put some energy into adapting farm tools for women.

*Ann:* I think there's this mental block, this idea that women can use the same tools, they're just not as good at it. But the truth is that we're not as good at it because they're not the right tools for us. It's an unconscious mindset for people to think, 'Why would women need something different?' I think there are even a lot of women that it's never occurred to. They just haven't thought about it, and they're used to making do with whatever tools or equipment are readily available.

**It's just easy to think, 'Why am I not strong enough?'**

*Ann:* We've heard that so often from women! They thought there was something wrong with them, not with the tools.

## Research in the Field

**Can you tell me a little more about your backgrounds?**

*Liz:* Ann has a master's in nursing. I have a master's in public health. Because of our health backgrounds, things like injury prevention and educating people on what they can do to keep themselves healthy are pretty much second nature to us. And we have both done a fair amount of research. We had a consulting business working with nonprofits for about 15 years, and during that time we started market growing. Ann can tell you a little more about that because it had to do with her son.

*Ann:* Yes, my son actually started the first farm-to-table restaurant in the Lehigh Valley region of Pennsylvania, and he couldn't get the heirloom and heritage produce he needed. So we enlarged our organic garden and started growing these things so he would have access to them, and we got to a point where we decided we really loved it and wanted to expand and do farmers markets. We had to use a bad rototiller to expand. It's a very sad story. *(Laughs)*

**But you made do.**

*Ann:* Yes, we made do! And we were doing the restaurant and two farmers markets and we couldn't keep up with demand. One of the things that we've learned, after doing all this research, is that we really didn't have the right tools.

**You have a group of tool testers who give you feedback on particular farm and garden tools. Can you tell me a little bit about your tool testers?**

*Liz:* There are 19 women from five states who tested the products we're currently selling. Some are folks that we knew, and some were people who filled out our online survey and volunteered to test tools.

For the shovel, we had a different group of volunteers — farmers from the Pennsylvania Women's Agricultural Network. Our other tool testers are farmers, market growers, gardeners, landscapers and a viticulturist. With the exception of one or two gardeners, they're women whose livelihood is somehow connected with using the types of tools that we're selling and will be producing.

**So they're spending a lot of time with these tools before you decide you're going to sell them.**

*Liz:* Yes, definitely.

**Is the shovel the first tool that you're actually producing?**

*Liz:* Yes, we're talking now with manufacturers about the shovel, which should be out in early 2011.

**You've also mentioned the rototiller, which you got a grant for from the USDA. Are there other tools that you're in the process of developing or have developed?**

*Ann:* Actually, we have a long-handled hoe that was developed along with the shovel. It needs more testing on the blade, but it's going to be more ergonomically correct, with the added bonus of preventing shoulder and elbow injuries. And you'll be able to stand up straight when you use it.

That's another thing, just being able to stand upright when you're doing a lot of these tasks will help prevent the lower back injuries that come from using tools where you have to bend over, or you have to twist. That's the other focus — making sure that the tools on the market are more ergonomic.

*Liz:* We're selling a long-handled hoe from a Dutch company. The major advantage is that it has a really long handle with a pistol grip. So you can stand, as opposed to bending, and the pistol grip enables your wrist to stay straight, like Ann was talking about before.

We're also selling a [wheel hoe](#) designed by an organic grower from California. It's a great example of a tool that wasn't designed for women per se, but it works for women in part because it's very easily adjustable. A tall man and a short woman can use the same piece of equipment. It takes only about 30 seconds to a minute to change the handle height. The wheel hoe is light, and changing out the attachments that go with it is very easy. The span between the handles is more appropriate for women. And it's also a very simple design that's very durable because it's all metal. It's just a really high-quality piece of equipment, and because of its characteristics, it also works much better for most women than other wheel hoes do.

## Women in Agriculture

**What else do you want to tell me about yourselves or the company?**

*Liz:* We like to point out the incredibly important role that women play in food production worldwide, especially in developing countries. What's the statistic?

*Ann:* Sixty to 80 percent of the food in developing countries is grown by women.

*Liz:* So there's a need globally, and we're hoping to eventually develop something specifically for that market, to play some role in making the lives of women worldwide a little easier. Enhancing women's ability to produce food so they can grow a little more and sell it can have an incredibly positive impact on families.

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*Ann:* That's absolutely true. There's lots of documentation of how families' lives are improved through micro-lending and other programs that help women buy equipment so they can grow more food and sell it. There's all kinds of significance there that appeals to me, because my whole background is working with families and children, whether it was nursing or running agencies. It feels like there's a real potential to do a greater good here.

***It's very hands on.***

*Ann:* Yes.

*Liz:* And in the United States, women are playing a bigger role in farming. The growth in the number of women farmers here has been pretty amazing. From 1997 to 2002, for example, the number of farms operated by women increased 13 percent. Between 2002 and 2007, there was another 29 percent increase in women-operated farms.

This business really brings together a lot of strands from both of our lives. We're old enough to have been around when the women's movement really geared up. More recently, I believed that most of the big issues had already been addressed to some degree. So it was interesting, and a little disheartening, to find that there are still some places — like agricultural tools and equipment — where women have really not been considered. So it feels consistent with our philosophies, as well as our personal and professional experiences, to try to do something that helps women in this way.

***Just one last question, why did you decide to name your company after the green heron?***

*Ann:* Actually, we have [green herons](#) that come and roost in our evergreens, and they're very quiet, and they're very secretive and we feel blessed to have them come and visit us. And then we found out that green herons are one of the only birds that use tools! It was serendipitous.