NEWS & IDEAS FOR LOCAL FOOD PRODUCERS

growing FOR MARKET

Volume 21 / Number 9
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Organic law turns 10

The National Organic Program took effect in October 2002 and in the decade since, organic farming has grown steadily. Organic fruit and vegetable consumption has seen the strongest growth, accounting for 12 percent of all U.S. fruit and vegetable sales last year. Organic dairy is the second-largest category, capturing nearly 6 percent of the total U.S. market for dairy products, according to the Organic Trade Association.

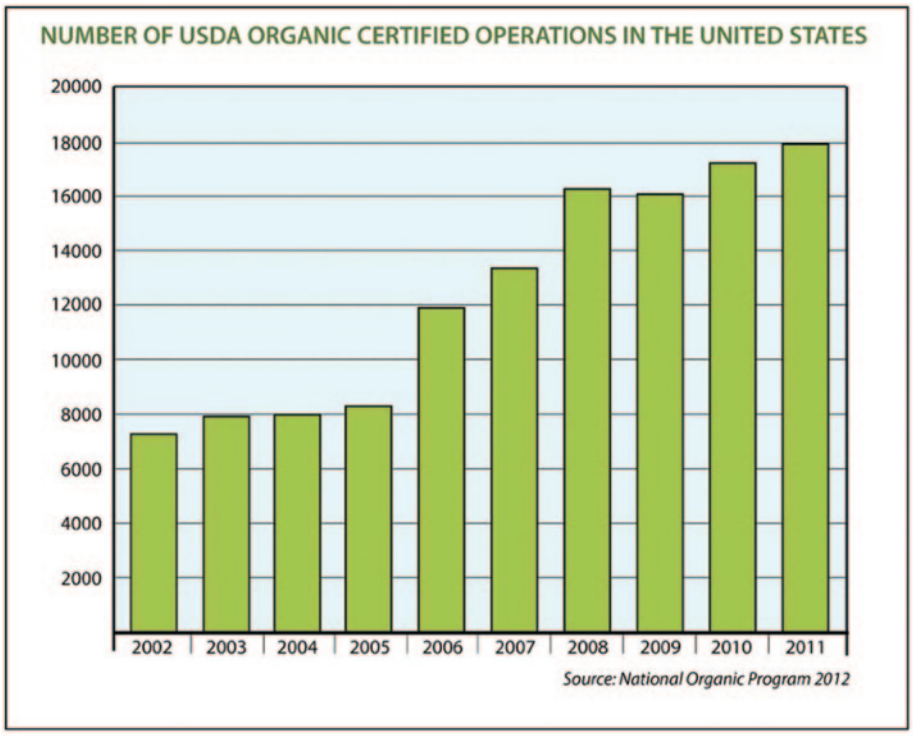
The Organic Farming Research Foundation recently reviewed scientific literature about organic farming published since 2000 and produced a report, *Organic Farming for Health & Prosperity*.

The report extols the multiple societal benefits of organic farming in North America. Some of the research cited includes data showing that organic farming improves soil and water quality, increases biodiversity and pollinator health, sequesters carbon thus slowing climate change, reduces toxic chemical exposure, increases farmers' sales and profits, and provides jobs in the agricultural sector.

"The organic industry has been one bright spot during the current recession," the report notes. "While many industries have shed employees, organic farming has been hiring workers, adding farmers and increasing revenues. In the U.S., 53% of organic farms hire labor in comparison to 22% for the entire sector."

The 75-page *Organic Farming for Health & Prosperity* report can be downloaded free from www.ofrf.org.

Growing for Market congratulates organic farmers on 10 years of hard work that is clearly paying off.



LETTER FROM
Wild Onion Farm
LYNN BYCZYNSKI

The joys of work... and new experiences

I had the pleasure last month of judging essays in the Farmers Market Inspiration Award contest. As one of about a dozen judges from the three sponsoring organizations, I was assigned 30 essays to read and grade on various metrics. For several days, I was steeped in images, opinions, and emotions about farmers markets. It's been a long time since we sold at farmers market, but these essays brought the memories flooding back: getting onto the highway at dawn; the frenzy of setting up the stand; the conviviality among farmers; and the nonstop conversation for the four or five hours of selling — the feeling of being animated and very much engaged.

Nearly every one of the essays struck me as valuable and true. Assigning grades was one of the toughest editorial assignments I've had in a long time. On a scale of 1 to 5, I kept assigning 5s until I realized that wasn't very helpful to the judging process. Luckily, many other people were judging the same essays and in the end the collective wisdom prevailed. We picked a very good essay as the winner of the grand prize, $1,000 cash. But the honorable mention winners were so close. I encourage you to read them all, especially if you are new to selling at farmers markets. They illuminate the joys and hard work of being a market farmer. See page 7-11 for details.

Thanks to everyone who inquired about my husband Dan's health as he recovered from hip replacement surgery in April. He is doing great! He's riding his bike 20 miles a day and he got back on the tractor recently to clean out a hoophouse so we can grow our own food this winter. We'll be planting lettuce, arugula, beets, chicories, spinach, and much more this weekend. After a dreadfully hot, dry summer that resulted in poor-quality crops, we are taking great pleasure in the cooler weather of fall and the promise of sweet, delicious homegrown vegetables all winter. If you have a hoophouse, you know what I'm talking about. And if you don't have one, think about getting one!

Dan and I are going to Terra Madre, the big Slow Food event for sustainable food producers in Turin, Italy, at the

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end of October. We know many of you have attended Terra Madre in the past and had a wonderful time meeting farmers from around the world. This year, Terra Madre is being held at the same time as Salone del Gusto, a festival of artisanal foods held in the Olympic arena in Turin. "Foods that change the world" is the event's slogan, "in recognition of the collective power of the hundreds of responsible small-scale food producers, chefs and experts who will gather for these five days. Arriving with their stories, products and passion from around the world, they will present a one-of-a-kind experience of the world of food and wine, allowing visitors to discover different cultures and the knowledge and skills behind food production that offers a better future."

After 20 years of working hard on our own farm, and focusing on the food culture in North America, we are thrilled at this opportunity to experience the wider world of sustainable agriculture. I'll report on the event in the November/December issue of GFM, which will be published in late November and delivered to you in December.

Have a great autumn!

Please note: The next issue of GFM will arrive in December, not November.

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Breeding better veggies for organic farms

Organic Seed Alliance teaches growers seed production, variety improvement

By Lynn Byczynski

In late July, the weather was cold and drizzly in Port Townsend, Washington, on the Olympic Peninsula west of Seattle. Port Townsend receives only 19 inches of precipitation annually, and summers are generally sunny. But this year, the springlike weather was lingering well into summer and causing the farmers at Midori Farm to worry about one crop in particular: their carrot seed.

Midori Farm's owners, Hanako Myers and Marko Colby, grow vegetables, fruits, and transplants for local farmers markets and grocery stores. They also make a line of live-culture krauts and kimchis, most of which include carrots. They have found that the old, open-pollinated carrot variety Red Core Chantenay is the best for their kimchi products. So they have been growing a bed of the variety every year and letting it go to seed. Hanako and Marko say that growing their own seed protects their business in case the variety is dropped by seed suppliers. At the same time, they are gradually adapting the variety to their climate. And they're reducing their input costs.

A few miles away, John Navazio was growing carrots in pots in a greenhouse in Micaela Colley's backyard to insure they would get some carrot seed from their 2012 crops. John is a vegetable breeder for Washington State University and Micaela is the executive director of the Organic Seed Alliance, a nonprofit organization based in Port Townsend. Hanako and Marko are among a half dozen farmers in Washington, Oregon, Wisconsin and New York who collaborate with them and other university researchers in a new venture: developing vegetable varieties that perform well on organic farms.

John Navazio, a plant breeder at Washington State University and the Organic Seed Alliance, shows the seedlings that will become part of the trials at Midori Farm in Port Townsend, Washington. His quest is to breed a better radicchio, spinach, and sprouting broccoli for the Olympic Peninsula.

The Organic Seed Alliance (OSA) is breaking ground with a new kind of plant breeding that goes by the name of Participatory Plant Breeding. In a

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nutshell, it means that farmers and breeders are working together to develop traits that are needed on real working organic farms.

Those traits might be entirely different from the traits traditional plant breeders are seeking. Whereas traditional breeders aim for uniformity, farmers might want plants that don't all mature simultaneously. Whereas traditional plant breeding occurs in near-perfect climates, using high-input systems, organic farms need plants that can produce despite variable weather, pests, and weeds under low-input organic systems.

OSA is not just another seed-saving organization dedicated to the preservation of heirloom varieties. It goes way beyond that.

"Our mission is, first, training people how to grow high-quality seeds for commercial use organically," Navazio said. "Second, we are teaching them how to maintain the varietal integrity of the variety — if you just grow it out without doing any selective maintenance, the variety will go to hell. Lastly, we are teaching how to do crop improvement, also known as crop breeding. So we have really spent the last decade coming up with creative solutions to the question 'how do you do good plant breeding with low-tech methodology?'"

The work of OSA has resulted in more farmers growing seeds in a more methodical manner than ever before.

"Some farmers have gotten into growing seed for themselves because it's a seed security issue as well as an organic compliance issue," Micaela Colley said. "In some cases, that leads to a new market niche for them, growing for seed companies. It's an income stream that is pre-contracted and a lot of them get paid in winter when they don't have other markets."

But before they can grow seed for market, growers need to learn the basics of plant breeding.

Disease-resistant spinach

At Midori Farm, Navazio is checking on a patch of bolting spinach plants. It represents 10 years of work, with a couple more years to go until Navazio is satisfied that he has a new spinach variety that is hardy in the Pacific Northwest, disease resistant, delicious and nutritious.

He began by crossing the heirloom variety Winter Bloomsdale with Evergreen, a variety developed at the University of Arkansas that has extra good stress and disease resistance.

"For four or five years, we just grew generations of that and let it mix and adapt to the Olympic Peninsula," Navazio said. "After five years of minimal selection, Marko last summer planted it at a lower density than you would for cutting, a total of 2,000 plants. Two times a week for a month

we would flag plants we liked at various stages — baby, teenager and bunching. At that point, out of 2,000 plants, we got it down to 150 plants. We let those all flower and then we got rid of the earliest bolters. So then it was 120 plants — 60 males and 60 females. We saved seed into separate bags and this year planted the 60 families.

"This is where the Y in the road comes for my style of breeding. A regular pedigree breeder would pick single plants out of the five best families and from that moment on, any parental line that that would be used in a hybrid would derive from a single plant. There would follow three or four generations of selfing, until it is so uniform they all flower the same day and look identical.

"That's genetic narrowing. We don't do that. After 10 years of work, we've come down to five mother

continued on the next page

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continued from page 5

plants and up to 60 father plants represented. Now they're crossing. So we'll harvest seed off five plants and grow five rows. At that point, if they all look good, we'll be done. The hardest part of being a plant breeder is deciding when you're done."

Navazio says that the variety will be called Abundant Bloomsdale and, if all goes well, will be available in 2015. He hopes that the new variety might generate some revenue for OSA but adds that it will be an open source variety, which means anyone can take it and breed something new from it.

Trialing for the North

OSA is part of the Northern Organic Vegetable Improvement Collaborative, in which researchers from Washington State, Oregon State, University of Wisconsin and Cornell University are partnering with organic farmers to identify the best existing varieties and breed new varieties suitable for organic production in the North. In the spirit of Participatory Plant Breeding, the researchers and farmers chose five crops to evaluate for specific characteristics that the farmers consider important:

- Broccoli - Heat tolerance, marketable uniformity in an open-pollinated variety;
- Carrot - Cold-tolerant, weed-competitive, 'Nantes' type;
- Snap Pea - Heat-tolerant, disease resistant, stringless variety;
- Sweet Corn - Good cold soil emergence in a sugar enhanced variety;
- Winter Squash - Long term storability.

Plus, farmers in each state can choose another crop of particular interest. Washington growers, for example, have chosen to evaluate beets in addition to the others.

Catering to markets

In addition to finding varieties that produce well, the breeders and farmers are seeking new varieties that will fill a market niche. Midori Farm is working with Navazio on two such crops. The first is radicchio, the second purple sprouting broccoli.

"Our long-term goal is to find an alternative to California lettuce in the winter," Navazio said. "We eat a lot of kale in this climate, and we're getting sick of kale." He thinks that the chicories offer great potential, if they can be bred to be cold-tolerant and sweeter tasting than most of the hybrids on the market. "We're selecting for what looks good, reliably forms heads, and will live through 15°F."

So far, he has found the green speckled, open heading Radicchio di Castelfranco from Seeds from Italy to be most promising. He notes that the farmers he has worked with like the variety because it's "salad friendly" and heads hold up well in a retail setting. They are growing a quarter-acre this fall to start selecting for their desired characteristics.

Another example of breeding for the market is OSA's work with purple sprouting broccoli. A popular vegetable in England, it is planted in fall to overwinter and the large plants produce numerous purple shoots early in spring. For this work, OSA got funding from a produce distributor that has a market it can't satisfy. Growers in British Columbia and Oregon have been selecting for cold hardiness and from those strains Navazio has selected plants with sprouts at least as wide across as a half-dollar.

"Money in late March and April is incredible, and the public is just dying for something like this," he said.

Resources for farmers

This fall and winter, OSA will be conducting numerous workshops at field days and conferences including Bioneers, Carolina Farm Stewardship, Southern SAWG, and Tilth Producers of Washington. You can find a complete list of events at www.seedalliance.org/Events/

OSA also has produced numerous publications to help farmers with the many technical issues surrounding seed growing, plant breeding, and seed saving. All materials are available free from the website. For a complete list, visit www.seedalliance.org/Publications.

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Farmers market essay winners selected

Growing for Market, the Farmers Market Coalition, and American Farmland Trust co-sponsored the Farmers Market Inspiration Award Essay Contest, designed to showcase the variety of ways farmers markets benefit communities, as told by farmers who sell at them. For a Grand Prize of $1,000, 72 farmers from across the U.S. submitted essays.

The Grand Prize winner is **Cory Mosser of Burge Organic Farm** in Mansfield, Georgia, who sells at the Peachtree Road Farmers Market in Atlanta. His essay, entitled *Any Given Saturday*, is printed on the next page.

The Honorable Mention winners will receive a free subscription to *Growing for Market*. Here are their names, with brief excerpts from their essays. You can read the complete essays at www.growingformarket.com.

Laura Frerichs of Loon Organics who sells at the Mill City Farmers Market in Minneapolis, Minnesota.

"This is an education in life that we do not get on the farm with just us, our employees, and 50 different vegetable crops. This market experience is invaluable. It goes way beyond that 25% of gross sales."

Alice White of Bluebird Meadows who sells at the Durham Farmers Market in North Carolina.

"Each week our market display is the culmination of weeks, months, and years of work and each week our community comes out and supports this work, taking home with them a living and real part of our lives. We provide sustenance for our customers, our community, and they in turn provide the same for us. This rhythmic reciprocation, this sharing of support, is in essence the pulse of our lives."

Denise Breeden-Ost of Getty's Creek Farm who sells at the Bloomington Community Farmers Market in Indiana.

"What do neighbors do? Sit on porches and talk about the weather? Borrow a cup of sugar? We don't sit much this time of year, and I've never borrowed sugar in my life–but I have borrowed rubber bands from Jeff and bags from Christine, and changed fives to ones for Pete. You might think, being in the same business with the same customers, we'd see each other as competition. But as Jeff told Sean years ago, "Other farmers aren't what hurts us; it's Kroger's that hurts us." And besides, who would you rather stand beside for five hours every summer Saturday–a competitor, or a neighbor?"

Sarah Wertz of Rabbit Run Farm who sells at the Prescott and Flagstaff Farmers Markets in Arizona.

"I know we are on the right track when one of my favorite customers, an elderly woman named Lola, comes to our booth each week and says loudly, "Oh! Ah!" and "Oh my goodness, you musta been up all night washing! I don't see a speck of dirt! Mmm mmm!" She turns to another customer and sells our produce with her praise."

Lawrence Latane of Blenheim Organic Gardens who sells at the Williamsburg Farmers Market in Virginia.

"Can you tell me what's so special about these beans?" asked the woman wearing one of those vests with lots of pockets that photographers used to wear. She was tall and slim and she coiled a leather check cord into a pocket as the two dogs with her settled their haunches at her heels.Immediately, three sets of eyes—two big and brown and the other narrowing and blue – all seemed to fix on me. I know for a fact that hers never blinked."

Ross Peterson of Laughing Stalk Farm who sells at Cape Riverfront Market in Cape Girardeau, Missouri.

"Farmers markets are the dinner tables of healthy communities. They are the place where everyone can gather to exchange stories and laughter with the accompaniment of good food. They are the place where we can talk about what is going on in our lives – whether mundane, exuberant, or somber. Through these interactions we learn about each other, and in turn grow with one another just like a family."

The winner: 'Any Given Saturday'

By Cory Mosser

Do you remember June 30th, 2012? I do. At our farmers market, it reached a record heat of 106 degrees and was even hotter on the blacktop parking lot where we set up. It was the type of weather that farmers love only because we can complain to other farmers about it. There was more than a little trepidation driving into town as sweat rolled down our foreheads before the sun had even made an appearance - not a good sign. Would we (our farm's three apprentices and myself), along with our vegetables, roast into little crispy morsels of despair? Would our customer base ignore us completely for the comfort of an air-conditioned box store? Would we all have to go find jobs in said box store the following week?

As it turns out, we had nothing to worry about. We didn't wither in the heat, we smiled. We were greeted by close to 2,000 market goers (our market can easily top 3,000 on its busiest days), who were excited to buy produce from us and who refused to let a silly little thing like soul-sucking heat keep them away from the food they know and love. By the time the bell rang to signify the end of market, we still had a line and we had sold almost 50 percent more than we did on the same day the year before. As we were cleaning up in our giddy, sleep-deprived but socially satiated state, we were reminded again of how much fun selling at market can be.

I love Saturday. As a kid, Saturdays meant adventure, hiking trips, long days riding bikes or swimming. As I got older, Saturdays mostly meant no work, something I was particularly fond of while working terrible jobs like Hotel Night Auditor, Long-distance Telemarketer, or Foundation Repair Technician. Saturday became like a refuge from the rest of the world. No one was allowed to mess with my day off. It's more than a little ironic that, now that I've stumbled in to this profession which I absolutely love, the cost of admission is foregoing the traditional weekend. Every Saturday from mid-March until right before Christmas is dedicated on the calendar. I've become accustomed to the off-kilter vibration that comes from going to bed too late after Friday harvest and prep, and getting up WAY too early on market day. I miss weddings, college football, soccer games, and beach trips. I nap like an old man every Saturday afternoon.

The crazy thing is that it's unequivocally worth it. Rather than a loss, Saturday for me is the big payoff. It's our chance after a week of talking to plants to be the center of a conversation. We have a captive audience. We get to be menu planners, stand-up comedians, life coaches and garden councilors. I get paid not only in dollars, but also in priceless vignettes that unfold every weekend right in front of me. Watching tomatoes I've battled into existence over months fly off the shelf. The emotional battery charge of smiling familiar faces. The kids that want to eat raw okra right from your booth. The knowing glance of a fellow farmer on a slow dog day in August.

The other day I received a handwritten note from a market customer that simply said: "My baby's first solid foods came from your farm, thanks so much for everything you do!" These moments are worth all the lazy Saturdays in the world.

Selling at market has created a passion for going a little overboard. Last year, we started bringing a pepper roaster (basically an excuse to safely light things on fire in public), which led to the development of the Pedal Powered Pea Pusher (an old exercise bike converted to fit a pea sheller), which in turn inspired the Solar Powered Market Mister (solar chicken fence charger + spray tank pump + greenhouse misters + cooler full of ice water= happy veggies, customers and farmers). We tried it out on that record-breaking day, and we were able to maintain a "cool" 85 degrees!

We are incredibly fortunate to be a part of one of the best farmers markets in the southeast. I have participated in at least five other markets during my farming career, and Peachtree Road Farmers Market outshines them all. We have a great location. Our market manager is vigilant about ensuring that the integrity of the market is upheld. We have a dynamite staff of volunteers who donate more than 150 hours of their time to the market each week. There are weekly chef demos, musical performances, kids' activities, costume contests, festivals, fundraisers, and films. I'm proud that our farm is part of Wholesome Wave Market, which doubles the value of each EBT/WIC dollar spent. To date, according to market manager Lauren Caney, our market has provided over $7,000 in Whole Wave dollars to help families who have a true need for clean, locally produced food. Our market also part-

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ners with Second Helpings, a local food donation charity. Last year, fellow market vendors donated almost 3 tons of produce and other food items, which were distributed to area food banks.

A nice booth and good management are only the baseline for a successful farmers market. The real magic is in the community that supports it. The fashionable knock on producer-only farmers markets is that they are elitist and only reserved for a select few, an argument that, to me, is myopic and lazy. During the past few years we've noticed a subtle shift in our customer base. A movement that may well have been initiated by well-to-do foodies and cutting-edge hipsters is burgeoning into a diverse and passionate community of local food advocates. We can count among our regular customers factory workers, public school teachers, teenagers, college students, grandmothers on social security and even a few grade-school kids. What's more, sales are up this year. We are averaging 20% more on a weekly basis, and we have topped our record day from last year six times this year. That type of growth is clear evidence not only that more people are interested in local food, but that whole groups of people are willing to come together over it. It has been nothing short of incredible to witness a community come into full bloom around local food. People come to the market to talk with their neighbors and to make new friends. Families bond over dinner plans. Folks tend to linger and let their kids play or their dogs sniff around. Marketgoers seem to actively engage with each other in a way that is almost foreign today. In a world that is plagued by ceaseless distraction, to see people connect without a Wi-Fi signal is a real treat.

Cory Mosser on his pedal-powered pea sheller at the Peachtree Road Farmers Market in Atlanta, Georgia. See the next page for details on the sheller.

As we finished clearing our market space on that inferno day, I noticed there were still two families hanging out. A couple of kids with melted popsicle faces were yawning, and the parents were negotiating strollers, dogs, and large baskets of produce. As they parted I heard one of them say "See you guys here next weekend?" The other shouted across the now empty lot "We wouldn't miss it for the world."

Neither would I.

Pedal-powered pea sheller & solar mister

By Cory Mosser
Designs by Daniel Guzman and Cory Mosser

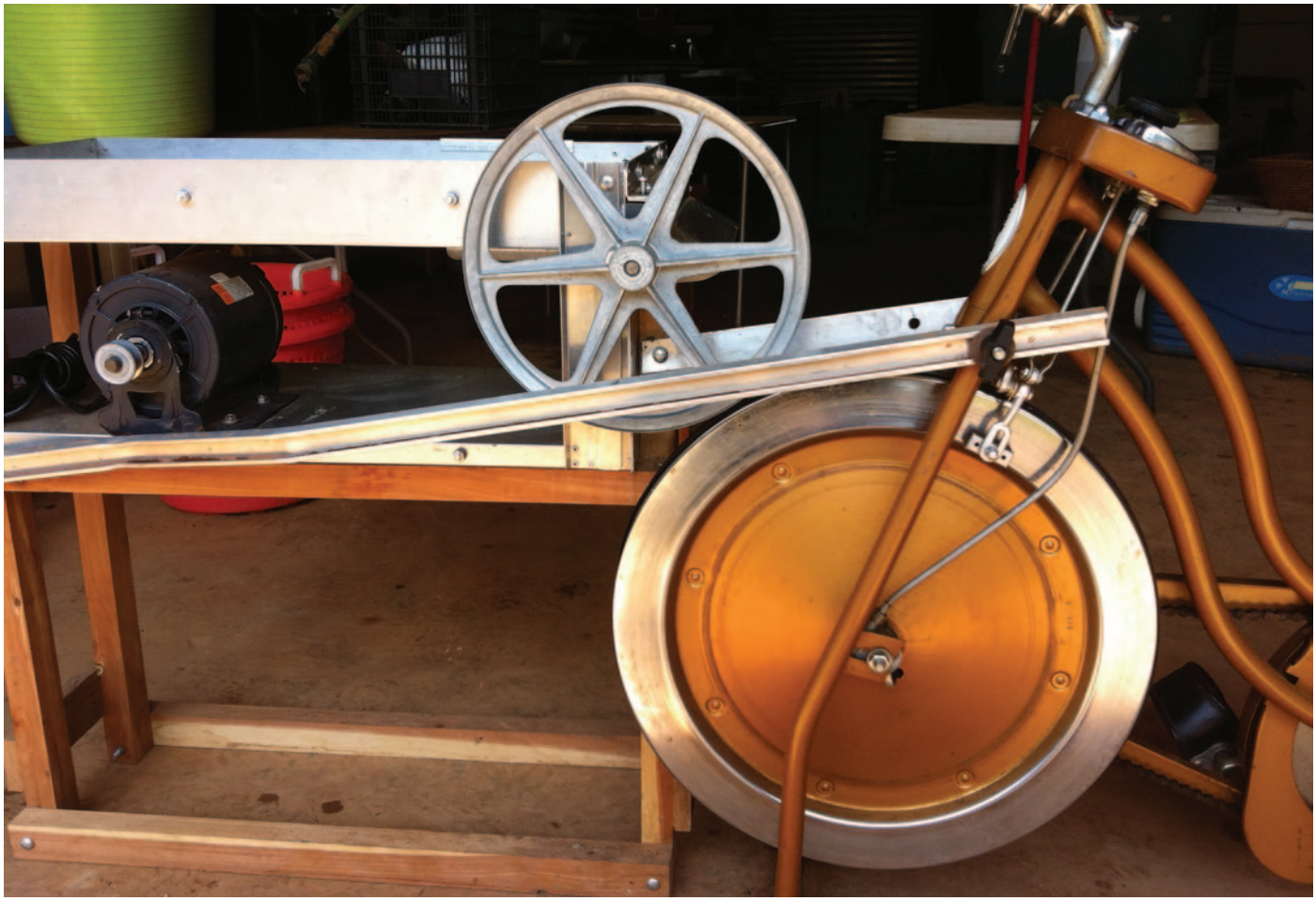
We grow a lot of peas: English peas in the spring, and fresh southern peas Pinkeye Purplehull, Cream 40, Lady Peas, and an heirloom pea that's called McGahee. After several years of sore thumbs from shelling peas, earlier this year we bit the bullet and purchased a "Little Sheller" from Taylor Manufactoring Company for about $475. We wanted to use it at the farm, and also thought it would make a great addition to our market stand, along with our pepper roaster. The trouble is, there are no electrical outlets at the market, so we had to brainstorm ways to make the sheller work without the attached motor. Normally, the motor drives a belt that attaches to a large flywheel, which turns the rollers that shell the peas. We had the idea to hook up an old exercise bike with a moving front wheel (my grandparents had one that I used to play on as a toddler) to the flywheel as our power source. After some Craigslist searching, we were able to locate a vintage Schwin XR7 stationary bike for around $50. After that, we built a stand to bring the sheller to the correct height to the bike, and made a removable bracket that kept the wheels in contact with each other. Hoophouse growers will note that the bracket is made from left over aluminum u-channel that we had lying around— it's easy to bend, cut and carry, so it worked out great.

The pedal-powered sheller is a magnet for kids whenever we set it up. We had one kid help us for almost the whole market. His parents let him stay because they said normally they couldn't pull him away from his Nintendo DS. Pretty Cool.

There are obvious benefits to these services: People come back to the market because their children become obsessed with shelling and eating peas every Saturday. These folks not only buy from me but they also purchase from other vendors, which is beneficial to the market as a whole. We get great word of mouth. I get to have fun and get kids excited about fresh food.

There are also consequences to this type of setup. Because we are not a licensed food establishment, we offer the sheller as a free service to our customers, so we can only recoup our cost from increased sales. Since there are moving parts and eager hands everywhere, we have to staff the sheller at all times, even when we are not actively shelling peas, at our own cost. The sheller and bike are heavy and awkward, and they take up a lot of room in our van.

For us, the benefits greatly outweigh the concerns, mostly because our customers love it! I believe we will see more growers experimenting with tools and techniques that make market more enjoyable for everyone, and I can't wait to see what other people come up with.



Solar-powered mister

Heat is the death knell of a beautiful market stand. We routinely use hand spraying to cool things down, but the hot Georgia sun can turn most greens into JELL-O within minutes. To combat the heat, we put together a few items that we had readily available on the farm, and fashioned an effective, if crude, market cooling system.

Since we decided not to keep chickens this year we had an extra solar-powered fence charger lying around. Basically, it consists of a solar panel, a small battery and a timed switch, which sends the electricity out of the charger in pulses. We also had a spare 1 gallon/minute pump that we knew pulled very few amps. The only major modification we did was to run wires directly from the battery rather than through the pulsing switch — that provided enough even electricity to run the pump.

We attached the pump to a large cooler filled with ice water. We used 1/2" irrigation tubing for the water line, and punched seven misting heads directly into the line. We then took some t-post ties and made hangers to attach the hose to our market tent. We quickly discovered that we had to fill the line while it was still on the ground, because the pump couldn't start the flow with that kind of elevation.

After that, the major challenge was noise. Even though the pump is small it makes a loud, annoying buzz, and we didn't want to drive our market neighbors nuts. Our solution was to create a box out of an old drawer and encapsulate the pump in insulation. We cut a piece of plywood for the top, and drilled 1/2" holes on either side to run the irrigation lines. The insulation dulls the buzz to a hum that you can barely hear. Since we are situated in early sun at our market, the panel is able to recharge the battery almost immediately, and our large white cooler (24 gallons) holds the perfect amount of water. More importantly, our veggies and customers remain cool on the hottest of days, and we do too!

A solar fence charger sits on top of the insulated box holding an irrigation pump, which pumps cold water from the ice chest to the white tubing hanging from the market tent. Emitters spray a fine mist that reduces the temperature 10 degrees or more. The pedal-powered pea sheller is at right.

Frost takes out the flowers, but there's more work

By Erin Benzakein

October is probably the hardest stretch of the year for me both physically and emotionally. While spring is filled with a hustle that is difficult to keep up with and summer includes late nights, early mornings and strict deadlines, October is just plain exhausting. At this point I've lost my excitement for it all and excitement is what fuels me. Yes, the flowers are still blooming but at a much slower pace. Our once abundant availability list is narrowed down to only a handful of offerings. The wind and rain inevitably return and with them the garden slides into a bruised and battered state. As the month progresses, harvesting feels more and more like a scavenger hunt. We are all weary from the long season and secretly wish for the first hard frost.

Walking out into the field the morning of our first frost is such an emotional moment. Seeing the dahlias burned black with cold and the once shining zinnias crispy and withered is both a relief and a heart-stopping loss. We always observe the occasion with a hearty home-cooked meal and moment of pause to give thanks for the abundant season's completion. The next few days are generally a bit surreal. Without the garden setting the pace of our life, it is easy to feel quite lost. After a few days of rest, my spirits always rally and the task of putting the garden to bed begins. There is a mile of landscape fabric and irrigation to take up and store, dahlias need digging, bulbs are begging to get tucked into the ground and all of these tasks should ideally be completed by the end of the month. True rest is on the horizon but still just out of reach.

Before the frost arrives and changes the pace of everything, there are so many tasks that are still begging to be done on this side of the season. First and most important, at least in my book, is a season review. I am often fooled into thinking that once the season is over I will promptly sit down and record all of the many successes and failures we've experienced over the year. But so far this has never actually manifested. When I finally get around to it, my memory is hazy. Scrolling through my photo library helps a bit but a detailed garden journal is better. From March through about July, I am pretty good about jotting things down. My wish lists, seed sowing dates, our many failures, winning bouquet recipes, etc. are noted in various notebooks throughout the garage and house. It takes time to gather and reconstruct my random ramblings but these details are priceless when setting the course for each new year.

But, like clockwork, the summer crazy takes over in August and my recordkeeping falls away. So before the frost wipes out any evidence that a vibrant garden once existed, I take a few hours and walk the property, writing down what I see and what I remember. Here is a little sample of what my notebook says today: "The

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mums in the hoophouse weren't staked on time and have crooked stems, dang it, but good job on pinching them on time; direct sow cress and flax every 2 weeks for as long as you can stand it since they are invaluable fillers; the brain celosia should have been pinched harder; two 75 ft. rows of nigella planted at the same time is WAY too much; only grow butterfly snapdragons since the standard types are so boring; just grow bells of Ireland in the hoophouse since they get so banged up in our rainy climate; grow lots more gomphrena in the hoop; ornamental peppers are terrifyingly abundant; even though statice is supposed to be outdated it is so awesome in bouquets especially the blue; sunflower 'Panache' is my all-time favorite — please grow more next year; grow trachelium in the hoop since it blooms too short in the field; asclepias is awesome in September bouquets; next year grow more annual asters but watch for caterpillars early on since they wreak havoc on the flowers; don't give the foxglove so much manure or they will get 7 ft tall and you won't be able to sell them!" My recordkeeping is far from perfect but these rambling, somewhat random notes do help paint a picture of what did and didn't work during the long and busy season.

My wise flower farming friend Ralph Thurston from Bindweed Farm in Idaho shared that he always orders his seeds and plugs in September or October, before the sting of summer has faded. Waiting until January when dreams are running high is a recipe for chaos and over-commitment. I'll admit that I'm a flower junkie, through and through, but Ralph's advice has saved me an enormous amount of heartache and crazy making lately. In the past I always saved "seed shopping" until early January when I could slowly peruse each and every catalog, highlighting and gathering as many varieties as I possibly could. While getting to grow so many different flowers in such a short span of time was thrilling and educational, the emotionally driven scattershot often left me with a whole lot of duds and not enough bulk material for orders. I've more recently moved to staying with about 90 percent tried-and-true varieties, adjusting for color when needed, and save just 10 percent of our ground for new additions. While a wee bit boring for a plant nut like me, it does allow us to focus on mastering the growing, succession planting and harvesting of each crop instead of dashing all over the place, testing vase life, yanking out less-than-stellar plants and assessing. With a smallish patch of newbies each year, we can give them proper attention and aren't left in the lurch if they don't live up to the catalogs claims. So this month, after things slow just a bit, I will be submitting my seed orders as well.

Other fall chores

In September and October I dry bundles of ingredients for wreaths and centerpieces. This is a wonderful way to cut costs later on and make our holiday décor even more garden-infused. Gomphrena, especially the orange, nigella pods, scabiosa pods, wheat, flax, cress, sedums and artichokes are all good candidates for drying.

Before too many blasts of frost hit and affect their quality, I also like to round up any remaining rosehips, snowber-

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Fall flower chores

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ries, crabapples, dusty miller and parsley for thanksgiving centerpieces. A bit later but before real cold threatens and mold sets in, I also comb the hoophouses, gathering up the last of the scented geraniums, lilies, tomatoes on the vine, salvia (leucantha and pineapple), ornamental peppers and mums. These ingredients, combined with greens from the forest and garden roses from Peter Kort Roses in Oregon, make up our bountiful holiday bouquets.

Winter squash is a great addition to the fall lineup. After picking, we gently wash each fruit in a 5% bleach water bath and then lay them out on tables in the garage for a few weeks. This treatment allows the rind to harden which ensures longevity in storage or as home decor. We have had a number of winter squash persist for over two years in the house and often hear similar results from holiday customers. They make the most beautiful fall and winter decorations, especially the heirloom varieties.

This year we grew a record breaking 2,000 dahlias on our little plot and they were an absolute success! But in all honesty, I am totally dreading the backbreaking task of digging them up later this month. I've heard rumors that other growers in zone 6 and higher leave them in over winter but with the wonky weather we've all been experiencing, the risk seems a bit too great right now. I'm still on the fence since we are zone 6b/7. If we do experiment with leaving a few rows in, I'll report back with the results!

Bulb planting is another task that needs attention here soon. Tulips, narcissus, anemones, ranunculus, alliums, etc. need to be planted in the coming month. While clearing a spot and putting out the effort now can feel like just another exhausting undertaking, the rewards next spring will be so very worth it!!! If you forgot to pre order bulbs earlier this summer, be sure to check with your broker because they often have extras on hand. For things like ranunculus and anemones, early ordering ensures the best varieties but, who knows, you may just luck out.

Fall is in the air and with it will eventually come a slower and much saner pace to life. This summer was our best on record but months of go, go, go with not enough sleep and so many flowers have left me ready for a break. But a few more weeks of focus and effort are required to tie things up with a bow. Then we can confidently coast into winter, knowing that the holidays and the season ahead will both be filled with abundance and ease.

Erin Benzakein runs Floret, a small organic flower farm in western Washington. If you'd like to follow along on her wild flower farming adventure, please visit her blog www.floretflowers.blogspot.com

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Understanding and predicting conditions

By Pam Dawling

The more I practice, the luckier I get. — Gary Player

Some people seem luckier than others. Luck is a label we use when unpredictable things go our way. It's not an external force, it's a combination of being better prepared and then serendipity — the chance alignment of uncontrollable conditions with our hopes. Practice at a skill narrows the odds so that the probability of success is higher. Predicting future conditions includes getting as good as possible at understanding current conditions and extrapolating — doing the mental exercise of estimating what is most likely to follow.

Soil type and microclimates

Most growers test their soil every few years for pH and content. It's also useful to know your soil types, and their ability to hold water and nutrients. Go to the NRCS Web Soil Survey, where you can access archived soil survey maps of your county, and much more. websoilsurvey.nrcs.usda.gov/app/HomePage.htm.

Microclimates are small areas within a larger climate zone that are slightly different. Topography can affect how much rain you get compared to other nearby farms. Positioning of large trees, buildings, slopes, ponds, hedges or other wind barriers can all affect growing conditions. Warm air is lighter than cold air, so cold air rolls downhill and settles in basins and low spots.

Atina Diffley, in her book *Turn Here Sweet Corn*, suggests watching where purslane first germinates on your farm. These spots are the warmer microclimates and good for siting tender crops.

DIY weather forecasting

Eric Sloan in *Look At the Sky and Tell the Weather* (Dover, 2004), explains the journey of a dry, cold polar air-mass from the Northwest of Canada, between the Rockies and Hudson Bay, swooping down into the U.S., across the West, Midwest and up into New England and out over the Atlantic. Reading this book helped me understand various cloud types and storms. He also explains country lore about weather forecasting and the reasons behind such events. Frogs and insects become quiet when cold air moves in, because they have taken refuge from the open air. Before a storm, as the air pressure lowers, bats and swallows skim low down, avoiding the lower pressure air, in the more comfortable higher pressure air remaining. However, as high pressure fair weather moves in low down, they fly higher to use the more moderate pressure air higher up. The insects (lunch!) are also flying higher then.

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Predicting conditions

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at Twin Oaks is controlled by three weather systems, mainly by moisture from the Gulf of Mexico, also by the Bermuda High Pressure area in summer, and the recurrent waves of cold Canadian air in winter. Rain (fairly evenly distributed throughout the year in our county) has slight peaks in January, February and March and again in early June and August. Due to the erratic movement of thunderstorms, some parts of our area can experience long periods of drought. September—November is the drier season but it's also the hurricane season, so the net result is very variable.

Most farmers now have access to frequently updated internet forecasts. It's worthwhile to zoom in as close as possible when setting your local forecast area, and to compare several websites until you find the one that seems most accurate for your area. We use Wunderground, but subtract 5F° from their forecast night lows for our nearest town, and mentally downgrade the chance of rain by 10%, as rain often passes us by as it scoots along the river valley north of us. We're on what the locals call a "dry ridge." We check our local radar and, if the weather is coming from the southwest as usual, we check the radar station southwest of us, to see what's coming next. Likely rain accumulation is another thing I want to have an idea of when planning irrigation, so I use NOAA (National Weather Service) for that. We keep records of maximum and minimum temperatures and rainfall, and compare reality with official forecasts, so we know how to adapt the forecasts for us.

Frost and freezes

One aspect of the weather that growers really like to be able to predict is the chance of frost at night. Understanding what's likely includes knowing plants as well as weather. There are remote frost sensors and alarms, useful if you can handle being woken from sleep with the knowledge that it is up to you to do something right away to mitigate damage. Otherwise, predict, prepare and sleep as well as possible!

At freezing temperatures, the water in plant cells freezes, then the cell walls burst. Young actively growing plants are the most susceptible to cold (more so than older plants). Blossoms are the plant part most easily damaged by frost. Whether or not plants are damaged by temperatures below 32°F depends on the duration of the cold temperatures and the particular crop.

There are two kinds of frost, advection and radiation, and the methods to mitigate damage are different from one another.

Advection frosts result from strong winds bringing in colder air from somewhere else. This is a cold front, and the sky may be cloudy or clear. To fight such frosts, insulation such as row cover is the main approach. It is necessary to trap as much of the warm air as possible, before the colder stuff arrives. In general, we would not consider actively heating plants, but moving tender plants into a greenhouse and perhaps adding a little frost-protecting heating there, might be worthwhile. Otherwise, close up hoophouses, cold frames and greenhouses early in the afternoon, and preserve warmer temperatures. Once the cold front arrives, daytimes may be grey and chilly too, with little chance of rewarming. Double row covers can be better than one thick one, because of the trapped air. Spraying water over row covers can add more protection. Overhead irrigation directly on the crops, wind machines and other active methods are not effective in advection frosts, and will only make the crops colder, as the cold air keeps moving through.

Radiation frosts are localized, not part of a large weather system. If the skies are clear, and winds calm, night temperatures can plummet. There are no clouds to act as blankets on the earth, no winds to mix up the warmer and colder layers of air, not much moisture in the air to slow the temperature change. Days may be warm and sunny, but the nights can cool rapidly. This is what happens in

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desert climates.

Warmer air can hold more moisture. As air cools, the relative humidity increases. That is, the same air, with the same amount of water in it, is "fuller" with water when it cools down. The temperature at which the relative humidity reaches 100% is the "dew point"— in other words, when the temperature gets down to the dew point, the air is saturated with water and excess water condenses out as dew or fog. This then slows the temperature drop. The lower the dew point, the less chance of receiving any temperature-moderating fog and the greater the risk of frost. When the dew point is below freezing, damage to plants can happen very quickly, even without the formation of visible white crystals. This is known as a "black frost."

Radiation frosts can be combatted with row covers or other physical protection, and also by using water or forced airflow (artificial wind). Overhead sprinkler irrigation can help against radiation frosts when the temperatures are not lower than 25°F and the winds are light. Water releases heat as it freezes. But if the wind speed is above 10 mph, the evaporative cooling will increase the damage rather than improve things. Begin the irrigation when the temperature at plant level is 4F° above the critical temperature for that crop (e.g. 27°F for blueberry flowers). It's worth letting a few early blooms go, rather than risk over-watering. Use smaller droplets (misting or fogging) rather than big ones, if you have that option. Fogs retain heat radiating up from the ground, in the same way that clouds do. Surface drip irrigaton can also provide a little warmth (5-7F°), but is only helpful if the soil is not already saturated.

Wind machines (giant fans running off the back of tractors) can mix the air layers up and are useful if there is an inversion (warm air resting on top of cold air). This only works for a light radiation frost: in an advection frost, more wind will just mean more cooling. See www.orchard-rite.com for machines that can handle 5-14 acres.

Cold Air Drains are inverted wind machines used in frost pockets to move cold air which has rolled downhill back up to 300' or so, to mix with warmer air. One can protect 2-16 acres, and they are useful for large areas of vulnerable crops growing in low spots. See www.shurfarms.com

At the beginning and end of the usual frost-free season, radiation frosts may be very slight, and it may well be worth protecting susceptible crops. (Unless, of course, you've reached the exhaustion point we call "Praying for a Killing Frost.")

Once we get to October, we keep two cards pinned to the bulletin board in the shed. One is to help us predict the likelihood of frost – here it is:

Frost is more likely at Twin Oaks if:

•The date is before 4/30 or after 10/14.

•The Wunderground forecast low for Louisa Northside is 38°F or less. (Subtract 5F° from Louisa forecast for likely low temperature at Twin Oaks.)

•The daytime high temperature was less than 70°F.

•The temperature at sunset is less than 50°F.

•The sky is clear.

•The soil is dry and cool.

•The moon is full or new.

•There is little or no breeze, although if temperatures are falling fast, the wind is from NW, the sky is clear, then polar air may be moving in, and we'll get a hard freeze.

•The dew point forecast is low, close to freezing. Frost is unlikely if the dew point is 43°F or more.

Our second card is our Frost Alert Card. Here it is:

•Cover lettuce, zucchini, summer squash, cucumbers, beans, Chinese cabbage, celery.

•Harvest anything above that can't or won't be covered.

•Harvest peppers facing the open sky, tomatoes, eggplant, corn, limas, cowpeas, okra, melons.

•Check the winter squash and harvest any very exposed squash.

•Set up three sprinklers for the night, usually on the tomatoes, peppers and a selection of beds with high value crops close together.

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Growing Degree Days

Insects are cold-blooded and depend on the temperature of their environment for development. Plants grow faster in warmer weather (up to a point!), whenever the temperature is above the threshold base temperature. Growing Degree Days are a measure of heat accumulation that can be used to indicate when it's warm enough to plant tender crops, or when they might be ready to harvest, or when to expect an emergence of overwintering pest insects. For example, the first instars of the Colorado potato beetle are seen when 185 GDDs have accumulated. Using GDDs helps us figure out when to plant according to actual conditions, rather than simply by the calendar, a method which will not work well now climate change has taken hold.

For most purposes a base temperature of 50°F is used – this is roughly the temperature at which most of the changes we're looking at start to take place. Each day when the temperature rises above the threshold, growing-degrees accumulate. To calculate each day's GD units, you'll need a maximum and minimum thermometer. Average the maximum and minimum temperatures for the 24 hour period, and subtract the base temperature. Add each day's figure to the total for the year to date. This is the GDD figure.

If calculations are not your forte, and you're content with a rough figure, not specific to your farm, there's a calculator on www.weather.com/outdoors/agriculture/growing-degree-days. Simply enter your zip code, the base temperature to calculate from, and the start date and the finish date. For example if you want to see if you have accumulated enough GDDs to sow sweet corn, start from the beginning of the spring and enter today's date and the calculator will show you the GDDs to date. If it's more than 200 on a base of 50°F, you're good to sow! A good site to bookmark, as you'll need to return to it often. Wikipedia has a good explanation at www.en.wikipedia.org/wiki/Growing-degree_day and www.farmprogress.com has a free mobile phone app! Montana State University has a leaflet, mostly aimed at grain farmers, but with a good introduction: www.msuextension.org/publications/AgandNaturalResources/MT200103AG.pdf. There's more explanation on www.virginiafruit.ento.vt.edu/Understanding_Degree_Days.html . There is a table of GDD for 10 insect pests at www.offices.ext.vt.edu/chesterfield/programs/anr/GrowingDegreeDays/growing_degree_day.html. The University of California Davis has a website with models for estimating the appearance of various pests: www.ipm.ucdavis.edu/WEATHER/index.html

There are many other uses of GDD numbers, such as to assess the suitability of a new crop for your farm, estimate the harvest date of a crop, estimate heat stress on crops, predict pest outbreaks and plan dates for succession

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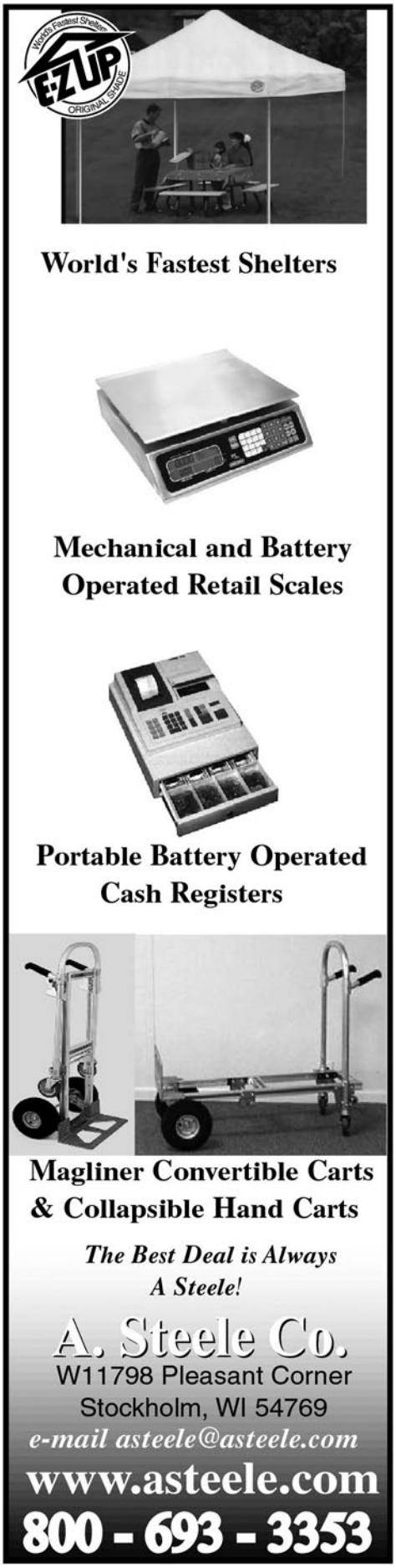

sowings. I'm not there yet, but it's good to know where to turn if you need closer predictions of events. There's an article on doing this for sweet corn at http://www.hort.uconn.edu/ipm/veg/htms/scpltsched.htm

Phenology

Phenology involves tracking when certain wild and cultivated flowers bloom, seedlings emerge, or various insects are first seen. These natural events can substitute for GDD calculations. Certain natural phenomena are related to the accumulated warmth of the season (rather than, say, day length), and by paying attention to nature's calendar you will be in sync with actual conditions, which can vary from year to year, and are changing over a longer time-scale.

Many people know to sow sweet corn when oak leaves are the size of a squirrel's ear. By this point, regardless of date, the season has warmed enough to get oak leaves to that size, which happens to be warm enough for sweet corn seed to germinate and grow well. Some people transplant eggplant, melons and peppers when irises bloom; sow fall brassicas when catalpas and mock oranges bloom; and know to look for squash vine borers laying eggs for the two weeks after chicory flowers. Some transplant tomatoes when the lily of the valley is in full bloom, or the daylilies start to bloom.

Lilac is often used to indicate when conditions are suitable for various plantings:

- When lilac leaves first form, plant potatoes
- When lilac is in first leaf (expanded), plant carrots, beets, brassicas, spinach, lettuce
- When lilac is in early bloom, watch out for crabgrass germinating
- When lilac is in full bloom, plant beans, squash, corn. Grasshopper eggs hatch.
- When lilac flowers fade, plant cucumbers.

Also, recording the dates of the same biological events each year can show longer term climate changes. In Europe, 500 years of recorded dates of grape harvests provide information about summer temperatures during that time. Project Budburst www.budburst.org is a citizen science field campaign to log leafing and flowering of native species of trees and flowers across the US each year. Each participant observes one or more species of plant for the whole season.

Pam Dawling is the garden manager at Twin Oaks Community in Louisa County, Virginia. The gardens supply all the fresh produce for the community's 100 members. Her book, Sustainable Market Farming: Intensive Vegetable Production on a Few Acres, will be published February 1, 2013.
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A farmer's take on dressing for success

By Josh Volk

Recently, a group of farmer friends had an email discussion on the issue of going barefoot or wearing sandals in the field. I was impressed to hear pretty much every farmer who weighed in, including many folks who are in most ways your typical hippy, back-to-the-land farmer stereotypes, say that after many years farming they now require closed-toe shoes on the farm.

That conversation got me thinking about dressing for health and safety on the farm. I'm not going to presume to tell you what to wear on your farm. There is so much personal preference in what you wear, not to mention climate variation. However, I like to put thought into everything I do, and dressing appropriately is one of those tasks that I actually think about (although, as my partner will tell you, that doesn't mean I care what I look like; fashionable I am not). What I'm going to tell you is what I choose to wear and why.

If you have employees you'll have to decide where to pick your battles, and what gear to require on the farm, or even to offer your employees. According to OSHA (standard 1910.132) if you determine that special safety gear is required for a job, you have to provide it unless it is something usual, like work boots or rain gear. In that case you can still require it, but you don't have to pay for it.

The author's typical work clothes are chosen for comfort and sun protection, not fashion. A wide-brimmed hat, with the chin strap tied behind his head, and a collared shirt reduce sun exposure on his face and neck.

Footwear

I never required other folks to wear closed-toe shoes in the field, but I always required them around the tractors. Personally, for the last decade or more I've worn leather closed-toe, slip-on leather boots. I like slip-on shoes because they are loose and airy and easy to get off when I go into the house. I like ankle high, leather boots because they keep out most of the dirt. I've worn many different brands: Blundstone, Rossi, Keen, Danner. Heavier boots definitely last longer, but I like the lighter, more flexible ones for all day use in the summer and for squatting in the rows.

Recently I've switched to leather clogs, which are common in restaurants and other standing jobs. They're ok, but I'll go back to boots, as soon as these wear out. I don't like the elevated heel and they are a bit prone to dirt clods finding their way in.

I haven't found any treatment that reliably keeps leather from cracking when it constantly goes through cycles of wet, muddy, and dry. Even when I've been good about re-treating the boots weekly they still crack in a year or so, thinner leather definitely being less durable (imagine that). I've learned to wear rubber boots in the morning dew until it dries out and then change into my leather boots.

For rubber boots I highly recommend XtraTuf boots. Built for commercial fishing, they are much softer and more form fitting than others I've worn. I have two pairs, a thin summer pair and a thick winter pair. They do eventually crack, usually at the ankle, but then I cut off the tops and have slippers. I've had three pairs over the last 12 years and I wear them year round so they get a lot of abuse. Wool felt insoles are essential for absorbing moisture in the boots and in the winter for insulating the sole. I have a lot of friends who swear by Bogs and I'm sure there are other good brands out there. There is no reason in this profession (especially here in the Northwest) to skimp on quality, comfortable rain boots. XtraTufs also come in a steel toe version which you might consider if you're working a lot around heavy machinery or doing a lot of construction.

I'm a big fan of wool socks, even when it's really warm. I picked this up from a guy I worked with 20 years ago who had very sweaty feet. Wool, unlike cotton, absorbs moisture without getting cold or clammy like cotton. Wool socks are more expensive, but the quality and comfort available today is amazing compared to what we had when I was growing up. I've found the lightweight versions too prone to holes so I wear medium weight and I'm comfort-

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able in those year round, wearing lower-cut socks in the summer.

Farmers should also be aware that there is potential for non-freezing cold injury to toes (and fingers) from working in cold conditions, especially when it's wet. Immersion foot (also called trench foot) is caused by constant poor circulation to toes or fingers from cold conditions and is exacerbated by wet. It damages the nerve endings, resulting in painful responses to cold and some loss of feeling that lasts even after warming. Dry wool socks and good rain boots that aren't too tight and that are appropriately insulated prevent this and keep me comfortable in all temperatures. Many of us (including myself) have had immersion foot without even knowing what it was and it is completely preventable.

Headwear

I don't like wearing sunscreen. It costs a lot, it takes time to apply and it's hard to get it even. I'm never sure how good it is for me, and it's hard to wash off of my hands before working with food. I wear big hats instead. My favorites have been panama style hats with oversized brims which are woven from straw and are light and pliable. I found out that hat bands actually do something when I removed the hat band from my first panama and it immediately blew off after that - proper hat bands keep the crown tight and adjust it to your hat size. I replaced the hat band with twined yarn after that and had no problems for years until that hat finally wore out.

Recently I've had a harder time finding broad-brimmed panamas so I've been wearing a sewn palm hat by Tula (tulahats.com). It's a bit heavier and not quite as breathable, but it's been durable and less floppy than a panama when it gets wet. Instead of a proper hat band it has a chin strap. Taking a cue from park rangers, I've tied the chin strap short so that it snugs in behind my ears and wraps behind my head when I put the hat on. This is much more comfortable than wearing it around my chin, and almost as effective in keeping it from blowing off. I also never have to adjust the strap and it doesn't dangle long when I don't have it on.

I should also mention sunglasses, which we don't get to wear enough in our climate, but are another good investment in sun protection. Basically the important thing here is that they cover your eyes and don't let a lot of light in from around the edges, and that they block UVA and UVB rays 99-100%. If you're wearing safety glasses a lot anyway for tractor work, or similar jobs, you might as well get a pair that are ANSI rated as safety glasses as well. These are commonly available at hardware stores and lumber yards for about $10.

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Long sleeves and pants

I wear long sleeves and long pants year round. I first learned to do this working in gardens in Arizona. I'm fair skinned and all day in the sun would have turned me into a complete lobster, sunscreen or not. I'm not sure if I could do it in the Southeast where it's super humid, but on the West Coast, no problem, and even when I was in Connecticut I kept it up. When it's not too humid I actually think that keeping the sun off of my skin keeps me cooler than if I were wearing less clothing (I think this has to do with radiative heating vs. conductive heating, and also thermal conductivity - but that's a longer story). I go to the local Goodwill and buy light cotton button-down shirts with collars. The collar keeps sun off the back of my neck and button-down shirts tend to be loose and light enough to breath well. They are also long so there's no exposure for the lower back. Folks on the farm crew that wear t-shirts and squat or bend over tend to get a burned stripe between the bottom edge of their shirt and the top of their waist band that they call the "farmer cummerbund."

For pants I prefer the feel of cotton, which is very breathable and soft. Light khakis are usually my choice, especially in the summer when denim is just too heavy and restrictive. Most folks also know that light colors are cooler than dark colors (which gets back to radiative heating - again, a longer story). I've also worn some high-quality nylon pants which are much, much more durable and have the added advantage of drying quickly. They aren't quite as comfortable as cotton but they last at least twice as long.

My pockets tend to collect a lot of small irrigation parts, pocket knives and stones, tape, pens, etc. I tend to wear out the pockets of cotton pants before anything else so I have a gardener's tool belt with a mesh pouch, which helps save my pockets. The mesh is better than solid because it lets dirt fall out, and a lot of what I'm putting in the pocket is dirty. The belt is a perfect place to hang a harvest knife sheath or a pruner pouch as well.

Rain gear

Here in the Northwest, we farmers spend an inordinate amount of time in our rain suits, even when it's not raining. Harvesting corn, or worse, broccoli in the early morning dew on a summer day you'll look like you just walked out of a monsoon after about five minutes in the field, at least from the waist down. I've worn Grundens foul weather gear, which is the best heavy duty rain gear I can imagine. If you're looking for heavy and durable I recommend their heavyweight gear, but over time I've come to appreciate something much lighter with better mobility, even though it's slightly less durable.

For many years I wore a very simple, coated nylon, packable hooded rain coat and pants by Helly Hansen. Unfortunately they stopped making that one I had so I switched to Patagonia's most basic rain gear when the seam tape failed on the Helly Hansen gear after about five years. The Patagonia Torrentshell gear is very basic, light weight and slightly breathable. It fits me perfectly and for the price it lasts just as long as any other rain gear I've had, and a lot more comfortably. I prefer having pants as opposed to bibs because they're easier to get into and out of and I don't find them any less protective. I have found that it's best not to get the rain gear sized too large because any extra folds of fabric tend to create wear points. I size it large enough to fit over my winter layers snugly with no restrictions. That leaves it loose enough to wear comfortably in the summer as well.

A trick learned from firefighters: Leave pants on boots for quick exit and re-entry.

One small trick that I learned when I moved here to the Northwest that I love is to leave rain pants attached to your boots. This means pulling down your pants and just leaving them around your ankles before you take your boots off. So simple, but it really makes it easier, and cleaner, getting pants and boots on and off. I've noticed this is the way firefighters get their pants and boots on too.

Washing produce is one of the places where I get major mileage out of my rain gear and boots. A lot of farmers I know have long aprons hanging in their wash areas for the crew. This is a great alternative to suiting up, especially when it's hot out. It doesn't preclude the need for boots,

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but no need to don the pants and jacket as well if it's hot and dry out.

Underwear

Yep, I'm even going to talk about underwear! Mostly I just want to say that long underwear, bottoms especially, when it gets cold are essential. A lot of my friends really love wool, but my skin is too sensitive, and wool is expensive. I've gotten great mileage out of Patagonia's Capilene and synthetic does do a great job of drying when I unintentionally get it wet. I also like that Patagonia will take back any worn-out clothing to recycle it and keep it out of landfills. I also appreciate that the cotton they use in other clothes is organic and has been for years, especially considering the amount of chemicals that are used in cotton production. You may also notice that many conventional cotton garments are treated with chemicals that help them wear longer and wrinkle less, but reduce their breathability and absorbency.

Hand protection

For years I never wore gloves, except for big leather ones when I was working on the tractor. The ubiquitous blue Atlas gloves were popular for a time, but they were always a little bulky to me and I like to avoid PVC when possible since it's so toxic to produce, so I worked bare handed in the dirt. For the last few years I've been using Atlas' Nitrile garden gloves, and I love that they come in colors now rather than just the black which was a bit warm in the summer. Wearing very thin gloves when working with soil keeps the soil from stripping all of the oils out of your skin, which keeps the skin from cracking. I've also found that I'm a lot less tentative when grabbing weeds or pretty much anything else, knowing that there's a good layer of protection, and that speeds me up in the field. I don't wear them for most harvests, but for everything else I find them to be excellent. I also find it essential to run them through the washing machine frequently to keep them from getting really stinky. There are bamboo based gloves that are similar, softer and much less stinky, but I've found them much less durable and a bit thicker so not as dexterous.

In the winter, cold hands are slower and sloppier than the warm hands of summer. To some extent this is just how it is, but there are a couple of glove choices that help. Nitrile examination gloves over synthetic glove liners leave good dexterity for harvest and washing, and are relatively inexpensive even though they are basically single use (for food safety reasons the examination gloves really are single use). I've also used neoprene kayaking gloves which keep your hands warm, but are a bit harder to clean and can smell really awful after a while. If I don't need great dexterity I like neoprene work gloves with cotton lining and a long gauntlet. They look like big, heavy-duty dishwashing gloves.

Long aprons in the packing shed keep the crew clean and dry. Photos courtesy of Josh Volk.

I'm not saying you have to spend a lot on your farm fashion. I am saying that I think it's important to realize that what you wear has a huge impact on your minute-to-minute comfort and your long-term health, and you spend a lot of time in it, so it's worth investing a little up front to be comfortable, well protected from the elements, and safe. Especially when working with apprentices I noticed that learning to dress for active, outdoor work is not second nature to a lot of people, and people have a tendency to want to tough it out. There's always some element of toughing it out, but to be in this game for the long haul we need to take care of ourselves. I know too many farmers with skin cancer to want to work on my tan all summer long, and I'm definitely willing to spend a little extra money to be dry and cozy all winter, even when I'm working outside in the rain.

Josh Volk writes regularly about market farming tools and equipment. He farms on the edge of Portland, Oregon, and can be reached at www.joshvolk.com