

SUMMER 2015

SMALL FARM QUARTERLY

Good Living and Good Farming – Connecting People, Land, and Communities



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LOCAL FOODS AND MARKETING

Is being a jack-of-all-trades really better for your bottom line?

Supply-chain relationships help producers and get farmers back on the farm

by Rachel Carter

Joe Bossen loves beans. He enjoys growing beans and working with the farmers who grow beans for Vermont Bean Crafters - producers of organic bean burgers, dry beans, and hummish (bean-based hummus). Bossen especially loves making bean burgers and developing recipes for new Vermont Bean Crafters products. These items can be found in stores and institutions across Vermont and beyond. Rapid growth has them preparing to open their own kitchen, after incubating production and processing at the Mad River Food Hub in Waitsfield, Vermont since 2011.

"I'm amazed at how much time I need to spend talking with insurance brokers, bankers, and all the vagaries of business administration; and in the first couple of years handling our own distribution," says Bossen. "We didn't have a sustainable volume of sales to justify any sort of distribution-that few extra dollars per case really counted then. Every time I was making deliveries, I was also forging new connections - it was distribution and sales in one. Running a distribution channel in-house after a certain point becomes like running a whole other business, and not one I was nearly as interested in as producing food with beans."

Learning to be a jack-of-all-trades takes time. And time is money.

"As local and regional food systems emerge, farmers are interested in scaling up local production and are seeking new ways to be profitable while producing safe and affordable food in a relationship-based local food economy," says Abbey Willard, local foods administrator at the Vermont Agency of Agriculture, Food & Markets. "We have been promoting a vertical integration approach to build a sustainable food business-where a farmer or food business takes on all responsibilities from production to marketing to delivery. Selling products at a wholesale price to a packer, distributor, or other middle-man organization retains only a fraction of the food product's value, so farmers and producers have

learned to incorporate storage, marketing, and distribution into their business plan. It has been thought that reserving all profit margins for the farmer or food entrepreneur establishes ultimate profitability and success."

The vertically integrated system, with farmers struggling to play all roles and working long days across all seasons, in a competitive, time-consuming and labor intensive industry, is challenging for many local producers and does not necessarily prove the most cost-effective.

As Vermont continues to grind its food system relocation gears with implementation of the Farm to Plate Strategic Plan, a new niche local supply chain is developing. Local organizations and businesses are offering aggregation and storage options, exploring local processing and distribution possibilities, and offering value-chain facilitation roles to connect buyers with sellers.

"From a short term financial standpoint we're less profitable, but long term working with multiple partners is proving to be a great move," says Peter Colman, owner of Vermont Salumi, who has built partnerships across all stages of the supply chain, so he can hone in on the details of producing high quality seasoned meats sold at coops and distinct specialty markets throughout the Northeast.

"Working with Vermont Packinghouse has been one of the greatest opportunities for Vermont Salumi," shares Colman. "Their experience in the industry is helping us produce a higher quality product." Colman purchases humanely raised pork exclusively from the Northeast region and the Vermont Packinghouse processes the meat into select cuts.

Vermont Salumi's niche supply chain trail brings the pork cuts to Mad River Food Hub for curing and to Black River Meats for sausage production. "The Mad River Food Hub offered me the chance to help design the facility without borrowing the money while getting their added technical support," Colman adds. The Food Hub in turn can offer other producers a top-of-the-line curing facility. Vermont Salumi's distribution is handled by Black River Meats and Vermont Artisan Meats.

Colman's time not spent on production and distribution allows him to focus more heavily on product development, strategic planning, and sales.

As sales grew for Vermont Bean Crafters, the marginal value of self-distributing began to diminish. Bossen couldn't justify adding a distribution arm to the business at the cost of sales and product development. Instead, Bossen now works with Black River Produce, Farmigo, Metro Pedal Power, Reinhart Food Service, and Simple Scallion. "Instead of distributing, I've been freed up to spend more time on higher level sales. To effectively engage in institutional sales, it's a lot more convoluted than walking in the back of a co-op with samples. I've also been able to spend more time in the kitchen both to dream up new offerings, and also to help continue to evolve the way we approach crafting as usual," shares Bossen.

More farmers are interested in focusing on production and working with others to handle marketing and distribution - but without losing a profit. Wholesale prices may be lower, but margins might be the same or better when marketing and distribution costs are less and a farmer can focus on production instead of integrating everything into the farm operation. What if these costs could be contained and the farm could be more efficient as a whole while returning more dollars to the farm?

Abbey Willard states, "local supply chain partners are proving to be more efficient at their particular

On right, cured pork with pepper, red wine and garlic is known as Pepe by Vermont Salumi

Photo courtesy of Vermont Salumi



Dilly beans are one of the many seasonal products made by Vermont Bean Crafters.

Photo courtesy of Vermont Bean Crafters

roles and a shift is occurring with the establishment of relationships along the supply chain, resulting in a 'value chain' concept of shared risk and responsibility, integrated trust and reliability. Farm and food businesses can explore focusing on their strengths in field production, food processing, or customer engagement and allow critical supply chain roles be covered by other businesses, while also seeing their own business prosper."

The evolution of relocating food production and distribution is exploring how to create the efficiencies of a vertically integrated system in a relationship-based local and regional food economy. Nationally, vertical integration has meant the concentration of market information and knowledge is in the hands of a few businesses, or corporations. "We're looking to do the opposite," says Jake Claro, project manager with Vermont's Farm to Plate Initiative. "We want to get information and knowledge to as many producers and supply chain businesses as we can, but achieve the same, or similar, cost

See jack-of-all-trades page 3



Vermont Bean Crafters kitchen team prepping bean burgers. Photo courtesy of Vermont Bean Crafters



Cornell Small Farms Program Update

Small Farms, New Markets Webinar Series Recordings Available

If you missed the webinars in the Small Farms, New Markets series this Spring, you can now watch the recordings anytime. The series featured smaller farmers that sell to larger markets such as food hubs, grocery stores and restaurants.

Farmers reflected on their decision making process, benefits and challenges, costs, and infrastructure needed to get their products to bigger markets. Each webinar also featured one of the farmer's 'wholesale' buyers who described how they establish productive relationships with smaller farms, and outlined their business models and buying requirements. To read descriptions and watch the webinars, visit <http://smallfarms.cornell.edu/2015/03/30/sm>

[all-farms-new-markets-webinar-series-opens-april-6th/](#)

New Small Farms Events Calendar

We are pleased to announce a more user-friendly redesign of our Small Farms Statewide Events Calendar. You can now click on your region of the map for local events, or browse all events currently offered across New York. As before, this calendar brings you a broad spectrum of trainings, classes, workshops, and conferences from our network of Cornell Cooperative Extension partners and other small farm organizations around New York State. Click here to check out the new map. If you have an event you'd like to submit to our calendar, please send an email to smallfarmsprogram@cornell.edu.

Insurance for Mushroom Growers Now Available

Forest mushroom cultivation has recently been growing in popularity, due to the abundance of forest resources in the northeast and the relative low-cost of startup operations. Growers interested in cultivation have sometimes found one major hurdle; insurance companies would deny or drop coverage upon learning the farm was planning on mushroom cultivation, mostly over fears of the liability incurred with wrongful identification of a mushroom species or with the sanitary conditions associated with cultivation. A new development between Small Farms, New York Farm Bureau, and Nationwide Insurance has confirmed that insurance policies are now available immediately to outdoor, forest mushroom farmers in temperate regions of the United States. Read more: <http://blogs.cornell.edu/mushrooms/2015/04/15/mushroom-growers-able-to-get-insured-in-2015/>

New Videos for Small Farmers

"Hoop House Considerations" is part of the Vegetable Production series from Muddy Fingers Farm, a small vegetable CSA in Hector, NY. Visit our Youtube channel (<https://www.youtube.com/user/cornellsmallfarms>) to view this video and others on Muddy Fingers Farm. Hoop House Considerations was filmed and edited by Peter Carroll of Ithaca, NY.

Additionally, The USDA National Agroforestry Center, Forest Farming eXtension program, Virginia Tech, Cornell University and Paul Smith's College have partnered to create a series of videos detailing silvopasture practices. They are available at: www2.dnr.cornell.edu/ext/info/pubs/silvopasturing/silvopasture_video.html

Farmer Participants Selected for Profit Teams

The Northeast Beginning Farmer Project and New York FarmNet announced the first round of successful candidates for our Advanced Beginning Farmer Profit Teams. This initiative seeks to improve the long-term success of new farm businesses by providing customized, one-on-one guidance from agricultural professionals (financial, production, legal, marketing, etc.). We received many great applications for this competitive program and selected the twelve farms that demonstrated clear needs for this type of consulting service. The farms represent a wide variety of farm sizes, crop types, business models, and regions across the state. This was the first of three calls for applications anticipated within the next 18 months. This project is funded by the USDA's Beginning Farmer and Rancher Development Program. To see the participating farms or learn more, visit www.nebeginningfarmers.org/projects/profit-teams/

Agriculture: One of the Best Fields for New College Graduates

Agriculture Secretary Tom Vilsack announced a new report showing tremendous demand for recent college graduates with a degree in agricultural programs with an estimated 57,900 high-skilled job openings annually in the food, agriculture, renewable natural resources, and environment fields in the United States. According to the USDA and Purdue University, there is an average of 35,400 new U.S. graduates with a bachelor's degree or higher in agriculture related fields, 22,500 short of the jobs available annually. See the entire press release at: <http://nifa.usda.gov/press-release/one-best-fields-new-college-graduates-agriculture>

Message from the Editor

Summer is the time of year when things can't seem to get any busier. I know for myself, being a part time farmer and part time office employee, it's sometimes hard to leave the farm and get to work when animals and plants are demanding attention. So many small farmers wear both of these hats, often needing off-farm income to support the on-farm dreams. This balancing act means sometimes a critical third weekly task is forgotten: REST.

Taking a break from work is an important part of farming. I believe it actually helps me do my work on the farm and in the office better. Even taking just thirty minutes a day to take a nap, read a book, or laugh with a friend or family member helps. If you have a hard time with this, then consider this issue an invitation to, at the very least, take a break from the daily toil and learn how to farm better while doing it. I'm pleased that we have several articles in this issue that go beyond the nuts-and-bolts and discuss how personal health and family are important parts of the farm, too.

So find that hammock in the shade, pour yourself a tall glass of lemonade, and enjoy!

Steve Gabriel

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and logistical efficiencies that you see at the national level. We do not want to recreate the national system, but do want to have cost efficiency. How we can do that in Vermont-a local system with local supply chain control-is at the core of reaching the goals of the Farm to Plate Strategic Plan."

Rachel Carter is the communications director at the Vermont Sustainable Jobs Fund, a non-profit organization created by the State

of Vermont to help develop Vermont's sustainable agriculture, renewable energy, and forest product businesses. She can be reached at 802-318-5527 or rachel@vsjf.org.

For more information visit:
www.VTFarmtoPlate.com
<http://vermontsalumi.com/>
<http://vermontbeancrafters.com/>
<http://agriculture.vermont.gov/>



Vermont Salumi's Benito sausage combines Italian and Mexican flavors.

Photo courtesy by Vermont Salumi

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SMALL FARM QUARTERLY

Good Farming and Good Living —
Connecting People, Land, and Communities

Small Farm Quarterly is for farmers and farm families — including spouses and children - who value the quality of life that smaller farms provide.

OUR GOALS ARE TO:

- Celebrate the Northeast region's smaller farms;
- Inspire and inform farm families and their supporters;
- Help farmers share expertise and opinions with each other;
- Increase awareness of the benefits that small farms contribute to society and the environment;
- Share important research, extension, and other resources.

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Cover: Swamp Milkweed (*Asclepias incarnata*) flowering in a summer pasture in New York. The USDA reports that sheep have died from eating it, yet many farmers observe sheep eating the young shoots without harm.

LIVESTOCK AND POULTRY

Minerals for Sheep

by Ulf Kintzel

Many farm stores offer ready-to-use minerals for sheep in a loose form in a bag. If you are happy with those minerals and if you can afford buying them, read no further. If you find them too pricey or if you are astonished how much of them are consumed by your sheep when given free-choice, then I have some suggestions for you.

Sheep minerals should be given free-choice and in a loose form. Intake should not be restricted, and they should not be offered as a mineral block. However, the sheep minerals I encountered over the years all have additives like corn distillers, dried grains, and sugar cane molasses, which increase consumption unnecessarily. I used to add one to two thirds of salt to regular sheep minerals to stifle consumption without leading to any deficiencies. That worked well for me for many years. However, on my eternal search to reduce cost I tried a few new options.

Let's start by discussing what sheep need in minerals and on the other hand, what they should find plenty in healthy and diverse pasture. The most obvious needed supplement is salt. Salt is needed for many physiological functions. Without salt the body is unable to function.

Secondly, a trace mineral deficient in soils (and therefore in pasture) in many areas of the U.S. is selenium. Selenium deficiency causes what is called White Muscle

Disease. It causes a sheep to lose control over leg muscles and it can also simply cause a heart attack since the heart can also be affected. In addition, it can cause a good number of other problems not as easily identified as selenium deficiency such as inability of a new-born lamb to suckle, lack of growth in lambs, lack of fertility in ewes - the list goes on. So if you are living in New England or the Northeast, chances are you will need to supplement with selenium.

Another element needed in a sheep mineral is iodine. Just as we need in our salt added iodine, especially for the young, so do sheep. A lack of iodine can lead to a goiter in new born lambs. This goiter is a symptom of a dysfunctional thyroid gland and is likely to kill the lamb. Other less obvious problems occur due to a lack of iodine as well. So iodine is definitely a trace element that is also needed in a sheep mineral.

Additional desirable trace minerals are cobalt, manganese, iron, molybdenum, and possibly zinc. I addressed copper in my column in the previous issue of *Small Farm Quarterly* (SPRING 2015) and won't repeat it here.

Now let's get to ingredients that are not needed in minerals. Some vitamins, especially during the growing season, are plentiful in my pasture but are also preserved in good quality hay. Other vitamins are synthesized by the rumen. I can categorically say that added vitamins - which are a pricy addi-



Cumbersome but cost-saving: Mixing your own minerals.

tive in store-bought minerals - are not needed in the minerals for my sheep. So are many minerals (like magnesium, potassium, and phosphorus) and some trace minerals (like zinc brought up by deep-rooted forage and trees, if you have those in your pasture). Due to a very diverse pasture, including deep-rooted plants and interspersed hedgerows I am confident that many needed minerals are readily available in my pasture but definitely not iodine and selenium. No known deficiencies exist in my flock that would suggest otherwise.

While searching through supply catalogues, I came across a Selenium/Iodine Premix sold by Pipestone Vet Clinic. It comes in a five pound bag and only one pound of it is needed for 50 pounds of salt. If you calculate about \$6 for the bag of salt and about \$4 for the premix, including shipping you will come to a total of about \$10 for 50 pounds. Compare that to store bought sheep minerals that sell for a minimum of \$20 per bag and - if your flock is of substantial size - you will soon find the savings substantial. At times I added about a quarter of trace minerals or cattle minerals when I want to ensure that my sheep receive needed copper, i.e. for the developing fetuses. To ensure even distribution of the premix in the salt I pour the mixture back and forth between two buckets while a bucket holds about 25 pounds of salt and half a pound of the premix. These buckets are cat litter buckets I receive from a friend. They have a lid and are ideal for storage.

While this seemed to be an almost perfect

solution for me, the use of this premix also coincided with the occurrence of a few goiters in new born lambs. Correlation does not necessarily mean causation. However, for safety reasons I continue to add almost regularly some trace mineral salt to my mix because aside from copper it also contains iodine. Since then I have not had any goiters. If you can source salt with added iodine I can only recommend it.

Calculating the amount of salt, pre-mix, and the occasional cattle mineral and trace mineral salt that I purchase per year, I spent about \$400 for a flock of 200 plus ewes and their lambs and a couple dozens of goats. The amount would be approximately double, if I were to buy the same amount in ready-to-use minerals instead. Since these ready-to-use minerals are much faster consumed than "my" mix the savings are even higher.

Too complicated? Well, there are always the store-bought sheep minerals. You won't go wrong using them. I recognize that this is the simplest solution if you have a few sheep and it will not break the bank. However, if you have a few hundred sheep you will notice how much money was spent on minerals at the end of the year when you prepare your tax return. Dealing with some inconvenience of mixing your own while saving a few hundred dollars might be worth your time. I know I don't mind saving that money.

Ulf owns and operates White Clover Sheep Farm and breeds and raises grass-fed White

Dorper Sheep without any grain feeding and offers breeding stock suitable for grazing. He is a native of Germany and lives in the US since 1995. He farms in the Finger Lakes area in upstate New York. His website address is www.whitecloversheepfarm.com. He can be reached by e-mail at ulf@whitecloversheepfarm.com or by phone at 585-554-3313.

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FARM MEMOIR**Part Time Farmer, Full Time Mom*****Farming with a toddler gives “family farm” a new meaning***

by Sarah Edelman

It is 5:50 a.m. My alarm is going off, but I have already been awake for nearly 20 minutes, desperately trying to go back to sleep. Thank you, toddler of mine, for being so keen on routine. I hit snooze with the hopes of being able to get those last 10 minutes of beautiful sleep, but to no avail. I hear her downstairs giving her father a hard time during the diaper change. I get up, turn off my alarm, get dressed and start my day.

Now, this is supposed to be the part where I say I make a giant cup of strong black coffee, then head out the door. Nope. I do not drink coffee, if you can believe it. I drink water; “high quality H2O.” I grab a quart Ball jar, add my Cuppow lid, and maybe even a granola bar if I am really feeling crazy. I start my car at 6:15, leave by 6:20, and get to work by 6:30. Toddler and her father are home, and I am grateful.

This job, doing morning chores and packing eggs at Julie’s Happy Hens in Mont Vernon, NH, does allow me to bring her along. However, I choose not to for the chores part; hauling 40+ pounds of food or water whilst wearing a baby on my back does not seem like the safest task (although it would be one hell of a work out!). Julie’s flexibility allows me to leave work after the flocks are fed and watered, then return again with Toddler in tow. I let her free-range or strap her on my back (depending on the weather), turn on NPR, and pack eggs. While on my back, she generally sleeps during this ever-so-exciting task, but then wakes up when it is time for egg collection. She waves and says “hi” to the roosters and guinea fowl, and wants to pet every last one of them. She is my favorite co-worker.

Egg collection, while initially exciting for her, can prove to be a daunting task for us both. Sometimes there are eggs in locations other than a nesting box. When this happens, I may have to reach, bend, or awkwardly step in order to retrieve it. A bending-over-reach-



Seventeen-month old toddler getting the attention of baby geese at Julie’s Happy Hens.
Photo by Julie Whitcomb

ing-motion causes her to be squished against my back which she is not the biggest fan of and she is not afraid to inform me of this. However, she is getting progressively more used to these motions and ultimately complains less. This is a great learning experience for her because we plan on owning chickens once we find our Forever Home.

Vegetable farming with my mini-human brings with it a different set of pros and cons. Last year, when she was only about 6 months old, I could plop her in her chair under her sun tent and work for awhile in our grow space. This year, however, she is her own independent being. She possesses the capability to run, explore, grab, taste (more like put whatever she can in her mouth), etc. These are all fine traits, but not when there are raspberry thorns, chicken wire, and just-sprouting garlic strewn about. She has no regard to rows and what might be growing.



“Helping” Mom bottle feed day old lambs at The Trow Heritage Farm.
Photo by Julie Whitcomb

Now that she is mobile, I have to keep an eye on her at all times. As an employee, it could mean I might be at work for 5 hours, but only get paid for 4 because I have to chase her or nurse/feed her. It means simple tasks take longer than usual. But, it also means I get to spend my days with her outside while providing new experiences. She gets to pet baby geese and watch peacocks strut their stuff and take home not just eggs, but memories as well.

Every day, I am grateful for the ability to bring my child with me while working on the farm of someone else. I often think about what it would be like if I owned my own farm. I feel like I would have less motivation to get work done. “Why do today what can be done tomorrow.” I say this because last year it took every ounce of my being to be able to get out of my house and into our grow space. Once I got out there, I worked. When working for someone else, I am held accountable. Animals are relying on me. I also get to leave at the end of the day with little to no worries of what needs to be accomplished next. However, I have never owned my own farm. I have only grown for personal consumption. If I were growing for my livelihood, I would then have to hold myself accountable. With that comes motivation and ultimately, survival.

I never thought I would want to be a farmer when I grew up. As a child, I had a love/hate relationship with my dad’s garden. I was not a fan of weeding, but I was a fan of learning, observing, and question asking. I remember being in that space with him while I watched rows be created and cedar logs turn into an entranceway. Sadly, I seem to have little to no memory of any food consumption. Fast forward fifteen years and I found myself working in a general store in Central New Hampshire where I was introduced to raw milk for the first time. I was apprehensive and unimpressed. Quite the stark contrast considering it is all I drink these days.

I was more thoroughly introduced to raw milk when I started my Green Mountain College career where I pursued a degree in Sustainable Agriculture & Food Production.

By this time, my love of food had transitioned from cooking it to growing it. I became an active member of Farm Crew and officially started my farming way of life. Sometimes I wish I had taken more of a participatory role in my dad’s garden so that I would not have been so late to the game. It is this feeling that makes me proud to be able to introduce and include my daughter in my everyday activities.

When I found out that *Small Farm Quarterly* was looking for writers, I immediately knew I wanted to write about farming with my daughter. This challenging career choice provides ample opportunity to successfully sow ethics into the minds and hearts of future generations. By exposing her at this young age, she will absorb her surroundings and learn to make decisions on her own based on education and experience. I want her to know where her food comes from and how it got there. I do not want her to be jaded and follow the rest of the flock.

For this to be successful, patience is key for all parties involved. The employer should make clear what the expectations are ahead of time. If the expectations are not being met, then modifications may need to happen on the parent’s end so that they can be met. The child will most likely start to learn patience while farming with mom or dad. This could mean, waiting for crops to grow or egg cartons to be packed. If the farm has animals, the child can be entertained for quite some time, which would allow work to be done successfully by the parent.



Planting seeds in the high tunnel at Upper Pond Farm.
Photo by Baylee Rose Drown

Speaking of which, the patience had by the parents could be the hardest learned and the most gratifying. I know when I try to teach my daughter how not to pull seedlings from their soil or “bounce” eggs like a ball, I have to be stern while keeping my cool. If I come at her angrily, nothing gets learned -- only hurt feelings occur. My time spent with her is precious so I try to make the best I can out of every moment.

Sarah Edelman currently works part time, while parenting full time, at Julie’s Happy Hens in Mont Vernon, NH. She would love to be contacted at edelmans@greenmtn.edu.

State Veterinarian Reminds New York Poultry Industry to Always Practice Good Biosecurity Measures

New York State Veterinarian Dr. David Smith reminds New York's poultry industry to practice good biosecurity to keep their birds free from avian influenza and other diseases. In the Northwestern and Central parts of the United States, animal health officials have detected a few new strains of Highly Pathogenic Avian Influenza (HPAI) among poultry flocks. None have been found in the northeast yet, but animal health officials are concerned as birds continue to migrate back to the U.S. HPAI infections in poultry result in significant illness and death of infected birds. No human infections have been reported with any of these detections, either in the United States or abroad.

"HPAI has not been detected in New York State in many years and we want to make sure it stays that way," said Dr. Smith. "Migratory waterfowl are one way in which HPAI is spread to domestic poultry, but the disease can also spread by the movement of materials and people. There are some simple steps that industry can take that have been proven to prevent avian influenza from entering a flock."

Dr. Smith advises:

- Cages and equipment should be cleaned and disinfected daily.
- Clean clothes and shoes should be worn at all times when caring for birds and hands should be washed thoroughly prior to entering the area in which birds are kept.
- Visitors should not be allowed near birds and equipment should not be shared among poultry owners.
- Poultry should not be allowed to have any contact with wild birds.

Dr. Smith advises that there are no public health concerns associated with these virus strains at this time and the CDC considers the risk to people from these HPAI infections in poultry to be very low. While the risk of human illness from these particular strains is very low, it is still wise to always practice good hand hygiene when working around poultry and their waste. Thoroughly cooking poultry will safeguard against avian influenza and other illnesses that can be acquired through undercooked poultry. The most severe form of avian influenza, known as H5N1, has never been found in the United States.

Early detection is important to prevent the spread of disease. The warning signs of infectious poultry diseases include:

- Sudden increase in deaths in your flock
- Sneezing, gasping for air, coughing, and nasal discharge
- Watery and green diarrhea.
- Lack of energy and poor appetite.

- Drop in egg production, soft, thin-shelled or misshapen eggs.
- Swelling around the eyes, neck, and head
- Purple discoloration of the wattles, combs, and legs.
- Tremors, drooping wings, circling, twisting of the head and neck, or lack of movement

New York has been extremely proactive in preventing avian influenza among poultry flocks in the state. The Department of Agriculture and Markets' Division of Animal Industry has enforced a number of important regulations aimed at eradicating and controlling avian influenza in the live bird marketing system within the state's borders. These regulations apply to all sectors of the system including suppliers, distributors and live bird markets. Source flocks from which birds enter live bird marketing channels are required to test negative for avian influenza prior to moving into the system. State Animal Health Officials monitor the birds in the marketing system by verifying test records and monitoring sanitation levels at the live bird markets.

Poultry held in live bird markets are routinely tested for avian influenza by the Department's Division of Animal Industry. Last year, approximately 35,000 birds in the New York live bird marketing system were tested for the disease. Positive findings for avian influenza in live bird markets are followed by trace backs to address possible infections in supply flocks. If a market tests positive, it is depopulated and thoroughly cleaned and disinfected. Markets must be inspected and tested for avian influenza by Animal Health Officials prior to re-opening. New Jersey and Pennsylvania have similar programs to New York and working together, they provide an effective "early warning" network for avian influenza for much of the eastern United States.



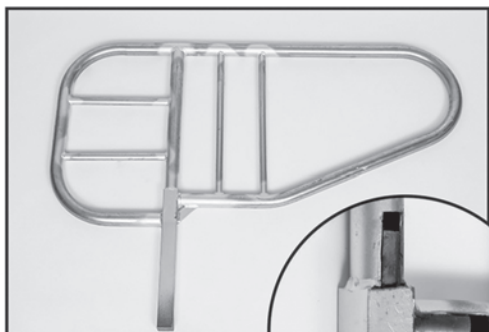
Chickens on pasture.

According to the U.S. Census of Agriculture, there are 6,175 farms with poultry located in New York State. It is unclear how many poultry hobbyists there are in the state.

Additional information on poultry biosecurity can be found at <http://healthybirds.aphis.usda.gov>.

Poultry producers should report sick birds or unexplained deaths to the Office of the New York State Veterinarian at 518-457-3502 or Federal Officials at 717-540-2777 for further investigation. Early detection is key to preventing the spread of this disease. In addition, questions about testing and examination of sick poultry can be directed to Dr. Jarra Jagne, Extension Poultry Veterinarian at the Animal Health Diagnostic Center at Cornell University at 607-253-3900.

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FARM SAFETY

Farm Work and Your Health

Summer on the farm a healthy place to be, but avoid pushing your body to the limit.

by Marybeth Vargha

I remember friends from Philadelphia coming up to visit our farm for the first time. They eagerly wanted the work experience. It didn't take long during a weeding session for someone to say, "This is such back breaking work." I responded, "No, I see it as back building." I liked the exercise in the fresh air that actually resulted in healthy food for people. What I didn't let on was that there were back breaking activities that could really cause permanent damage.

Living in our rural neighborhood you become adept at recognizing a farmer. He can be all dressed up, but there is something in the walk and posture that is peculiar to years working on tractors and hauling heavy stuff. There is a sort of forward lean and bowed legs that work stiffly, the muscled and callused hands that don't quite make a fist, and no matter what the weather, they don't ever run, just keep going at their same pace without ever stopping.

The work is harsh on our bodies, and without taking some time to figure out better ways of doing things you'll be straining your back and stiffening your joints. Injury prevention comes in stages: learn what it means to have a fully functioning body, know the best way to move your body to avoid extra stresses, evaluate the work to look at ways to prevent unnecessary strains, and give yourself the time for restoration of your body after a hard day of work. Here are some tips to consider:

Know the difference between back breaking and back strengthening work. Raking, hoeing, shoveling activities that use your back muscles are good for strengthening. Lifting heavy objects, sitting on machinery too long, and other work that cause trauma to your bones and joints will be 'back breaking'.

Safe lifting. If you don't remember this from your early years, let's review it - lift heavy objects using your legs with a straight back, slightly bent knees, and arms close to your torso (or also known as "ass in the grass, eyes on the sky"). You can't do this with a bend in your back or twist at the



Lydia Sivel-Irons conducting 'The Working Body' workshop for farmers.



waist. Keep reminding yourself to do this until it becomes second nature.

Work within your limitations. Yeah, you might be able to carry two bins full of zucchini, but walking on uneven ground in the mud with the equivalent of 100 lb. free weights is foolish. Think through the engineering solution that works on your farm. Use a cart, wagon, wheel barrow, pull-behind trailer, or anything that will fit through your rows, hold lots of weight and not get stuck in the mud.

Think of ergonomic solutions at each work place. If the potting bench is too low, get a stack of flats under what you're seeding to eliminate the shoulder and back stress. Make sure you don't need to lift or move washing tubs by designing easy filling/draining systems. Use the right size tool. Don't skimp on cheap gloves; if they cause problems, you'll likely not wear them.

A research project being conducted at New York Center for Agricultural Medicine and Health (NYCAMH) is a community collaboration with farm workers in the Black Dirt region of New York to design a better knee pad. You know the problem - there isn't a knee pad on the market that works for farmers in the field. They're either too stiff, keep slipping down, too thin or just darn impossible to wear when you are getting up and down weeding that 200 foot row of mesclun. The design that looks most promising uses a material much like parachutes (tough and light) with some padding, it is easily adjusted by Velcro straps above and below the knee, is longer to cover more of the upper shin, and is very flexible. Small stones and dirt can still get underneath the pad, but it is a great design and easy to make yourself.

Prepare for the work. Consider yourself an athlete doing the decathlon. No coach would let you start without your warm-ups. www.theflexiblefarmer.com offers a booklet "The Working Body" which explains body mechanics and which stretches are best to help prepare your muscles and joints for the work at hand. These warm-ups open up the joints, get the blood flowing to the right muscles and strengthen your postures.

Limit time on tractors. Research on whole-body vibration (WBV) has concluded that there are health risks associated with exposure to the vibrations on tractors over longer periods of time. Some types of tractor work produce more vibrations and shocks to the body, which can cause back troubles or even damaging resonations to the body's organs. If your tractor has excessive vibration, try to fix the cause or install a better seat to absorb some of it. Consider taking more breaks to stretch and recover or switch people between jobs. This can also be true when you use walk-behind equipment.

No matter what, you probably will experience aches and pains. Farmers are likely to just live with pain and keep working. You have to be aware that some pain can be signs of serious trauma to your joints and muscles which won't readily heal on its own, and long term pains can be signs of serious permanent damage that will limit your future wellbeing.

The most common complaint is lower back pain. Doctors find that the most common causes for the pain are spinal

stenosis (a condition in which the spinal canal becomes narrow leading pinched nerves and to being stooped over to reduce the pain), a bulging or ruptured disc (the discs themselves are painful), inflamed facet joints (those joints that give your back flexibility) and back muscle spasms. Treatment for these conditions varies greatly, so if pain persists it's best to get the diagnosis before experimenting with home remedies.

Restorative hydration. Find ways to keep drinking. Farmers can stay outside for hours without eating but you can't stay healthy without drinking. Keep water bottles at spigots, in the vehicles, in the greenhouse and just keep refilling. No room on the tractor? Put your water, snacks, long sleeve shirt, bandanas and first aid kit in a backpack you wear or slip over something.

I was reading the article "Are you cool enough to drink Switchel?" last fall in *Modern Farmer* and just had to smile. Some smart guys are bottling switchel and marketing it to yoga hipsters in the city - what a great business plan! Switchel (aka Whomp) is a traditional drink that many older generation farmers know about. You fill a large bottle with a combination of mostly water, a little apple cider vinegar, ginger, some baking soda and a sweetener if you like (maple syrup works). This hydration includes electrolytes to keep your body hydrated. Keep a bottle with you on the tractor or in the truck whenever you're out in the fields. An extra container of water is especially important to have to soak your bandana, hat or shirt to cool down the blood when you've been in the sun. We're lucky to have a stream along the fields, so a quick dip every few hours is a great blessing.



Kneepad design from Community Collaboration research project at NYCAMH.

A handy resource to have out in the field is the OSHA Heat Safety Tool. It is a free download for Android at Google play or at the iTunes store. This app will download local weather data and calculate the heat index, show you the current risk level, give you information on precautions, how to recognize signs of heat illness and what to do for first aid.

Allow your body some restoration, but don't wait until winter. Each day give your body the rest it needs for your muscles and joints to recover. If you feel some symptoms of strain, use an ice pack for 5-10 minutes to reduce any inflammation and then follow with a hot water bottle or hot shower to increase the blood flow into the muscles. Get a good rest so you can get up and do it all over again tomorrow!

Marybeth Vargha is a member of the Outreach Team of the New York Center for Agricultural Medicine and Health (NYCAMH) in Cooperstown, NY. She also works with her husband on Big Sky Farms in Westford, NY. Contact her at marybeth.vargha@bassett.org.

For more information about NYCAMH services for your farm or community, go to www.NYCAMH.org or call 607-547-6023.

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Farm Credit East Supports Organic Dairy Farm Expansion

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Dan and Marcy Brown with their daughters.

How do you build a dairy farm from the ground up in just a few months? That ambition might seem improbable, unless you're Dan Brown. Dan grew up on the family farm, tending and milking cows alongside his father. In fact, he might tell you milk runs through his veins.

However, when the dairy was sold, Dan left the farm in search of other pursuits. Only to be lured back by his love for the dairy business a short time later. But with the barn in severe disrepair and no cattle, he had much work to do.

When the time came to rebuild, Dan called the lender he knew would understand the potential — along with the challenges. "We were really starting from scratch," said Dan. With the help of Farm Credit East, Dan and his wife Marcy were able to build a new barn and acquire a new herd. And just three months later, they shipped their first load of milk.

With help from Farm Credit East, the Browns have been able to expand their facilities and have gone from a flat milking parlor to a robotic and organic operation. "Everyone we work with at Farm Credit East is knowledgeable enough to understand our creative vision," explained Brown. "Our partnership with them makes our business possible now and into the future."

The family farm is now a 52-cow organic dairy operation ready to enter the local foods movement. "Farm Credit East is allowing us to build something our children can grow into someday. Thanks to their efforts, we are realizing our dreams."



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LOCAL FOODS AND MARKETING

Local Farms Enthusiastic About "Delaware Bounty", a Local Food Outlet

by Mariane Kiraly

In 2014, the USDA Farmers' Market Promotional Grant Program was announced. Cornell Cooperative Extension of Delaware County had been doing a lot of work with small and start-up farmers to assist them with growing a large variety of products, but most still lacked a year-round venue to market their products. Mariane Kiraly, Core Ag Team Coordinator, submitted a grant for a project that would incorporate marketing local products and nutrition education. In late August, the good news arrived: the grant had been accepted!



Delaware Bounty Logo

The Extension team decided to visit neighboring Schoharie County to meet with Maureen Blanchard of "Schoharie Fresh" to see if some of her ideas could be replicated in Delaware County. "Schoharie Fresh" is an online ordering system that is housed on the SUNY Cobleskill campus and it had been in operation for several years. We decided to duplicate their online ordering system and also develop a walk-in store located in the hub of the county, Delhi. A farmers' meeting was held to recruit a variety of farmers to be vendors for "Delaware Bounty". The site was to be in the local business incubator portion of the E-Center on Main Street where a large parking lot, a new building and beautiful, bright room awaited.

The grant budget included the costs of a new, efficient glass door freezer, 3-door cooler, a point of sale system that tracks inventory and can process cash, checks, credit cards, and SNAP/EBT sales. Other items were purchased such as a scale, shelving and vegetable bins. Some office furniture was provided by the incubator and the preceding tenants left a file cabinet, tables and some other useful items. The official opening was March 3rd with 25 vendors' products participating. Food is brought to the store on consignment and monthly checks are sent to each farmer/vendor by the 10th of the next month. The 20% commission participant farmers pay helps cover rent and other expenses.

"Delaware Bounty" offers a variety of products from Delaware County farms only. Beef, pork, veal, lamb, and chicken round out the meat section. Consumers can further choose from Animal Welfare Approved, Grass Fed, Grain Finished or a number of other attributes. All of the meat is USDA processed. Artisan cheese from three farms is also a big seller, along with eggs (free range, pastured, conventional). Maple and honey grace the shelves along with herbs and mushrooms. Baked goods from fruit pies to sticky buns to bread are top sellers and hard to resist! All farmers had to comply with insurance, labeling and processing requirements specific to their particular product. It took time and effort for each one to do the paperwork for inclusion in the store.

Farmers are pleased so far with sales increasing each month. The long winter made consumers long for backyard barbecues, fresh produce and other products usually only found at farmers' markets or farm stands. Only food is sold at Delaware Bounty in order to avoid getting into the sales tax calculations and paperwork. Special days are set aside for Senior Citizens (Tuesdays) and for healthy recipes prepared by the Nutrition Teaching Assistants who work at the store part-time. Recipes and nutrition advice is readily available at the store.

Marketing the local food store takes time, effort and money. Regular ads are placed in weekly papers that are free to all in the county. Radio is also used as a mode of advertising along with signage by the road. Extension's social media such as Facebook and Twitter help get the word out as well. Re-usable bags with the Delaware Bounty logo were ordered and they are given away with each \$25 order.

The store is open from 11 a.m. - 5:30 p.m. Tues-Friday and 10 a.m. - 2 p.m. on Saturday. The walk-in store has proved most successful so far but it takes time to develop an on-line presence. The website is delawarebounty.com. Extension educators are currently looking for more funding to keep the store going into the future.



Aissa O'Neil of Betty Acres Farm, Delhi, NY produces a variety of artisan cheeses.

Comments on the value of local food from

See Delaware page 11

Making Hay While the Sun Shines

by Rich Taber

So you want to make hay, eh? In this fourth installment on farm machinery, I present information for the new, small, or beginning farmer about the equipment, steps, and skills needed to make dry hay. There are many good reasons as to why you should not try to make hay for your farm.

First, the equipment can be expensive to purchase; several machines are needed to make dry hay from beginning to end. Secondly, machinery can be quite expensive to repair and especially if you don't have farm equipment "tinkering" skills. Third, the entire process can be quite time consuming, typically requiring three consecutive days of dry and sunny weather to complete one batch of hay. Such weather can be in short supply in the month of June when most first cut hay needs to be made.

This is the main reason that commercial farmers have gone to making hay silage or baleage which can be made in a 24 hour period. However, high moisture hay requires even more expensive machinery to accomplish, such as large forage harvesters, forage wagons, large round or square balers, wrapping equipment, and specially equipped front end loader tractors to handle all the added weight.

Fourth, you may work off the farm and can't be at home to make hay in a timely fashion. In true Murphy's Law fashion, the weather seems to be beautiful only when you are at work off the farm and rainy when you do manage to squeeze some time at home. Fifth, haymaking



An older side delivery rake used for raking hay into windrows.



Mowing hay with a diskbine.



A labor saving round baler that requires two hydraulic outlets on a tractor.

can be quite labor intensive and finding enough help to load and unload hay can be all but impossible. Nothing is more discouraging than to have all your loaded hay wagons waiting to be unloaded, rain clouds are rolling in, and the help that promised to show up not only doesn't do so, but doesn't even bother to call and let you know. The thunder clouds and rain move in, and your remaining dry windrows of hay get soaking wet, and ruined.

If this hasn't managed to dissuade you from making dry hay, there are several compelling reasons to making hay on your own. First, you can learn how to do the entire hay making process and make top quality hay and save considerable amounts of money as compared to purchasing feed. Good quality forages are creeping up in value each year; hay that used to sell for \$1.00 for a small square bale now easily brings \$3-4 a bale, equating to upwards of \$200 a ton. Second, you can manage your own cropland correctly from an agronomic point of view and not be at the mercy of depending on someone else to come and harvest it for you, ensuring top quality for your animals. Many arrangements have been used between farmers without hay making equipment and hiring someone to do it for you, but whoever has the machinery is literally in the driver's seat. Third, by making your own you may end up with some extra hay that can be stockpiled in your barn for resale to others, or to have on hand as "insurance" during droughts or excessively wet weather.

Making dry hay has several steps and machines needed to complete the process. They are in order of process: mowing, tedding, raking, baling, and loading, hauling, and unloading.

1. **Mowing, or harvesting the hay.** Several types of machines can be used for this process, such as sickle bar mowers, mower-conditioners, disk mowers, and disk mower-conditioners. I would not recommend using sickle bar mowers, as most of these machines that are still in circulation are obsolete and difficult to mow thick swards of hay with. A

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mower conditioner might be the best choice for a small farmer, which is a sickle bar mower combined with a set of rolls which crushes and squeezes the moisture out of the hay; commonly referred to as a "haybine". They also typically need only one set of hydraulic outlets that might be more common on smaller tractors. Haybines are still manufactured, and many good used ones are still in circulation although mostly having been replaced on commercial farms by disk-mowers, or "diskbines". Haybines tend to require lower power tractors; a 40-50 horsepower tractor is sufficient to operate the typical nine foot one, whereas at least a 75 horse power tractor is required to operate a diskbine. Disk mowers normally need two

sets of hydraulic outlets, and as mentioned, a somewhat bigger tractor to power. Disk mowers are also available which do not have rolls present to crush the hay, and can be used by smaller horsepower tractors.

2. **Tedding** is the second step in the hay-making process. A power take off driven tedder gently "kicks up" hay into the air so that it dries much quicker, and is typically done later in the day that the hay was mowed, or the next day. Later on in the season when the grass tends to be drier sometimes tedding can be dispensed with, but in late May and June it is all but impossible to get hay to dry in a timely fashion without tedding. Typically tedders come in two row versions

but one row versions can be found at about half the cost. They tend to be fairly light in their power requirements and a relatively small tractor can pull one. Tedding hay is also indispensable in getting hay to dry out again if it gets rained on.

3. **Raking** is normally the third step in the dry hay making process. Most small farmers end up using the type of rake that is known as a "side delivery rake". Raking is necessary to get the hay up off the ground, and into windrows to dry, where it can be baled.

4. **Baling** and all of the myriad ways to collect hay is probably the most labor intensive part of the haymaking process. The two most common methods nowadays to bale hay available to the small farmer are small square bales and round bales. Small square bales can be dropped directly on the ground, but this is a very labor intensive method as the bales have to be picked up manually. A flatbed wagon is another alternative, which follows the baler with someone on the wagon to grab the bales as they come out of the baler. The most common square balers today come with bale ejectors to throw the bales into a wagon with sides. This is the most efficient way to deal with small square bales.

In recent years, round balers have become quite popular, as much more hay can be put into a round bale, upwards of 1,000 pounds, depending on the size of the baler. This is by far the most labor efficient way to put up bales, as the labor needed to handle small square bales is eliminated. Round bales also do not need to be immediately picked up out of the field like small squares, but cer-



A tedder used for fluffing hay to speed up drying time.

tainly the sooner the better. Round bales can be handled with simple spears that go on front end loaders or three point hitch attachments. They are also a much better choice for people with allergies, as the hay is not handled anywhere near as much as small square bales are. I grew up making small square bales and was miserable every summer, between runny eyes, a dripping nose, and wheezing lungs. In addition to the health benefits, round baling has allowed me to make hay with no other labor.

So there it is; mowing, tedding, raking, baling, and getting the hay home. Nothing is more pleasant than sitting on a small tractor and slowly raking or tedding hay, smelling the delightful smells of freshly mown hay, and enjoying some of the sights of nature while doing so.

Rich Taber lives on a farm in Madison County where he makes hay for his beef and sheep operation. He can be reached at CCE Chenango at 607-334-5841, ext. 21, or email: rbt44@cornell.edu.

Delaware from page 9

farmers appear on the Delaware Bounty website such as:

"We appreciate customers buying local products. It keeps the money local which is so important to the economy of Delaware County." ~ Dennis and Mary Brockway, Stamford, NY

"There are many benefits to buying your food from local producers. The most beneficial is that the consumer can count on a fresh, healthy product that is produced in your very own "back yard". With the support of our local community we are able to live our dream, and you the consumer can enjoy a safe, reliable, healthy, and fresh product for many more generations." ~ Edmara McClenon, Walton, NY

"Food is fundamental to all our lives and

because of this we carefully choose how we produce it. The fact is, locally grown food is fresher and tastes better! We strive to buy our farm supplies and services from local vendors whenever possible. This helps stimulate the local food economy. Local agriculture assures a food system that is safe, affordable and accessible by providing produce and at their peak of flavor and nutritional value." ~ Michael Warholc, Township Valley Farm

Mariane Kiraly is the Core Ag Team Coordinator for Cornell Cooperative Extension in Delaware County, NY.

For more information visit www.delaware-bounty.com



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GRAZING**Planting a Small Silvopasture to Benefit Farm and Livestock**

by Bill Verbeten

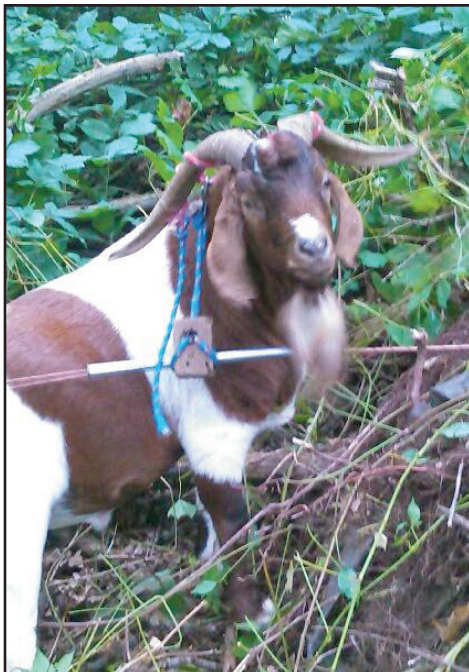
If you have an overgrown woodlot, a strong back, a chainsaw, a small tractor with a mower, a pile of grass and clover seed, and a rake, then you can start establishing a small silvopasture on your land. To help you think about getting started, I will describe my own experience with planting a small-scale silvopasture back home in Wisconsin.

What is silvopasture?

A silvopasture is a combination of trees and pasture. The end goal is to have both working together to provide food and shelter for livestock, with the potential for additional economical yields from the trees. Figure 1 is an example of a well-established grass pasture underneath black locust trees.

**Figure 1: Established silvopasture.****How do you plant a silvopasture?**

Silvopastures can be established by cleaning up and partially clearing woodlots or by planting trees into fields. For this article I'll only discuss planting a silvopasture into an already wooded area. To establish a silvopasture in a forest, you will need to 1) increase the ground exposure to light by clearing brush and cutting down some trees and 2) plant pasture grasses adapted to part shade conditions. This may sound simple, but it takes some time and patience to see the results. A lot of brush, branches, and fallen trees can be cleared by simply picking them up. If you don't have an immediate need for firewood you can just make a pile that can serve as a windbreak, as in Figure 2, for the animals you will eventually have in your silvopasture.

**Figure 2: Windbreak in a silvopasture.****Figure 3: Boer goat clearing ground for silvopasture.**

A couple of goats can make a lot of progress on clearing out berry brambles, brush, and woodland plants, as in Figure 3. Small movable electric fencing or ropes can keep them in a spot until they've cleared out the competing plants.

Once you clear the smaller material you'll have some larger fallen trees that will need to be cut up or moved with a tractor, as in Figure 4. Some areas will be so overgrown that a Bush-Hog or other rotary mower will be needed to cut down the thick bushes. Once you clear the areas they should have plenty of light reaching the ground. If needed, some of the trees should be cut so that only about 30-40% of the ground is shaded. Grass growth is not as vigorous in areas with higher amounts of shade.

**Figure 4: Large trees that have fallen in a silvopasture.**

The key to successfully planting a silvopasture once you have enough light reaching the ground is to have adequate seed-to-soil contact. Simply broadcasting a bunch of seed on the ground doesn't work. You need to have animals walk over the seed afterwards to "hoof" it in, use a small no-till drill, or get a rake and plant it by hand.

The ground in my silvopasture is a very light, sandy soil with many tree roots at the soil surface so tillage is impossible without destroying the trees, and a no-till drill is not practical on these small, hilly woodlots.

While goats have done some of the work, the majority has been planted by using a rake to pull back the top layer of mulch, broadcasting a lot of grass and clover seed by hand, raking the top layer of mulch back over the seed, and then using a small tractor to pack the seed in. The results have been great in test strips and larger areas. Orchardgrass, improved tall fescue varieties, and perennial ryegrass have all performed well in this project. They tend to be more shade tolerant than other types of grass.

For those of you that want to establish large-scale silvopastures, it will probably be a lot easier to start with a field, convert it to a pasture or hay field, and then plant trees into it. Soil testing and fertilization for pastures should be your starting point for modifying the pH and increasing the silvopasture's yield potential.

Bill Verbeten is a regional Extension agronomist with the NWN Dairy, Livestock, & Field crops team. He can be reached at wdv6@cornell.edu or 585-313-4457.

**Figure 5: Woods ready for silvopasture planting.****Figure 6: Grass growth is less in shaded areas (right) than sunny areas (left) in a silvopasture.**

Photos by Bill Verbeten

While the farmer holds the title to the land, actually it belongs to all the people because civilization itself rests upon the soil.

- Thomas Jefferson

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Planting Nut Trees on Your Farm

by Jerry Henkin

If you want to plant nut trees, it's important to research your land and the type of nut trees you want. Check the soil for the correct pH for the trees you want to plant. There should be good drainage, sunshine, and air flow. Will you want tall trees, which need to be placed far apart, or are smaller nut trees preferable on your property? Do the kinds of trees you want do well in your area? How much time will you have for caring for the trees? How much money are you willing to spend? Who can you go to for advice? Are you planting black walnut trees for food, or lumber, or shade for your farm animals in a silvopastoral setting? This will determine the spacing of your trees.

Whatever you decide, start with a few trees rather than planting many acres of trees. You can expand little by little as you gain experience and as the trees prove themselves on your property. From early on, I learned the truth in the adage, "The best fertilizer for your crops is the farmer's shadow." You do have to be there for the trees and you do have to be committed to their best care. Procrastination makes small problems into difficult ones.

It is important from the beginning of your planting to protect the trees. Sturdy posts and fences are a must; otherwise the deer and small mammals will destroy the tree that you've spent so much care to plant. I use four 7' fence posts and 6' plastic deer fencing to protect against deer. To protect against small mammals, which gnaw at and girdle the trunk at ground level, enclose the young tree in either a tree shelter or a small wire cage buried partially in the soil. If you can afford it, a tall fence around the perimeter of the orchard will keep deer completely out of the orchard. Time and deer rutting will weaken posts. Check on the integrity of the fences from time to time.

The presence of predatory birds, like owls and hawks in the surrounding woods can assist you by removing rabbits, squirrels, voles, etc. Leave a few old and dead trees around the orchard to encourage these birds to perch as a lookout



The difference in size between selected Hickory Nuts (above) and wild (below) can be substantial.

Photo by Ken Mudge

point. Be careful not to strip the bark of young trees with string mowers or other equipment. Placing a layer of mulch around the tree's dripline is one way to protect it from mowing equipment. For the first three years, especially, young nut trees will need to be irrigated.

Consider bringing guard dogs trained to remain in a specific area in your orchard by an electrical fence buried under the borders of your property. (For an article on this topic, see <http://agebb.missouri.edu/agforest/archives/v13n2/gh3.htm>) These dogs will prevent, or at least deter, deer and other mammals from entering the orchard. One orchardist who uses guard dogs suggests Great Pyrenees, but there are other suitable breeds for this purpose. They will also warn people to keep away from trespassing on your property. In an unusual scenario, but one that has occurred, they will warn of poachers who enter your property to steal entire mature trees for lumber.

If the trees are growing well, there may be no need to fertilize, as over fertilization can do more harm than good. Avoid rapid nitrogen-stimulated growth rates at the end of summer. This can lead to tree damage from wind, ice

storms, or frost. High-nitrogen synthetic fertilizers can compromise the tree's natural ability to produce defensive compounds; this would render the trees more susceptible to pests and disease. To be thorough, a soil analysis and a leaf analysis can help guide you in proper fertilization and adding amendments to your soil. Most land grant universities offer these services; an extension agent can advise you whom to contact in your area. It is important to know when to fertilize, as well as what kind of fertilizer and the proper amount. Fertilizers can be applied to the soil or through the leaves in a foliar spray. If you need advice, it is best to consult with a professional arborist about fertilizer, herbicide, and pesticide application.

Remove vines from the trees and the cages. If this is not done, the vines will quickly outgrow the trees, cutting off shade and preventing air flow. Bittersweet and other encircling vines will girdle the tree. Remove all vines from their roots and discard them far away from your trees. Mulching with wood chips prevents weeds and grass from taking over. It regulates soil temperature. In addition, mulching with wood chips encourages a fungal environment in the subsoil which is desirable for tree growth. (Mulching with cut

grass, which yields a bacterial environment, is best for annuals.) Do not place mulch up against the trunk of the tree, as this allows small mammals to hide from predators while they gnaw at the bark.

John Gordon, in his book *Nut Growing Ontario Style*, says that tree spacing is based on available light. To be fruitful and healthy, a tree must be in full sun from 10 a.m. through 2 p.m. The ground in the orchard should be shaded by 50% of the tree canopies at noon. The tree should be as high as the rows are apart.

When it becomes necessary to thin the amount of trees in the orchard, deaden and remove the stumps. Herbicides are available to aid in stump removal. This minimizes the competition for soil moisture and nutrients when the stumps begin to sprout. It also clears the orchard floor to allow harvesting equipment, mowers, and hay balers to pass between the trees and the rows with greater safety for the operator.

For safety's sake, work with another person, and let others know where you are. Use goggles, a hard hat, boots, and gloves. Make sure your pruning tools are in good condition and sharp. To protect against mosquitos, spray with Deet; to protect against deer ticks, tuck your pants into your socks. If you are using ladders, make sure they are in good working order. Shut your cell phone and avoid distractions when you are working.

Work with neighbors, community gardeners, and youth groups to start and maintain a nut tree nursery. In this way, replacement trees will be available when trees in the orchard need to be replaced, or if there is room to add more trees. Don't be afraid to ask for help when you need it. Give young people a challenge; acknowledge and reward them

for their work, even if they fail. Help them to learn from their mistakes. You will be encouraging a spirit of cooperation and inspiring future nut tree farmers.

Jerry Henkin, Vice President, New York Nut Growers Association (www.nynga.org), and Librarian, Northern Nut Growers Association (www.nutgrowing.org)

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FOREST AND WOODLOT**Financial Implications of Selling Timber*****The Right vs. the Wrong Way***

by Peter Smallidge

Timber in farm woodlots and rural woodlands may offer economic opportunities for the landowner. In addition to best management practices that protect the health and productivity of your woods, there are also financial considerations for the owner's attention. Selling timber includes special tax considerations, but at a more basic level is harvesting as an appropriate action for your forest. The amount paid for some species varies from year to year and you should talk with your forester to know the best timing for value and the objectives you have for your forest. If selling timber is the appropriate action for your forest, there are some tax issues you should consider before jumping into the market.

Two general points warrant mention concerning tax issues. First, timber taxes are a special case of federal tax law. As such, tax considerations are usually complex and you should discuss the details of your personal situation with your tax preparer and forester. Second, any time you receive money for timber or logs, you are required by federal and state law to report that income. Timber buyers or the sawmill will provide 1099 forms to forest owners. Form 1099 is used to report income other than wages. The IRS is increasingly sensitive to the number of people who receive timber income but don't report that income.

Your goal, of course, is to maximize your return while fulfilling your obligation to pay taxes on the sale of timber. When you sell timber, your revenue will either be taxed as Ordinary Income or Capital Gains. The tax rate for ordinary income is higher than capital gains tax rates. Further, revenue that you report as ordinary income may trigger your obligation to pay a self-employment tax up to 15.3% and possibly worker's compensation. Your tax advisor can help you determine these payments. The landowner's best tax advantage usually is through the provisions of capital gains. To qualify for long-term capital gains, the timber must be held for per-

sonal use or as an investment and the forest owner must have owned the trees for at least 366 days. Qualification for capital gains also depends on how the timber is sold or disposed.

The federal tax code relating to selling timber, interpreted through the Department of the Treasury and enforced by the IRS, recognizes three strategies for generating revenue from trees on private forest land known as "disposal of timber." Note that "timber" is defined as trees that are still attached to the stump or Christmas trees more than 6 years old when cut. The method of disposal partially determines your tax obligation. The three strategies to dispose of timber are: (1) outright sale of timber; (2) pay as cut; and (3) election to treat cutting as sale. Although not a disposal of "timber", another option is to sell on a percentage basis. Lengthy legal definitions for these are available, but the layman's definitions follow:

- **Outright Sale** - Forest owners often call an outright sale a "lump sum" sale, where the buyer pays the owner a fixed, total amount before any cutting occurs. Thus, the trees designated for sale in the contract belong to the buyer when they are cut. The money paid is fixed and no adjustment is made between buyer and seller if the trees change in value or timber markets change. This option provides both tax and logistical advantages to forest owners.

- **Pay-as-cut** disposal of timber is characterized by the buyer and seller agreeing on the unit price for the timber (e.g., \$/thousand board feet, MBF, usually by species) before any cutting occurs. The unit price and scaling method are part of the contract that grants the buyer the rights to cut the trees that are designated in the contract. The owner retains economic interest in the trees until they are cut and become the buyer's property. The contract should be a written contract that assigns a unit value to the timber, retains economic interest with the owner, transfers ownership of the tree once cut to the buyer, and defines the method



In most circumstances, farmers and woodlot owners will have their best experience with timber harvesting if they work with a carefully selected forester and logger.

used to scale the logs and determine volume. Owners can be prepaid for the timber, with adjustments made after cutting based on the scale of logs after cutting. This type of transaction is defined under Section 631(b) of the tax code and will qualify for capital gains.

- An "*election to treat cutting as a sale*" is the sale of cut logs rather than the sale of standing trees. This is often used by the forest industry with integrated operations that include their ownership of forest land and a mill. Most forest owners wouldn't consider this strategy of disposal unless they were selling logs roadside. As such, if the trees were cut and sold by the owner either roadside or delivered to the mill, it is ordinary income unless a Section 631(a) election is made to designate part of the gains as capital gains. For an owner to use a 631(a) transaction requires adherence to the numerous and rather onerous provisions of that section of the tax code. There are several reasons (see below) why most forest owners will not benefit from this type of activity.

- **Percentage Sale** - Forest owners might agree to a logging activity where they are paid as a percentage of the sale value. This option, typically a poor choice, is characterized by the transport of logs to a mill where the value of the logs is determined after they are cut and by personnel at the mill. Sometimes the owner and logger have a contract providing the buyer a right to cut. This is not a disposal of timber but rather a sale of logs. Revenue is treated and taxed as ordinary income without the option for the more favorable capital gains treatment.

The method of disposal of the timber has significant bearing on your tax obligation. If you qualify for capital gains, you may save 5% to 20% on revenue taxes over landowners who treat revenue from timber sales as ordinary income. Retired forest owners benefit from capital gains provisions because this revenue does not count towards the amount of income they can earn before their

Social Security benefits are reduced. Trees sold on a percentage method are taxed at ordinary income rates and may also require payment of self-employment tax, owners may be held for worker's compensation insurance, and as noted above may reduce Social Security benefits. There are few if any motivations for most private forest owners to sell trees roadside or through the provisions of section 631(a) because of the loss of capital gains treatments or the complexity of the provisions.

In addition to the requirements of the 631(a) transactions, there are other reasons that most forest owners avoid selling logs roadside. Selling roadside is risky because if the market drops, the trees are already cut and will begin to degrade in quality. Selling roadside also assumes that you or the person working in the woods has the skill and equipment needed to operate safely and avoid damage to the residual trees.

A final thought. You can reduce your tax obligation if you have determined your "basis". Your basis is the value of the timber, relative to other assets, at the time you acquired it. Your timber basis is essentially the value of your inventory and is best determined as close to the time of taking title to the property as possible. Most land owners will need a forester or an accountant to assist in determining their basis allocations. At the time of a timber sale, determine the proportion of value of the timber when disposed relative to the total original value of timber basis and deduct that from the gross revenue of the sale. You can also reduce your tax obligation by deducting expenses associated with the sale that you paid to your forester, attorney, or surveyor. You are taxed on the gross proceeds minus the timber basis removed minus any sale costs. As a simple example (see your tax preparer for your specific situation): You received \$30,000 from your timber sale, your basis removed during the harvest was \$22,000 and fees for professional services totaled \$1,500 because your



Different types of logging equipment are available. Loggers with the right equipment for the terrain and conditions will be more efficient and better able to limit damage to the residual trees in the woods.

DAIRY AND FIELD CROPS**New York Dairy Farm Business Summary for 2014**

by Richard Kimmich

Each year, the Cornell Dairy Farm Business Summary and Analysis (DFBS) Program analyzes data from dairy farms across the state and provides the participating farmers with information to assist in improving the financial management of their business. This data is also summarized across the state and publications are generated for different aspects of the dairy industry. The DFBS system tracks all types of dairy herds and although there is not always a sufficient number of participating farms, in each farm type as was the case in 2013, limited information for Grazing, Organic and Rented farms is discussed in this article.

Renter Farms in the DFBS:

A renter farm for the DFBS is defined as a farm in which the land and facilities are rented. These farms primarily use stanchion facilities with a small number using freestall barns. Herds are 74% Holstein, followed by other breeds at 23% and Jersey at 3%. Milking frequencies vary by farm but 2x/day milking is the most common at 71% with the remainder using 3x/day. Average number of cows for the renter farms was 256 with a production of 23,843 lbs/cow, up from 19,466 lbs/cow in 2012.

Profitability and prices in 2013 was similar to 2012 for renters. Net farm income with appreciation was \$157,093 unchanged from 2012 with an average milk price of \$21.02 per cwt compared to \$20.02 in 2012. Purchased grains and concentrate as a percentage of milk sales dropped 2% to 36% with overall feed cost dropping \$12.29/cwt to \$9.73/cwt. Farm net worth also increased in 2013 rising to \$474,403 from \$335,094 in the prior year.

Grazing Farms in the DFBS:

A grazing farm for the DFBS is a farm that grazes at least three months a year, with forage from pasture at least 30% of the total ration and paddock rotation every three days. These farms are evenly split between stanchion and freestall at 41% with 18% combined. Herds are 62% Holstein, followed by Jersey and other breeds both at 19%. All of the grazing farms that took part in the survey in 2013 milked 2x/day. Average number of cows for the renter farms was 165 (156 in 2012) with a production of 15,929 lbs/cow, down from 17,804lbs/cow in 2012.

Grazing farms had a good year in 2013, seeing an increase of profits even with the dip in milk production. Net farm income with appreciation was \$170,078 up \$94,617 from

**Jersey Cows at a New York Dairy.**

2012 with an average milk price of \$22.26 compared to \$19.86 in 2012. Purchased grains and concentrate as a percentage of milk sales dropped 3% to 30% with overall feed cost dropping from \$7.73/cwt to \$7.27/cwt. Total cost of production also dropped in 2013 moving from \$23.54 to \$21.67.

Organic Farms in the DFBS:

Organic farms would be any farm that identifies itself as organic and has the proper certifications. These farms primarily use freestall facilities with a small number using a

Financial from page 14

forester and attorney charge by the hour. You only pay tax on \$6,500 of revenue, with the tax based on either capital gains rates (0%, 5%, or 15%) or on ordinary income rates (10% to 35%) that are higher than capital gains rates.

There are additional provisions of the federal tax code that provide significant financial benefit to private forest owners who are deliberate in the management of their woodlot with the intent of generating a profit. The details are numerous, but you will need a well crafted management plan and a good relationship with a knowledgeable forester and tax preparer. The USDA Handbook #718 is useful and is available at www.timbertax.org, a well-developed website support by the US Forest Service. The IRS' Form T-Timber can be helpful in various calculations and record keeping even if you are not required to file it. Form T can be found on the IRS site at www.irs.gov.

Peter Smallidge, NYS Extension Forester, Cornell University Cooperative Extension, Department of Natural Resources, 219 Fernow Hall, Ithaca, NY 14853. He can be contacted at 607-592-3640 or pjs23@cornell.edu.

combined barn (a combined barn is a barn utilizing both stanchion and freestall). Herds are 51% Holstein, followed by Jersey at 15% and other breeds at 34%. All of the farms surveyed were 2x/day milking, which is not uncommon due to grazing requirements. Average number of cows for the organic farms was 215 with a production of 15,069 lbs/cow, which was up from 13,722lbs/cow in 2012.

Organic farms saw a drop in net farm income without appreciation of \$16,271 moving to \$217,002 with an average milk price of \$35.09 compared to \$33.43 in 2012. Purchased grains and concentrate as a percentage of milk sales was constant at 16% but overall feed cost increased by \$1.61/cwt to \$9.38/cwt. Even with the drop in net farm income, farm net worth increased in 2013 rising to \$2,472,015 from \$1,866,487 in 2012.

The DFBS program has been in existence over 50 years. The author is an Extension Specialist in the Dyson School of Applied Economics and Management, College of Agriculture and Life Sciences at Cornell University.

The Dairy Farm Business Summary and Analysis Program is always looking for additional farms to take part in the program whether they be renters, grazing, organic or conventional of all sizes. If you are a farm that is interested in participating in the summary or would like more information on participating in the Dairy Farm Business Summary please contact your local Cornell Cooperative Extension agent or you can contact the DFBS program directly at dfbs@cornell.edu. You can find information about your local extension at www.cce.cornell.edu or send an inquire email to dfbs@cornell.edu or visit dfbs.aem.cornell.edu.



Selling logs "roadside" is seldom if ever in the best interest of farmers and woodlot owners. A stumpage sale, the sale of standing timber that is marked by a forester, is usually better for the owner.

For more information about woodlot management, visit the publications, webinar, and Ask Questions links at www.ForestConnect.info



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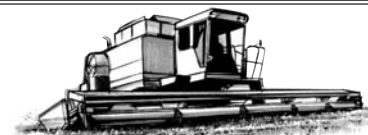
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FARM TECH

Farming with an Old Technology that Copies Nature's Basic Formula

by Edward DuQuette

Introduction

I've written and taught on the subject of farming and alternative growing techniques for quite a few years now. Aquaponics has always been my favorite subject to elaborate on. Aquaponics, and its close cousin Hydroponics, both have endured a wave of criticism and praise. But when it's all said and done, both technologies have proven themselves over and over again as successful means of growing larger and more desirable fruit and vegetable products. So who's the new guy in town, what's the newest growing technique? Well first of all it's not new; the developed process has been around for over 50 years and the bases of this process have been around since the first plant popped its way through the soil. When I first heard of it about two years ago, it sounded too simple to be true.

Making it Easy

As an engineer, I love to unravel technology to understand it. As a teacher, I love to take what I've learned and teach it to others, and as a writer, I love to present it in written text to excite experi-

mentation. In Japan around 1935, a hormone was found as a result of a plant condition that caused plants to grow much taller than normal. The condition was called "foolish seedling" disease, and after many years of research, this natural occurring plant hormone was identified as Gibberellic acid or GA3. The direct benefits of GA3 are that it helps regulate plant growth, rapid seed germination, and plant resistance to cold and disease in almost all vegetable, fruit and flowers. Where does Gibberellic acid come from? It's a natural product extracted from the *Gibberella fujikuroi* fungus that is found on rice plants. There are many forms of gibberellic acid with GA3 proven to be the most effective.

Let the Growing Begin

Gibberellic Acid is a white powder; it can be purchased in 2.0-5.0 grams packaging. Larger quantities are also available, but for initial experimentation the 2.0-5.0 gram packaging is the most economical. A little GA3 goes a long way and because of its involved manufacturing process it is not cheap. You will also need a new unused plant sprayer, isopropyl alcohol 70%, distilled water (or filtered water) and a source of music.

Dilute the GA3 powder; the GA3 powder is very hard to dissolve just by stirring in water alone. Proper dissolving can be easily done by adding very small amounts of alcohol to the GA3 being used until the powder is dissolved (this very small amount of alcohol will not hurt your plants). The dissolved powder can then be added to the distilled water to produce the proper PPM dilution. (See chart) Also recommended is the addition of a wetting agent; a few drops of agriculture soap can be used.

It is very important to remember proper PPM dilution rates for success. Too much GA3 or too little can affect your end results. The GA3 needs to be applied in early morning before sunrise if possible. Bright sunlight will effect GA3, making it less effective or destroying its effect completely. Only mix what you're going to use that day. The powder can



Tomatoes grow larger, taste better (sweeter), produce more per plant and much larger plants. This tomato was nearly 4 lbs., the plant also produced over 50 tomatoes around that size.

spoil in high heat and will only last about one week once mixed. Wrap the unused powder container in aluminum foil to protect from direct sunlight. If stored in a cool, dry place, the powder can store for up to 2 years. Do not freeze or refrigerate.

GA3 Powder 90% is soluble in 70% common rubbing alcohol. Before it can be used it must be turned into a liquid. The amount of Gibberellic acid that needs to be used is very small. Drop the correct amount of powder in a small bottle, then add a few drops of rubbing alcohol. The only reason to use alcohol is to dilute the Gibberellic acid powder. Use just enough alcohol to wet the gibberellic acid powder. If after a couple of minutes you can still see some powder, add a few more drops of alcohol. Then just add water to get the right concentration. It is often said that alcohol will damage plants, but not in the very low concentration needed to dissolve Gibberellic acid. 90% GA3 powder will not dissolve in water.

You don't need much of the solution to soak your seeds, just enough for the seeds to fully swell. Most seeds can be soaked in the small poly-bags. Tiny seeds should be folded up in a filter paper for ease of handling when soaking. Larger seeds can be soaked in a pill bottle or small jar.

To know the concentration, replace X and Y, (X mg / Yml) x 1000 = Z ppm

To know the amount of solution to make to get a certain ppm, replace X and Z, (X mg / Z ppm) x 1000 = Y ml

To know the quantity of powder to use, replace Z and Y, (Z ppm x Y ml) / 1000 = X mg

For example: 100mg of GA3 in 200ml of water gives you 200ml at 500 ppm (part per million). 100mg of GA3 in 400ml of water gives you 400ml at 250 ppm. 1g of GA3 at 90% concentration will be supplied as a powder in a small ziplock bag, sufficient quantity to make 2 liters of solution

at 500 ppm. You should have enough for a couple of years. Use strong solution, 500 ppm, on very hard to germinate seeds; and a 250 ppm on seeds that are just hard or slow to start. Seeds enclosed in a hard coat may be submit to a higher concentration, 750-1000 ppm. You can scarify the seeds at first. Soak seeds for at 24 hours and at most three days for the ones enclosed in a hard coat. Keep the seeds at room temperature with occasional careful shaking. The seeds may then be sown. Don't use it on easy to start seeds unless you dilute it greatly, like 25-100 ppm, and soak them only for 2-3 hours. Normal, easy-to-sprout seeds will become very elongated and stretched out, then die if GA3 is used on them. Concentrations of about 2 ppm can cause tubers to sprout earlier.

Gibberellic acid can also influence the timing of flowering, flower gender, flower size, and number of flowers. If a plant is sufficiently developed, premature flowering may be induced by direct application of GA3 to young plants. Formation of male flowers is generally promoted

by concentrations of 10 to 200 ppm, female flowers by concentrations of 200 to 300 ppm. You may have an increase in the number of flowers by direct application of GA3 to young plants, at 25 ppm.

When there is difficulty with fruit set because of incomplete pollination, GA3 may be effectively used to increase fruit set. The resulting fruit may be partially or entirely seedless. GA3 applied near the terminal bud of trees may increase the rate of growth by stimulating more or less constant growth during the season. Since GA3 regulates growth, applications of very low concentrations can have a profound effect while too much will have the opposite effect.

Although GA3 is not listed as a poison, the following precautions should be observed. Flush with water any GA3 that may get into the eye. Avoid skin contact if possible and wash away any contact with soap and water. Avoid ingestion of GA3.

Edward DuQuette teaches several classes on Aquaponics, organic farming, hydroponics, and solar and wind power as off the grid options at two- Utah Colleges and a Trade School Program. He freelance writes for several publications (his favorite is Cornell SFQ). He has a background in electronics engineering and mechanical design, with military and commercial applications. Ed is semi-retired and lives in Eagle Mountain, Utah. He can be reached at edudquetteut@gmail.com.

For additional information on GA3 check the web also if you like your results and want to extend your application consider buying a system for Sonic Bloom Company. Seaweed/ Kelp fertilize I used was Dr. Earth Seaweed Concentrate 16oz bottle.

Gibberellic Acid can also be purchased of the web. Be sure its 90% pure powder.

See more at: www.rarexoticseeds.com/en/gibberellic-acid-powder-ga3-90.html#sthash.Wg3FmhtK.dpuf

Excerpt: The New Livestock Farmer

by Rebecca Thistlethwaite & Jim Dunlop

The Better System: Pasture-Raised, Ethical Meats

What do we mean by the term “ethical” meats in the subtitle? In our minds, ethical meats come from producers who want their animals to live comfortable lives and to die as quickly and as humanely as possible. These animals get to exhibit their natural behaviors: as Virginia farmer Joel Salatin likes to call it, “the animal-ness of the animal.” Poultry get to take dust baths, scratch, and peck; waterfowl get access to water to play in; pigs get to root or make nests; cattle get to eat grass or lie in the shade to ruminate. If animals are kept in cages, a densely packed barn, or an outdoor feed yard knee-deep in muck and manure, they won’t be exhibiting their natural behaviors. They will be just barely coping and often going slightly crazy, leading to abnormal behaviors like chewing off each other’s tails or excessively pecking the backs of other birds.

Ethical meats come from animals that spend time outdoors and get to eat naturally growing vegetation that their digestive systems are used to handling. Goats get browse; pigs get roots, nuts, or legumes; sheep and cattle get pasture; poultry get some bugs, green growing vegetation, and seeds. We are not saying ethical meats have to be 100 percent grassfed or 100 percent organic, because every animal is different and every production system is different. What works in one region, such as year-round grazing, may not work for a region with a two-month-long active grazing season. However, to the extent possible, the farmer should match the animals to the landscape, not the other way around. Raising broiler chickens in winter, for example, does not work very well in most northern climates unless you have a fully temperature-controlled building. Broiler chickens raised outdoors won’t thrive in a cold winter and most likely will all die. But confining them to a barn starts to look more and more like a CAFO as one scales up.

Do ethical meats come from animals fed grain that has been conventionally grown with petroleum-based fertilizers, neonicotinoid pesticides, or glyphosate herbicides? If the system depends on feed grains that are grown using genetic engineering technology or cancerous chemicals, then the system is broken. It is just shifting the negative impacts onto the grain production in order to prop up

cheaper meat production. Can ruminant animals be fed some grain and still be “ethical”? We think so. We don’t love the feedlot model, but feeding some grain during the last sixty to ninety days of finishing, in addition to providing plenty of forage and healthy living conditions, seems like a pragmatic compromise. Depending on your pasture production, rainfall amounts, and other conditions, some grain feeding might make sense for you.

We are not going to create a complex definition of what constitutes ethical meats, but would rather like you to ask yourself some tough questions. Good agriculture and good business involve continuous improvement. You may start at one point on this continuum and be able to achieve a more holistic system of production after you gain experience and begin to earn the revenues necessary for improvement. Most importantly, if you are going to market ethical meats, educate your customers about your practices and why you have chosen to raise the animals in the way that you do. Don’t lie about it and don’t hide it. More educated consumers will make the whole food system work better.

Questions to Ask Yourself on Your Path to Producing Ethical Meats

Animal Welfare

- Are my animals able to express their natural instincts?
- Are my animals comfortable during weather extremes?
- Do my animals have reasonable protection from predators while still getting to live outdoors?
- Do my breeding animals have safe places to give birth and provide milk to their offspring?
- Do I give my animals sufficient time to get to market size or must I resort to other methods such as growth hormones or overfeeding or restricting movement to get them to size?
- Do I have a low stress way to corral, sort, and transport my animals to slaughter?
- Have I visited the slaughterhouse and verified how they pen, handle, and kill the animals?



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Animal Health

- If I don’t have a closed herd or do all my own breeding, are the animals I’m bringing onto my farm healthy and were they treated in a humane way before they got to my farm (chicks, weaner pigs, stockers, lambs, breeding stock, etc.)?
- Does my animal management system keep animals safe from each other or is there a lot of fighting?
- Do I check on my animals frequently? Can I get close to my animals?
- Do I have a good system in place to prevent illness and disease in my animals?
- Do I have a way to segregate or capture an animal if it appears sick or injured?
- Do I have a way to treat or medicate sick animals?
- Do my animals have access to the outdoors whenever they feel like it?
- Do I keep my animals from lying in or living on top of their own dung?

Land Management

- Are my pastures and paddocks protected from degradation during weather extremes?
- Does my animal management system lead to soil erosion, water pollution, or air pollution?
- Does my animal management system degrade wildlife habitat or enhance it?
- Do I utilize a variety of preventative practices to deter predation or just resort to lethal control of predators, such as bobcats and coyotes?
- Do I rotate and rest my pastures?
- Do I manage my manure so that it is a valuable resource or is it more like a waste product that can cause pollution?

Feeds and Feeding

- If I buy growing stock, have those animals been fed medicated feeds, given antibiotics, or given hormones prior to arriving on my farm? Do I have any control over that?
- Do my ruminants have continuous access to pasture or forage whenever they feel like it?
- Do my feed grains come from places recently deforested to grow grains?
- Do my feed grains come from genetically engineered seed?
- Does the production of my feed grains require significant fertilizer or pesticide use?
- Were my feeds trucked in from a very long distance (over 500 miles, for example)?
- Do I make an effort to grow my own feeds and forages to the extent possible?
- Do I utilize other locally produced nutritious feedstuffs (not post-consumer garbage) to support my animals?
- Do I prevent my animals from eating animal products of the same species?

Community

- Are my employees subjected to toxic fumes, frequent pathogen exposure, unsafe working conditions, and stressful animal handling conditions?
- Is my surrounding community subject to toxic fumes, manure runoff, excessively loud noises, or other unsafe conditions because of my operation?
- Am I producing safe, healthy, high-quality meats for consumers?
- Do I give back to the community in any other ways?

We could ask you a bunch more questions, but this will do for now. This is not a scorecard: If you answer yes or no to some of the questions, that does not mean you can’t consider yourself an ethical producer. Just figure out the best way for you to raise animals in a way that is humane, environmentally and socially responsible, makes you money, and produces a high-quality end product that you can be proud of. This book will help you to do just that. Don’t shift the costs of your animal production onto other places or other people. To the extent possible, take responsibility for your full operation and strive for continuous improvement.

This excerpt is adapted from Rebecca Thistlethwaite and Jim Dunlop’s The New Livestock Farmer (June 2015) and is printed with permission from Chelsea Green Publishing.



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Small Farm in the Big City

Closing the bad-food gap in urban communities

by Regina A. Bernard-Carreno, PhD

My grandfather was an “urban farmer,” in the city of Georgetown, Guyana. He farmed to eat, to feed others, and to supplement his income as a worker in the Guyanese sugar estates. He grew things out of necessity and scarcity. Whether he found pleasure in its tremendous labor remains cryptic, but we know he enjoyed preparing meals from his garden for his grandchildren. The popular marketing tool and frenzy that is today’s “organic” would probably have tickled him; because for him and his generation, there was no other way to grow food if you had the space and ability. He would have been completely saddened by the fact that “organic” has become inaccessible among the poor and has instead, become a term that is generally applied to “upmarket” folks. It would have been extremely disheartening to him that the movement towards good food still has racial, socioeconomic and class-based camps, just as it had during early colonialism. He would have been stunned that people of color have become disconnected to their food histories, and in some places, have landed in the largest group of unhealthy eaters.

Decision-makers have often sparred with the idea that low-income communities who do not have access to options only need basic fruits and vegetables, regardless of how much spray, wax and mold it might have seen on its way to their supermarket. The attitude is “at least they have something.” The reality that “quality produce” is both accessible and intellectually affordable to everyone is simply untrue. For communities of color whose ancestral history has much to do with growing food (now a foreign object) access to “something” is simply not sufficient. Many small, local, farmers know this dilemma well, and their distribution to theseailing communities is a work of community activism.

Shoppers at farmer’s markets in affluent neighborhoods appear so focused on the experience. By nature of human behavior, people dig around for the “best looking” item, pick and pull at the produce, and if perplexed they could literally engage the grower of said item, in a conversation. My neighbors had no one to ask questions of, and if you did find someone, chances are, they only manipulate money and have no clue about anything grown, offered, or for sale at their shop, stand or otherwise. I began to wonder how it would be possible to bring an option of healthcare into the community instead of us supporting other communities in their approach to better health with no equal benefit. How could a simple bunch of beets and their tops connect us to a larger discussion about our quality of life? Answer: by bringing the farmer who grew the beets right into the middle of the conversation. The problem with this “simple” idea however, is that the fight for food access in communities like ours, and so many other similar places, sits so incredibly low on the totem pole of structural inequality.

When our almost 2-acre green-space in Elmhurst Queens was taken from our grasp by the city, before firm growing plans, I incessantly worried that a good food choice would never be ours. Considering that many other neighborhoods had a similar food-



Zaid Kurdieh & Regina A. Bernard-Carreno, PhD at Union Square Farmer's Market

choice access, and began CSAs as successful solutions, I began one too. The setback with this option is that most of the model CSAs easily recruit affluent community members who don’t need much convincing that weekly visits from a farmer are better than daily visits from the ice cream truck. With an overpopulated community like Corona, Queens suffering from the blight of low-wage jobs, high unemployment, immigration issues, and other financial woes, \$500-\$600 in advance for groceries unseen for 6-months is still an abstract and oftentimes ridiculous idea to many. If you’re a meat-eater, that single produce bill outright also seems like a joke. Most farmers we contacted didn’t want to take a risk of having a small farm share with an extremely small number of members. Most of them assured us that it would cost them more to come to our neighborhood than we would benefit.

When we were introduced to farmer Zaid

Kurdieh of Norwich Meadows Farms, I had no firm understanding of how a CSA would work in our neighborhood. Logistics with trucking, pricing, weather, and crop status felt completely foreign in such a neighborhood.

In our first season, not a single member had enough money to buy an entire share (22 weeks and beginning in June with payment due the previous January). Families inquired about payment plans, weekly options, lay-away and other kinds of creative payment methods. Fundraising with my students throughout the semester, provided enough money to purchase a couple of additional shares for weekly re-sales. Zaid gave us pricing options, and ideas for offering the shares to people in installments. He also invited us to participate in his “weekly specials” primarily for sale to restaurants. While many members could not afford even a weekly share, we began taking special orders for items that the local supermarket



A weekly share from our CSA

would never dream of offering. They were our biggest competition, as they seemed “cheaper” and offered familiar products.

Our small membership couldn’t warrant delivery, and no site would host our distribution. Zaid introduced us to other CSAs who had similar issues during their initial run. No big farm would have tolerated our unorganized but motivated structure-solely in the name of bringing good food to the people. Precisely because of the nature of his small-local farm model, Zaid understood that people would want to join at all intervals of the season, so together we created a “Fall Share,” a cheaper option than the full season, with sampling through the summer. My husband and I decided that we would take on deliveries to save money, and the labor of a single student. Every week, we drove to Manhattan from Queens and piled up our Honda with vegetables, fruit and eggs, so we could distribute from my mother’s backyard. This process allowed weekly, detailed conversations with Zaid, his wife, and his farmworkers.

Every week, Zaid taught me about a new vegetable, like kohlrabi which no one in the entire block could identify. We were eating things that reminded my mother of her childhood in Guyana like wax-free Kirby cucumbers. At the excitement of seeing peppers at his stand, I shared with Zaid that people were building a relationship with him through the food he was growing. Without negatively gentrifying, we were certainly changing the conversation about food in the community. Each week, I felt inspired to continue building a small movement with neighbors but also reawakening the excitement of cooking in our own kitchens, and sharing recipe ideas. While finding comfort in the products we knew, there was excitement around discovering new products and learning how to enjoy them.

The first time quince was revealed in my weekly bag, I immediately sent Zaid a message and asked him what it was. It is this moment that I try and share with the larger public, in an effort to really make people understand why this kind of bond is vital. Although many of us are still dependent on our large supermarkets for even the most basic of groceries, we can now text, email or call the person who grew our vegetables and our fruit. My children are proud to tell their classmates that they have a farmer-friend that named “Uncle Zaid.” Our farmer-friend grows our vegetables and fruits, gives our chickens a fair life, shares our pedagogical philosophy, gives me raw honey to treat my preschooler son’s reactive airway, and whose wife sends extra tomatoes for my mother. What supermarket is going to do that?

Being in a relationship with a small farmer provides vocabulary for critical questions of the big food-suppliers in our neighborhood. As eaters, thinkers, parents, customers, and members of the community, we began to consider our weight in the fight for to quality food.

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Penn State's "Agricultural Alternatives" series:

Helping farmers evaluate alternatives and plan for success.

by Lynn F. Kime

To meet the educational needs of small-scale and part-time farmers, Penn State's College of Agricultural Sciences, with support from the USDA-Extension Service, the USDA-Risk Management Agency, and the Pennsylvania Department of Agriculture, has developed a set of 64 publications called "Agricultural Alternatives". Most of the publications introduce various alternative enterprises, while others discuss important farm management and marketing topics. The enterprise publications help producers evaluate alternatives by providing unbiased information on marketing, production requirements, cost of production, and resource needs. Each four to twelve page publication also has a list of references, trade and marketing association information, and mailing and web site addresses where more information can be obtained.

Current farmers use these publications to decide what crops or livestock may increase their profitability. Farmers are always seeking information about diversification to hopefully increase their bottom line. Many potential farmers have some land to devote to agricultural production but do not know if their land will support their ideas for production. Many times the soil structure and topography will determine the type of enterprise they may engage in. Farmers have decided on a livestock enterprise because they have discovered by reading the publication the topography of their land is not suitable to vegetable production. While potential farmers should always choose an enterprise based on their personal interests, the publications have been used by countless people worldwide to help them make their enterprise decisions. They need to decide if the enterprise they are considering fits their potential lifestyle change.

The marketing section of the publications provides marketing options the reader may consider. Several marketing opportunities are provided for each enterprise. Potential farmers usually consider production as the most important part of an enterprise. However, the marketing stream may be the difference between losing money and profitability. By considering the marketing options outlined, they can make their marketing decision based on their passion and profitability. The interactive budgets provided assist with the profitability decision. These budgets require the user to input their income and expenses to create the final budget and the profitability or loss is calculated for the user. The reader must conduct some research to determine their costs and consider the level of production. Many times these farmers talk to local existing farmers to help with this research and this interaction with existing producers may also provide a potential mentor for the start-up farmer by developing the relationship with an existing producer.

The risk management section of the publications is used to inform the farmer what risk management strategies they should use to mitigate their risks in a risky environment. All farms face some level of risk through production and marketing. This section outlines these risks and potential tools available.

Videos of producer interviews are available on-line for some of the publications. They allow the user to hear directly from a producer of the enterprise about the advantages of the enterprise and what pitfalls a new producer may encounter. They also explain their marketing practices and outline some alternative marketing outlets may be available.

Publications covering production of a crop or livestock include links within the web page to interactive pdf format budgets that



Small Farm

may be used to create budgets for each enterprise. There is an instructional page first followed by the budget itself. Additional budgets covering agronomic and tree fruit crops can be found at <http://extension.psu.edu/business/farm/management/financial-management>. These budgets are also in the pdf format.

Over the past three years the project has issued several new and revised "Agricultural Alternatives" publications. They include farm management publications titled Budgeting for Agricultural Decision Making, Community Supported Agriculture, Developing a Business Plan, Managing Machinery and Equipment, Owning and Leasing Agricultural Real Estate, and Understanding Your Federal Farm Income Taxes. New and recently revised enterprise publications include Organic Vegetable Production, Beef Backgrounding Production, Beef Cow-calf Production, Beekeeping, Broccoli Production, Christmas Tree Production, Cut Flower Production, Drip Irrigation for Vegetable Production, Feeding Beef Cattle, Garlic Production, Highbush Blueberry Production, Potato Production, Pumpkin Production, Red Raspberry Production, and Small-scale Egg Production (Organic and Conventional). Some "Agricultural Alternatives" publications currently being developed or revised include enterprise leaflets on swine production, white-tailed deer production, and high tunnel production. The publication Owning and Leasing Agricultural Real Estate is used by both potential farmers and land owners alike to determine lease structure and rental rates. For the farmer seeking to purchase land, this publication informs the reader of the purchase process and what to look for when seeking agricultural real estate.

Over the years, the project has also developed enterprise leaflets on accelerated lambing, asparagus, peppers, bison, bobwhite quail, cantaloupes, cucumbers, dairy

beef, dairy goats, dairy heifers, earthworms, elk, meat goats, milking sheep, partridges, pheasants, rabbits, red deer, snap beans, spring lambs, strawberries, sweet corn, and tomatoes. There are also publications available on fruit and vegetable marketing and irrigation for fruit and vegetable production. The publication series has also expanded to include forestry offerings including Christmas Tree Production, Managing Small Woodlots, and Maple Syrup Production. All "Agricultural Alternatives" publications can be downloaded in Adobe Acrobat (pdf) format or viewed in a web page format on-line at <http://extension.psu.edu/business/ag-alternatives>.

The series now also includes publications translated into Spanish. These titles (in English) include; Agricultural Business Insurance, Budgeting for Agricultural Decision Making, Broccoli Production, Developing a Business Plan, Fruit and Vegetable Marketing for Small-scale and Part-time Growers, Meat Goat Production, Pepper Production, Potato Production, Small-scale Egg Production (Organic and Conventional), Tomato Production, and Understanding Agricultural Liability. All portions of the publications are in Spanish, including any interactive budgets linked to the web page.

The Agricultural Alternatives Project is managed by Lynn F. Kime (senior extension associate in Agricultural Economics) and coordinated by Jayson K. Harper (professor of agricultural economics). If you have any questions about the Agricultural Alternatives Project, Lynn can be reached via e-mail at lfk4@psu.edu or telephone at 717-677-6116, ext. 227.

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Organic Vegetables

GRAZING**For Rent: Cheap Grazing Land?**

With over 3 million idle acres in New York, maybe there's some out there for you.

by Nancy Glazier

Undeveloped rural land in New York is generally classified into three categories: active agricultural, forest, or idle. Over 3 million acres of vacant land lay idle, waiting for an opportunity. Not all of this land should grow corn! Maybe leasing it for livestock grazing is the better fit. Here are some considerations:

Access: Whose is it? The first step is to find out who owns the land. Start with asking neighbors. Explain what you would like to do: graze livestock, not build a house. If that leads to a dead end, check the tax maps with the local town clerk. Many counties have the tax maps online through the county's Real Property website. Google Earth Pro can be downloaded for free and has tax parcel data for many rural locations. Once you find out who the property owner is, take them a pound of your ground beef or a dozen eggs to break the ice. What may sweeten the deal is explaining the benefits of agricultural land assessment and what that would mean to their property taxes.

Get it all in writing. Time and effort is involved in setting up a grazing system. Make sure you spell out who installs the fence, where electricity comes from, and the water source, to name a few points. If you install items and the lease ends, make sure you identify who gets the hardware. Spell out what happens if the landowner dies during the duration of the lease. You probably want a lease for at least 3-5 years.

Fence. Fencing serves two purposes: to keep livestock in and keep predators out. This is no place to skimp since these animals are not in your backyard. You don't want a call in the middle of the night that your livestock are out. The least expensive way is to have the landowner pay for installation. That way the fence stays where it is if the lease is terminated. Another option would be for the cost share for fencing. Make sure you plan where the power is coming from; from a meter on the pole or the landowner. Solar is an option, too. Another option is to install it yourself. Use good quality fence posts and pay particular attention when installing corners, ends and gates. If you don't have the time or expertise, hire someone to do it. Portable electric fencing is an excellent option for shorter term leases, as the farmer can take it with them when they leave.

Forage quality. This may need some work. My first recommendation would be to test the soil, but it may be easier to take a sample after the pasture is bush hogged. Lime as needed, but don't try to apply more than 2 tons/acre if you are not plowing it down. Remember the benefit of this whole system is to keep costs down. Give the pasture 2 or 3 years before you decide to renovate. If fertility is really low, you may need to fertilize at recommended rates.

Livestock are a great way to improve pastures as well. New, lush growth provides a salad bar. They will eat what they like and leave the rest. You may need to clip or mow pastures to eliminate some weeds, such as goldenrod. The best time to mow for weed control, specifically goldenrod, is full bloom. When weeds are controlled, sunlight will reach the ground and some of the grass seeds in the seed bank will germinate, if sufficient moisture is there. Tap into them and give them a chance before you decide to reseed. And remember, it may take a few years to reach your optimum carrying capacity.

Rotation is essential for pasture improvement. The shorter the residency period, the better for forage production. When livestock graze for more than a day, they will go back and graze the nice, soft regrowth. Ideally, cattle should be moved every 3 days, but that's not always practical. Move them to a new paddock as often as possible, to fit your schedule.

Frostseeding or overseeding may need to be done to improve the pastures. The goal is to get good seed to soil contact. Frostseeding is best done around March when there is a freeze-thaw cycle. That works the seed down into the soil. Overseeding works if the seed reaches the soil and is somehow scratched in and sufficient moisture is present; better to attempt in spring or early fall.

Water. Water is the cheapest nutrient. Your animals will need a sufficient supply of clean water. Is there a pond or spring that could be developed? Livestock can drink from a pond or creek with limited access. Will the neighbors let you run a hose? Maybe a water wagon is the best option for the location. You may need a portable tub that moves with the livestock.

Livestock handling. You will eventually need to catch those critters after a time on pasture, whether it's to move or sell the livestock or to treat a sick one. Cattle need to be adjusted and not frightened by it. One grazer brings his cattle through his corral every time he moves them. That may be more than necessary, but think about that. It could be a portable or temporary facility.

There are many graziers that have implemented this system. You may want to start small and learn from the experience!

Nancy Glazier is Small Farms Specialist for the NWNY Dairy, Livestock & Field Crops Team, Cornell Cooperative Extension. She can be reached at her office in Penn Yan at 315-536-5123 or email nig3@cornell.edu.



With a little time this idle land could be brought into a profitable pasture. Photo by Nancy Glazier



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