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An Indigenous Corn Makes a Comeback

In New York, the Iroquois White Corn Project is reviving an ancient and sacred variety of white corn in hopes of improving Native nutrition and health.

by Lisa Waterman Gray

Inside an antique farmhouse at the Ganondagan Historic Site just east of Rochester, New York, a stainless steel coffee roaster hums as it parches Iroquois White Corn with heat, increasing its digestibility. Once the process is complete, after about 20 minutes, Iroquois Corn Project volunteers and staff use a stone grinder to create corn flour they then sell to the public.

This is the home of the Iroquois White Corn Project, whose mission is to preserve and promote an indigenous strain of corn that has been prized by local Iroquois for 1,000 years. With three products—Iroquois hulled corn, corn flour, and roasted corn flour—the project operates out of the nonprofit at Ganondagan, where the Seneca, a community of Iroquois-speaking peoples, thrived more than 350 years ago.

“The mission of the Iroquois White Corn Project is to encourage Haudenosaunee [Iroquois] farmers to grow the corn and to eat it for more than just special occasions or ceremonial use—[making it] something they eat every day,” said Jeanette Miller, program director for Friends of Ganondagan and a member of the Mohawk tribe of the Iroquois Confederacy. Once hulled, the indigenous corn can be used in soups, stews, salads, and more, and the flour can be used to make bread, mush, cornbread, cookies, cakes, and other baked goods.

“We started playing with the corn and trying different recipes... and everyone started to really enjoy it,” Miller said. “We encourage people to grow their own gardens and get Iroquois White Corn back on their tables for their families.”

Founded in its current location in 2011 by Peter Jemison, Ganondagan Historic Site manager and a member of the Heron Clan of the Seneca Nation of Indians, the Iroquois White Corn Project currently yields an average of 5,000 pounds per year, and they expect to grow that number considerably in the coming years. Project managers sell the corn to grocery stores, farmers’ markets, and individuals, and they hope to one day break into the market of chefs who focus on using indigenous ingredients.

Across the country, a number of individuals and groups, from Louisiana to Nebraska and New England to Arizona, are also working to propagate native corn in hopes of preserving history and tradition and taking advantage of the plants’ nutritional value.

“There are [many Native] people raising, picking, and storing corn, and they’re also eating it,” Jemison said. “We were supplying the Seneca Nation with white corn [but] after our talks and demonstrations, they now are setting up their own project and will be processing their own corn,” he said. “This was our goal.”

Nutritionsally, the corn variety is gluten free; low in sugar; high in fiber, protein, and low-releasing carbohydrates; it’s also packed with amino acids that help to build healthy cells. Jemison hopes it can start to improve the health of the Iroquois people, who face a number of diet-related health issues. According to the American Diabetes Association, Native peoples throughout the U.S. have the highest rate of diabetes of any ethnic group, with nearly 16 percent of tribal members affected. Limited access to healthy, fresh food has exacerbated the problem.

“The sincere hope of [the project’s original founder], John Mohawk, was that by putting Native food back on our tables, we might grow healthier,” Jemison said. “Could it be possible that if we return to a more Native diet, we could really combat diabetes?”

History in the Making

Traditional “sweet corn” sold at grocery stores across the U.S. is usually yellow in color, edible directly from the cob, and features high sugar content and a completely digesible hull. Iroquois White Corn, however, is a flour corn with a subtle, slightly nutty flavor and ears that are longer, wider, and heavier than sweet corn.

Historically, Iroquois women raised, planted, weeded, protected, harvested, braided, dried, shelled, and cooked the dietary staple. When the French army and its allies attacked what is now Ganondagan and three other Seneca towns in 1687, however, they destroyed nearly 1.3 million bushels of corn. Later, during the Revolutionary War, George Washington ordered Army troops to devastate and destroy Seneca settlements, ruining planted crops including 350,000 bushels of corn.

Although the Seneca continued farming, their constant need to move and reestablish their communities was devastating. Simultaneously, white ministers and educators insisted that Seneca men become the farmers, rather than Seneca women, further disrupting their traditional way of life.

Although Jemison has run the project out of Ganondagan for the last seven years, Dr. John Mohawk and his wife, Dr. Yvonne Dion Buffalo, originally founded it in the 1990s on the Cattaraugus Reservation, approximately two hours’ drive from Ganondagan. Jemison became involved with the project as John and Yvonne were establishing it, but when they died in 2005 and 2006, everything came to a screeching halt. Three to four years after their deaths, Jemison decided to re-start the project at Ganondagan, providing a stream of income for the Friends of Ganondagan group that supports the park.

“At a site like ours, you’re at the actual location where our people lived in the 1700s,” Jemison said. “You’ll see one of our traditional houses and our traditional plants, and the Iroquois White Corn Project is part of the total. Unfortunately, most Americans know very little about Native Americans. There’s not a whole of information about [us] in textbooks.”

Today, the project operates cooperatively with the Seneca-Iroquois National Museum. Interns and volunteer Friends of Ganondagan support the small staff that runs the project. As noted on its website, and true to the cultural roots that surround growing and use of this sacred corn, project organizers request that those who work with it today do so with a good mind, “bringing love and good intentions to the process while acknowledging the Creator and Mother Earth.”

A Labor-Intensive Process

Growing and processing Iroquois white corn takes considerable time and effort. Native American or First Nations’ farmers, who buy seed directly from the Project, must hand-plant and hand-pick the crop. The harvest occurs in October or early November.

Jemison also had to find individuals who could learn the entire process of preparing the corn, which has to be de-hulled, roasted, ground, and packaged in small batches. He sought out young people entering the job market and grant money enabled him to provide them with a decent wage.

Project leaders adapted the traditional cooking process to cut down on the amount of work. “We took away the time-consuming part of cooking and processing of the corn [traditionally, which used] hard wood ash to remove the hull from each kernel,” he said. Instead, the project workers use culinary lime, which accomplishes the same results. Washing the corn helps to remove the rest of the hull.

“We then hold a husking bee and braid the ears of corn together 30-plus at a time,” Jemison said. “We hang the corn to dry until April or May, and then it is hand-shelled from the cob. [Washed, and] sorted. ‘This is ideally a community-based effort,’” Jemison continued. And like all farming, it is subject to the uncertainty of weather.

Because Iroquois white corn products are so labor-intensive, they’re costly to make. “Farmers who grow the corn don’t see this as a get-rich-quick scheme,” Jemison said. “But because we provide markets for them, it encourages them to do this.”

Planting Iroquois White Corn.

Photo courtesy of Friends of Ganondagan

Processing White Corn.

Photo courtesy of Amy Blum
Cornell Small Farms Program Update

Farmer Veteran Work Parties

On April 18th, in partnership with CCE Steuben County, the Soil and Water district, and the New York chapter of the Farmer Veteran Coalition, veterans were invited to participate in a hands-on fencing workshop at Savona. Veteran Walter Palmer and his family hosted 8 veteran veterans at their new farm for a morning workshop on basic high-tensile fence building and understanding potential material and labor costs of different fence types. A cold-windy day drove the class inside the Palmers kitchen for hot drinks, snacks, and a sample of their first batch of maple syrup to continue the discussion on fence building.

On April 28th, Farm OPS also invited veterans to a high-tunnel raising event hosted at Centurion Farm in Locke to learn pipe systems. We are thankful to all that are willing to share their stories and inspire us with all the potential small farms have to offer.

Before we put the actual plastic up. (See the CSF YouTube Page and click Playlists/Veteran Tour for more on Jeff and Nina Saeli’s farm.)

We’ll try to host more of these hand-on workdays in the fall when the season slows down a bit. Check the Small Farms Calendar, or subscribe to the NY Veterans in agriculture listserv for more info (email NYVET-SAG-L-request@cornell.edu subj: join).

Registration Opens in August for Online Learn to Farm Courses

Our suite of over 20 online courses build the technical and business skills of farmers. Expert farmers and extension educators guide students through the latest research-based information to help improve efficiency and increase profit on small farms. Topics range from Starting at Square One to Writing a Business Plan to Mushroom Cultivation and Grazing Management.

Students connect with other farmers, work on farm plans, and gain practical tips without leaving their home. Course content can be accessed anywhere with a high-speed internet connection. Courses are offered from September 2018 through April 2019.

Watch our short video about the courses: https://youtu.be/ki8-SSHA950

Most courses are six weeks long. Each week features an evening webinar and follow-up readings, videos, and activities. Students and their instructors connect through online forums and live chat. If you aren’t able to attend the webinars in real-time, they are always recorded for later viewing.

Course costs range from $150 - $250, which entitles two people from a farm to attend. Discounts for early sign up and multiple course sign ups are available, as well as a special discount for veterans.

Corn from page 2

Jemison says the process is worth the effort. “I think it’s important to keep growing food that has an ancient history, originates in the Americas, and is native to the area you come from,” he said.

He hopes that ultimately, the Iroquois White Corn Project will sustain itself; the Iroquois people will be able to raise more of their own corn and support farmers; and health outcomes will improve.

“This is the food that our Creator provided us with,” Jemison said. “Because so much corn was destroyed at Ganondagan, we believe it is very important to grow it and sell it here. [Food opens doors], especially when you sit down and eat together.”

“>This article originally appeared in the online publication CIVIL EATS on April 20, 2018. Our thanks for reprint permission and we encourage readers to view other articles at www.CivilEats.com.”

Ganondagan (ga-NON-da-gan) State Historic Site located in Victor, NY spans 569 acres, Ganondagan is the original site of a 17th century Seneca town and is open to the public. Learn more at: http://ganondagan.org.

Corn drying

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RESOURCE SPOTLIGHT

Sowing the Seeds of Food Justice:
A Guide for Farmers Who Want to Supply Low-Income Communities While Maintaining Financial Sustainability

This manual offers strategies and insights to help you run a small farm business that supports the needs of low-income communities.

As much as farmers want to support the community, the community needs our solidarity. About 50 million Americans are food insecure, with half of those individuals living in food deserts, where it’s difficult or impossible to access affordable, healthy food. This lack of access to life-giving food has dire consequences for people.

This manual is drawn from: (1) our experience growing Soul Fire Farm, a family farm working to end racial and economic injustice in the food system; (2) the experiences of our affiliated farms in the struggle for food justice; and (3) extensive research on resources and best practices for serving low-income communities in the local food and agricultural sector.

Funding for this project was provided by the USDA Sustainable Agriculture Research and Education program. This guide draws extensively from public reports written by the National Sustainable Agriculture Coalition and the Project for Public Spaces. We are deeply grateful for these invaluable resources.

Learn more and download the FREE publication: https://projects.sare.org/information-product/sowing-the-seeds-of-justice-food-manual/ and http://www.soulfirefarm.org/media/publications/
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**Scottish Highland cow grazing in the Southern Tier of NY.**

*by Jen Gabriel*
Focusing on What’s Important at North Country Creamery

In 2016 and 2017, North Country Creamery participated in a beginning farmer Profit Team project – learn how you can incorporate some of the lessons they learned along the way.

by Kat McCarthy and Dan Welch

Ashlee Kleinhammer became involved with Clover Mead Farm in 2012, when she approached its then owner, Sam Hendren, about buying the business. In 2013, a third-party foundation purchased the farm from Sam and established a 5-year lease-purchase agreement for Kleinhammer, who recently closed on the property. In reflection, Ashlee points out that Sam set-up both the infrastructure and the markets for local grass-fed cheeses in this area and paved the way for many local farmers. He not only started Clover Mead Farm, but was also a catalyst for the Ausable Valley Grange Farmers Market Association. During the first year establishing her farmstead creamery, North Country Creamery, Ashlee was able to hire Hendren as a mentor through NOFA’s Journeyperson program.

Five years later, Ashlee is looking to expand. She has a long-term goal of building a new milking parlor, fostering farm community, and enhancing quality of life along with business viability. Since taking over the business, the line of products has grown to include yogurt and raw milk, and the onsite Clover Mead Café and Farm Store has been reinstated. Along the way, she has focused on strategies to increase efficiency and enhance food safety compliance.

Profit Team Project Review

Another farmer first suggested Ashlee apply for the profit team project in 2016. At the time, the farm’s cheesemaker began to ask questions about production techniques that were beyond Ashlee’s knowledge. “We value our employees; we try to think of them as our best assets,” Kleinhammer notes. This helped Ashlee identify a need to work with a consultant who could help address the cheesemaker’s questions while growing the operation’s knowledge of food safety and milk quality processing. As a result, Kleinhammer applied for the profit team project to work with consultant Shannon Rice-Nichols. By bringing in a consultant, North Country Creamery developed a HACCP plan over time, answering periodic “homework” assignments that gathered approximately 50 pages of data. The resulting recommendations from this consultant included tips and techniques that improved cheese quality and processing, from suggestions about pressing and flipping cheese, to brining and batching, to yogurt container filling.

In developing the HACCP plan, the farm focused on improving standard operating procedures (SOPs) and standard sanitation procedures. Before the project, procedures were informally organized. Now, written SOPs are coupled with forms for daily recordkeeping. Establishing these protocols helped Ashlee identify that her cheesemaker was assigned too many tasks and therefore didn’t have enough time to focus on working in the cheese cave. Through simple strategies like developing a job description or writing out the cheese making process, both owner and staff could better understand business operations, work flow and needs. Ashlee notes “we made so many changes and improvements” while working with a consultant on this project, which will have short- and long-term impacts.

As a result of the project, the business has reduced its risk, improved efficiency, and enhanced product quality. In turn, North Country Creamery is selling more yogurt, which now also has a longer shelf life. Additionally, farmer’s market sales are improving over time. From a quality of life standpoint, Ashlee notes that becoming more comfortable with food safety requirements and procedures has helped her be more at ease. These strategies have poised the business to be ready for scaling up and positioned North Country Creamery to be in compliance with upcoming regulations as a result of the Food Safety Modernization Act. Furthermore, formalizing SOPs and staff training has allowed Ashlee to delegate more recordkeeping and creamery management duties. She can now focus more time on cows and herd health, her true passion. With the additional free time, she is currently working with mentors to focus...
on herd health and is already seeing improvements. Looking ahead, Ashlee hopes to review data like labor costs and yields as well as financials associated with processing to assess the profitability of various cheeses.

Finding the Right Consultant
A strong focus of the farm’s profit team project stemmed from a goal of improving the cheese making process and supporting the farm’s cheesemaker to learn about ways to enhance existing procedures. To do this Ashlee needed an outside consultant who could assist in developing processes that would increase the efficiency of the creamery. Additionally, a consultant could help North Country Creamery develop a Hazard Analysis Critical Control Point (HACCP) plan. By establishing written procedures and improving process control, the cheesemaker’s time is now used more efficiently. An unexpected benefit from this project was that Ashlee now also has more time to work with the cows as well.

Farmers can sometimes be reluctant to hire an outside consultant due to costs or not knowing where to find someone with the necessary expertise. Two things made it clear that North Country Creamery needed a consultant with expertise in dairy processing and food safety. One was that their cheesemaker began asking technical questions that the farm management could not answer. The second was the need for the farm to be ready for the new regulations that are being developed by the Food and Drug Administration (FDA) to implement the Food Safety Modernization Act. By working with a consultant, the farm was able to access additional knowledge and experience that could be applied to improving their operation.

While there is some cost to hiring a consultant, the cost is relatively low when compared with the cost of not proactively addressing risks to the farm business. In the case of North Country Creamery, having written Standard Operating Procedures and a HACCP plan will help the farm minimize risks of a foodborne illness outbreak, which has the potential to put a farm out of business. While Ashley plans to do more financial analysis, she expects that implementing process improvements will lead to reduced costs and higher sales, which could significantly improve profitability in the long-run.

Working with a consultant can bring many benefits to a farm. Consider the following tips when planning to work with a farm consultant. This advice can be applied for many different types of consultants, ranging from business experts to financial advisors to those providing technical assistance.

- Ask for references and follow-up with them to learn about the experiences other businesses had in working with the consultant.
- Meet with a perspective consultant before signing an agreement to see if they are a good fit for your farm and project.
- Make your expectations for the project clear from the initial point of contact.
- Receive a written scope of work or project outline.
- Keep in contact with the service provider throughout the project time frame.
- Ask questions and do your homework to stay informed throughout the process.
- Don’t be afraid to change providers if you’re not satisfied with the work completed.

Strategies for Success
Ashlee’s strategies can be readily applied to other farm businesses.

- Plan in stages and keep a focus on your true passion and goals. For Ashlee, her passion is working with cows. In reflection, Ashlee said “sometimes, I wake up in the morning, or at the end of the day [and] I’m like, I do all this because I like milking cows...so much of what I do has nothing to do with milking cows.” Her role as a farmer is diverse and requires her to complete numerous tasks, many of which contribute to her ability to work with cows, but are not directly related. By keeping an eye on the big picture, North Country Creamery has identified steps towards increasing business visibility while scaling up. Though establishing set procedures and improving efficiencies in the business, Ashlee has been able to make more time to focus on working with the cows.
- Be aware of your own risk tolerance and comfort levels. In acknowledging a certain level of risk aversion, Ashlee chose to work with a third party foundation on a lease-purchase agreement. This avoided undue stress and enabled her to focus on business operations and improvements.
- Understand the value of employees. Ashlee and her partner both feel that employees are one of their best assets. As a result, they have offered opportunities for staff to incubate new businesses onsite, providing space for individuals to start beekeeping, raising goats, and growing a market garden. They also encourage the development of an environment in which staff learn from one another. By fostering opportunities for peer-to-peer learning, staff enhance skills, while contributing to the cultivation of a strong and resilient farm community. This in turn establishes a dedicated, knowledgeable core of staff who understand the farm operations.

This project was a collaboration of the Cornell Small Farms Program, NY Farm Viability Institute, and NY FarmNet, and made possible with funding from the National Institute of Food and Agriculture, U.S. Department of Agriculture, under award number 2015-70017-22882.

Cows at North Country Creamery
Photos by North Country Creamer

Kat McCarthy worked with the Beginning Farmer Profit Teams as the Beginning Farmer Project Coordinator for the Cornell Small Farms Program from March 2017 through May 2018. Dan Welch is the Business Planning Director at NY FarmNet and has been involved with the profit team project since 2015.

Information for this summary was collected in August 2017. For more information about the Profit Team Project, please visit www.tinyurl.com/ProfitTeams.
Six Key Principles for a Successful Silvopasture
Combining trees, forage, and livestock is more than just placing them together.

by Steve Gabriel

Within the practice of agroforestry, or mixing trees with agricultural production, the concept of silvopasture has some of the broadest appeal. Many farms already work with livestock, and making good use of forested land for multiple yields is highly beneficial to the farmer.

Whether you choose to graze sheep in a Christmas tree farm, move cows through a walnut plantation, or graze chickens though an apple orchard, several key principles apply. In reading about silvopasture, you will see again and again that the system is not just “throwing animals” into the woods, or planting some trees in the pasture. There must be thought, planning, and intention as the farmer designs the system. This article outlines six of the key considerations for getting started in Silvopasture.

1. Silvopasture can be established in existing woodlands, or trees can be brought into pasture

One of the nice aspects to silvopasture is that one can establish a system on almost any type of land. Of course, establishing it in existing forest is a very different process in many ways than bringing the trees into open pasture. The only land types we might consider avoiding silvopasture are sensitive areas such as wetlands and healthy, maturing hardwood forests that might be best left to their own process of succession.

If starting with forest, the farmer needs to change the ecology (i.e. thin a bunch of trees) to support the establishment of forages, which include grasses, legumes, forbs, and shrubs and trees meant as fodder for livestock. Trees could also produce fruits and nuts for foraging, such as chestnuts or persimmons, which animals could harvest once they fall to the ground.

In the pasture, the goal is to add trees without blocking too much light from hitting the ground, which could suppress forage growth. Trees can be planted in rows, clusters, or evenly spaced in an orchard-like planting. Faster growing species such as locust, alder, willow, and poplar offer an advantage because they can quickly grow above browse height, which allows for faster integration with grazing management.

In any case, a balance has to be struck so that all parts of the system are optimized. Remarkably, research has shown that some pasture grasses actually perform better under partial shade. Less surprising is that animals also do better, benefitting from the cooling effects of shade, especially in the hot summer months.

2. Animals are matched to land type and stage of succession

It’s critically important from the outset that the appropriate animal is chosen for a given site in order to reduce the potential of inflicting damage to the landscape. Animals are incredible at what they do, but it cannot be overstated that they have just as much potential to do good as they do harm. Some of the potential risks include:

**Poultry:** could scratch or root down to bare soil and damage roots and plantings.

Animals can do a lot of good, or a lot of harm. You can see from the above list that most of the problems can be avoided by doing proper assessment of the land and engaging with the animals to ensure they are moved before doing harm.

In addition to choosing the right type of animal for the system, careful selection of the specific breed is an essential task. Some breeds are able to utilize a wider range of forage and conditions, whereas others are not as willing to be as flexible. Often, farmers can have success “training” animals to be better browsers on a range of forage, if they are not accustomed to seeking it out.

3. Animals are always on a rotation

This principle is implied above, and proper rotation of animals has been shown to have a myriad of benefits to a farm. Moving animals allows for a given paddock to rest and recover, which is critical to maximizing forage quantity and quality. Moving animals is good for them, as well, as they have reduced exposure to disease and are receiving the highest quality food possible.

This aspect of silvopasture is NON-NEGOTIABLE, and is often the biggest hurdle for adopting the practice, especially by grazers who have been practicing continuous grazing (leaving animals in one large paddock) for some time. Regardless, it is the universal opinion of silvopasture advocates that animals should not be placed in tree-based systems if they will not be managed through rotational grazing.

4. Trees should match the soil type and microclimate and have multiple functions

One could arguably plant trees for the sole purpose of shading their livestock, but why not aim a bit higher? There are so many choices in the temperate climate for trees that will do well in even the worst of soils that provide not only shade but a number of other possible yields. Of course, the yields will depend on how the trees are managed, and are easier to “control” when establishing a silvopasture in open field conditions versus an existing forest.

The goals of the farmer or landowner also come into play, as there is not use planting apple trees, for instance, if there isn’t a desire to harvest apples. Some farmers want to establish the lowest maintenance trees possible. Some want a yield of fruit in 3 – 5 years or of nuts in 5 – 10. And some are happy to plant timber species and wait 50 or more years to harvest.

A few of our favorite silvopasture species include:

**Black Locust (Robinia pseudoacacia)** is hardy, resilient, and produces some of the most rot resistant wood in the temperate climate while also offering high-protein fodder for animals with essentially the same nutrition as alfalfa.

**Willow (Salix spp.)** are a huge genera of trees that are highly adaptable and produce condensed tannins that have been shown to reduce some parasite load in grazing sheep.

**Mulberry (Morus spp.)** are fast growing, highly productive, and very palatable for all grazing animals, including mono-gastric (single stomach) pigs and poultry.

**Poplars (Populus spp.)** offers one of the most valuable fodder and shade species that can be quickly established in a silvopasture.

5. Forage and fodder should be diverse and support a resilient food supply for animals

One of the largest opportunities in silvopasture is the creation of a wide range of eco-types, which can support a wider range of grasses, forbs, herbaceous plants, and trees for animal feed. This gives animals a more diverse and healthy diet that is not only nutritious, but potentially medicinal. In essence, the design of a diverse silvopasture offers animals a habitat that might resemble their “original” experience grazing in the wild.

Farming has oversimplified animals’ experience of seeking food; in some operations the animals only visit the feed bin for grain or hay. This not only offers a limited diet in terms of nutrition, but starves the animals of needing to exercise their innate characteristics for seeking out food in the landscape.

In addition to supporting overall health and well being of the animals through diverse forage, this focus provides an economic incentive for the farmer. More diverse feeds should reduce the feed bill and also provide food in lean times, as tree-based systems can often buffer better against long-term drought and even extreme rain. Since grasses grow on a bell curve, they often “peak” in early summer and production is lower in July and August – unless the forages are shaded and can thus sustain better quality for a longer period of time.

Careful matching of forage to these micro-environments is the challenge. For example, for most silvopasture in the eastern U.S., cool-season grasses are utilized, as they excel in part sun environments. Warm season
Nuts for Nuts: Seeding a Nut Industry in the Northeast

Three farmers in the Hudson Valley area are united by the opportunity for developing a new industry around chestnuts and hazelnuts to advance agroforestry in the Northeast United States.

by Mark Phillips

In the Spring of 2017, 35 people gathered at Back the Lane Farm in Stepheontown, New York, for a workshop with Mark Shepard, author of Restoration Agriculture, to witness the design and implementation of a permaculture inspired chestnut and hazelnut orchard. As the founder of New Forest Farm in Viola, Wisconsin—a commercial scale, perennial agricultural ecosystem that mimics the native ecology of its bioregion—Shepard has served as resource and inspiration for farmers aspiring to use agroforestry, or the intentional cultivation of trees and tree crops, as a vehicle for ecological restoration and financial profitability. This story highlights the work of three diversified tree farms in the Hudson valley area, united by the bold vision that chestnuts and hazelnuts can one day be the staple food of the Northeast region and beyond.

As woody perennials that produce nuts year after year without the annual tillage required of grains and vegetables, chestnuts and hazelnuts are ecosystem service providers par excellence—reclaiming degraded landscapes while sequestering carbon in topsoil and plant biomass. Project Drawdown, an interdisciplinary collaborative that recently delineated the 100 top solutions to climate change, has called out regenerative agriculture for its potential to reverse global warming while enhancing agricultural resilience and food security in the face of intensifying climate change.

Together, chestnuts and hazelnuts represent an opportunity to advance agroforestry as a carbon farming practice in the Northeast, with the added benefit that their nuts are a profitable new cash crop for the region’s agricultural economy.

Indeed, in addition to their ecological benefits, chestnuts and hazelnuts boast growing domestic and international markets in short supply. Propagate Ventures, an agroforestry investment firm based in Hudson, NY, estimates that it would only take 5,000 acres of chestnuts to displace the $12.4 million imported into the country in 2011, with opportunities to further capitalize on unique options for value-added processing. Chestnuts, for example, can be processed into a delicious gluten-free flour, while hazelnuts produce a superior culinary oil and, of course, are a main ingredient in Ferrero’s popular Nutella spread. The pair are nutritionally similar to corn and soy, respectively, and could conceivably replace their annual counterparts with enough support and investment: “We’re going to replicate the corn/soybean model because we know it works at scale, and so we want to have some sort of analog for both,” shares Ben Hart, who hosted Shepard’s workshop last spring.

As a part of a long-term vision to seed a new industry for nuts in the Hudson Valley, Hart planted several thousand seedlings on his farm in a single weekend with support from Shepard’s team and workshop participants. Initially sourcing commercially yielding varieties from Shepard’s nursery, Hart plans to work together with neighboring Shaker Creek Farm to breed locally adapted nursery stock for larger orchard development in the area over the next decade.

Good genetics are the foundation of successful nut growing operations, and decades of work from independent growers in the Midwest and Finger Lakes, NY, regions have produced hybridized varieties of both chestnuts and hazelnuts that address issues like chestnut and eastern filbert blight, while offering cold-hardiness and commercial farm productivity. Active breeding efforts by farmers and researchers themselves are ongoing, with nurseries like Shepard’s quickly selling out each season as demand for nut trees increases throughout the country.

“Our goal is to begin developing chestnuts, hazelnuts, and other perennial plant species for commercial use,” shares Keegan Schelling of Shaker Creek Farm, “so that there is enough supply for area farmers as the industry grows.” With a diversified orchard planted last spring that includes plans for zero-input, organic apples for cider production, Keegan and his partner Alison are also researching effective perennial polycultures—intentional plantings of diverse species in mutually beneficial relationship—that can be profitably replicated throughout Columbia County and elsewhere in the Hudson valley.

Ben Hart planted several thousand trees on his family farm over the course of a single weekend with the help of light machinery and some enthusiastic workshop participants. Spring 2017.

Primarily focused on hazelnuts, the couple began converting their seven-acre woodlot into a diverse, community-scale food forest two years ago and is already seeing the first signs of nuts on some of the top-performing shrubs. Like their neighbors in New York, Seva and Kalyan are keen on resource sharing, with the goal of learning from existing growers in the Midwest and, eventually, plugging into larger efforts for regional nut-producer cooperation.

Pathways to Scale

Cooperative development between growers and food system stakeholders will play a key role in supporting the longer-term success of a nut industry in the region. “In the Midwest almost across the board there are mid-scale businesses that producers are selling into, and those businesses are doing all of the packaging, processing, and distribution,” shares Connor Stedman of Appleseed Permaculture, a farm planning and regenerative design firm based in the Hudson Valley and New England area. Both Stedman and his colleague Russell Wallack research nut-based agroforestry systems as a part of their role with Appleseed, referencing the Route 9 Cooperative in Ohio as a successful example of coordinated sales and distribution for nuts. Processing upwards of 100,000 pounds of chestnuts annually, the Route 9 Cooperative provides efficiencies of scale for five different orchards that might otherwise compete with one another to access consumer markets.

Both Stedman and Wallack are enthusiastic about the potential of nuts while offering guiding caution to new growers: “Recognizing that we’re at such an early stage with this crop in the U.S. context, we need to be scientific about it if we want to develop an industry around chestnuts in the region,” shares Wallack, who emphasizes that research and collaboration on breeding for commercial production up front will directly benefit the ultimate success of a nut industry in the region.

Grasslands are best for overly sunny or dry areas, or warmer climates. The trees effectively help keep the optimal conditions, can optimize production.

For instance, Black Locust is a great silvopasture species as it leafs out late in the spring and when fully leafed out casts a mild shade, allowing the space underneath to be cool and slow, especially if you are new to one or more of the two conditions, can optimize production.

6. The system is optimized to stack inputs and outputs in both space and time

The beauty in silvopasture systems is not in the parts, but the complex whole that is created by these systems. Yet, with complexity comes a challenge in management—this is why agriculture in the US and other industrialized nations has been on a trend for more straight rows, single species monoculture, and rationed feeds. It’s easier to do the math. But the benefits of creating a more complex ecological system outweigh the perhaps more difficult time it takes to design, establish, and manage such a system.

Being patient is key. Few of us are raised in a culture where we understand a more natural way of farming. Many are interested in the concept of a more complex ecology, yet find themselves overwhelmed and frustrated as they try to comprehend and understand things. It’s wise then, to start small and slow, especially if you are new to one or more of the main aspects of this practice (grazing and forestry).

Draw upon the knowledge of others, and recognize you are in for a lifetime of learning. Get the foundations of grazing right from the start, then bring in the forestry aspects. The content of the book, along with the case studies of farms actively practicing silvopasture, will help paint a picture of how this can be done.


——— See Nuts page 9  ———
“It sounds like a monumental task, but I’m mostly encouraged,” says Seva from Nutwood Farm. Like their Hudson Valley neighbors, Seva and Kalyan are taking the lead on their own breeding efforts while calling for additional support from values-aligned partners: “Soybeans were non-existent as a crop 100 years ago and it’s only because of massive public investment through land-grant universities and public research that spurred the soy plant into existence. So nuts really just need a revolution, a little redirecting and supporting it could totally happen.”

With active breeding efforts underway, there is promising potential for tapping into larger networks of existing nut-growers throughout the region. About 200 miles west of the Hudson Valley in the Finger Lakes, for example, the nascent New York Tree Crops Alliance is taking tangible steps towards the formation of a producer cooperative. Established New York operations like Twisted Tree Farm in Spencer and Z’s Nutty Ridge in McGraw already serve as important resources to new nut growers in the surrounding region, providing commercial nursery stock and education around orchard planting and maintenance. The budding cooperative is an opportunity to further develop technical assistance for chestnut and hazelnut operations throughout the state while supporting the regional adoption of nuts as an ecologically regenerative industry. With projected sales in the $500M range over twenty years, the cooperative identifies the chestnut and hazelnut duo as a financially viable opportunity for restoring fallow hillsides throughout New York State to agricultural productivity.

Leading with polyculture, not monoculture Moving forward, a key challenge will be to develop production models for chestnuts and hazelnuts that not only optimize biodiversity but also achieve the economies of scale necessary for commercial viability. “All of this research is about how we design diverse chestnut orchards, or orchards that effectively integrate into a farm system,” shares Wal-lack. He notes the distinction between simplified monoculture plantings of chestnuts and the more diverse, albeit labor-intensive polycultures in place at farms like Shepard’s in Wisconsin.

Ben Hart, whose initial planting last spring serves as a model for regional replication, points out that, “If we want this regenerative model of nut-based polyculture farming to explode, it must be profitable for farmers to operate at price points consumers are willing to accept. In the context of an economic system that rewards productivity and scale, the long-term adoption of such diversified farms calls for business models that navigate the complexity of polyculture while attaining at least some of the operational efficiencies of commodity-scale monoculture—not an easy nut to crack.”

Information sharing is huge: we’re all in the same game together and I don’t see other people who are doing nuts as a competitor with me so much as a possible collaborator,” affirms Hart. He identifies opportunities for coordinated research on farm plans and financial models as key to the long-term success of a nut-industry in the Hudson valley and beyond.

Recognizing that the trees are a long-term investment, farmers aspiring to return chestnuts and hazelnuts to the northeast food system are clearly a highly committed, entrepreneurial lot. For Nutwood Farm, the planting of nuts is a deliberate choice, rooted in a larger story about the potential of perennial agriculture to heal degraded land and regenerate communities: “We still have the diversity of the natural environment, we have the insect and the bird life that are the signature of a healthy ecosystem, or at least one that is recovering,” share Seva and Kalyan. “We can contribute to that or we can take from that. We contribute to it by bringing in more diversity, because diversity is strength.”

Mark is based in Great Barrington, Massachusetts, where he explores the relationships between food, community, and agriculture in the new economy. You can read more of his writing and learn about his work at About.me/MarkPHL.

For more information, including audio interviews and video content, readers can visit the original version of this article published online at http://fieldguide.capitalinstitute.org/.

Readers interested in agroforestry and nut production are encouraged to visit the Savannah Institute at www.savannahinstitute.org for more information on the subject, including education and webinars from experienced farmers and practitioners in the Midwest U.S. and beyond.

A version of this article was originally published in The Field Guide to a Regenerative Economy, an activating storytelling project of The Capital Institute working to illuminate the emergence of a regenerative economy. Learn more at capitalinstitute.org
Operation Mountain Grown: Veterans Growing Food, Jobs and Futures in Coal Country

After serving our country, two veterans are using agriculture to make a difference for the people in one of the nation’s poorest counties.

by Suzanne Pender

For a remote, mountainous area in West Virginia, McDowell County has gotten a lot of attention lately. The late Celebrity chef Anthony Bourdain filmed a segment of his television show there, and West Virginia native Elaine McMillion Sheldon, filmed her Peabody Award winning documentary “Hollow” there (her recent documentary short “Heroin(e),” also based in West Virginia, was nominated for an Academy Award last year).

The area’s statistics are daunting – the county is the poorest in West Virginia with one of the lowest life expectancies in the United States. Yet, military veterans Jason Tartt and Sylvester “Sky” Edwards see a different picture – one of potential. Jason and Sky are rolling up their sleeves and bringing new life to the area by creating jobs through farmer training and economic development, and growing healthy food for local schools and their community.

The County

With a history of coal’s rise and decline, the people of McDowell County have suffered from job and population loss and health issues due to drug addiction and limited access to healthy food.

This is a lot different from the McDowell County where Jason grew up. “It wasn’t a food desert when I was raised here. You had a garden, an apple tree, pear tree, something like that in every yard. I didn’t care if the grocery stores were stocked or not. People could survive — and that went for everybody. But when I came back, I saw that tradition had not been passed on to future generations. It was gone.”

When asked why those skills were lost, Jason said, “I think the decline of coal mining. We took for granted that it would always be there, so there was no transition plan. We don’t promote agriculture to kids. We take farmers for granted. New to farming, Jason said, “Agriculture has been good for me – the solitude, silence. The pleasure I get out of putting everything you need,” said Jason. “This will go into the school lunches and salad bar. We want. This will go into the school lunches and salad bar. We want... The most therapeutic thing I could do was to be out there in a rural area working. I found peace and solace. I needed that. I was able to confront all of the things I had been through. I found a place I could put them and live with them.”

New to farming, Jason said, “Agriculture has been good for me – the solitude, silence. The pleasure I get out of putting a seed in the ground and seeing it grow. You know, just being able to quiet your mind. It allows you to take your mind off everything else. This has been instrumental for me.”

The farm includes land in several areas around the county. One is used as a training facility for youth and veterans. Sky said, “We can get veterans in here and they lose track of time. They’ll look up and say, ‘Is it 4 o’clock already? Can I come back tomorrow?’”

What They Grow

The farm grows tomatoes, cucumbers and melons for the local school. Sky said, “We’re beta testing what products they want. This will go into the school lunches and salad bar. We grow lettuces, and at the end of the season, the high tunnel will be full of spinach, lettuce, French chard, kale — we love kale, and grow several different types — beets, arugula, okra, corn, a little of everything.” The list goes on to include mushrooms, maple syrup, green beans, dried beans, berry production, and fruit trees. Pastured chickens provide free-range eggs.

The hillsides are perfect for orchards. “Our focus is shifting, because, you have to incorporate the mountains. So that’s why we’re expanding to maple syrup, honey, mushrooms. You start talking about your proteins, and there are a lot of vegetables and things we can grow that provide you with everything you need,” said Jason.

They are also considering a regenerative paw paw orchard. “Paw paws can be freeze dried for 15-20 years. Combined with black walnuts, that’s just the sort of thing the tourists could take out into the woods here,” said Sky.

Dorothy, Jason’s wife, makes value-added items from the land, such as soaps and lotions using local herbs. “I started getting into herbs because of my health,” she said. “The body can heal itself, you just need to give it the right nutrients to heal.”

USDA and Other Partnerships

Partnerships are the lifeblood of McDowell County Farms. One partner is the USDA’s Natural Resources Conservation Service. “NRCS helped us with high tunnels, drip irrigation, all of it,” said Sky.

“We have a project for high tunnels in the county,” said Gary Redden, the local NRCS conservationist. “And we’re hoping we can involve others who want to start farming. These guys are the reason we targeted this area. We saw what they were trying do down here, and this was a way to try to enhance it.” NRCS works at the local level, following the lead community leaders, to develop a focused conservation approach to address local challenges and opportunities.

Starting McDowell County Farms

Jason and Sky have a lot in common. Both men served in the military – Jason in Bosnia and Sky in Vietnam. Both moved around a lot. Both saw something in McDowell County that inspired them. But, their paths to farming were very different.

Cloudy grow farming and later studied organic farming at the Rodale Institute. After leaving his North Carolina farm to his children, he wanted to start again in someplace new, someplace that needed farmers. “To me, it’s always been a greater need in an impoverished area,” he said. “And, I’m of the persuasion that instead of growing food I can send to you, I’d rather stand beside you and teach you how to grow it. And you then you can teach others. That’s the ripple in the water that keeps on growing,” he said. He picked McDowell County, and reached out to Jason after some people in the community suggested he meet him.

Jason, searching for the right fit back home in McDowell, said, “I just so happened to read an article about veterans and agriculture and decide to see if I could do something.” Combining Sky’s farming skills with the business and partnership-building skills Jason cultivated at the Department of Defense, McDowell County Farms was formed.

The solitute of being immersed in nature helped both veterans heal. Sky said, “Coming home (from Vietnam) at the time... The most therapeutic thing I could do was to be out there in a rural area working. I found peace and solace. I needed that. I was able to confront all of the things I had been through. I found a place I could put them and live with them.”

When asked why those skills were lost, Jason said, “I think the decline of coal mining. We took for granted that it would always be there, so there was no transition plan. We don’t promote agriculture to kids. We take farmers for granted.”

Though organic practices are used, Jason said they’d like to get certified as they expand beyond local markets. NRCS has a conservation activity plan that can help farmers transition to organic, and the Farm Service Agency helps offset the costs for organic certification.

Growing Jobs

Jason and Sky want to put agriculture on the map in McDowell by teaching others. But bringing farming back to the area hasn’t been easy. Learning as they go, the farmers have made adjustments to their approach and business plan.

“One of the things veterans said is that everyone is trying get veterans into ag but no one is telling these guys how to sell the product, or make a sustainable model,” said Jason. “So...
We don’t talk folks what to farm. We give them exposure to what’s here — beekeeping, maple syrup production, growing in the high tunnel. Once they decide, then we put things in place so they can move forward,” said Jason. “It’s become a lot of community activism. I’m a team builder. That’s one of my strengths.” Jason has brought in landscape architects, business and market professionals and students from Virginia Tech, Bluefield College and West Virginia University to advise new farmers setting up their businesses.

Jason’s son (also named Jason) started a mushroom business, and recently led on-farm classes on mushroom production, inoculating logs with Shiitake. “I’m nineteen. When my father brought me back here, at first, I wasn’t sure what we were going to do. But, I started to see the end goal. And seeing some of the kids who are suffering with parents on drugs, I asked, what are they going to do? They are probably going to leave. The biggest export we have right now is the kids. But, they don’t have to leave in order to build a career and build a life. So, that’s my mission — to teach the kids. This is home. And we don’t want them to leave. It is a very poor place, but it is a goldmine.”

Jason Jr. is also the head of American Youth Agripreneur Association, which teaches students about different facets of the agribusiness sector, primarily harvesting in Appalachia. They also learn to write business plans, marketing, developing value-added products, working in high tunnels and much more.

Asked about his son’s ability to inspire others, Jason said, “A lot of young people look at him and say, ‘I think there may be a chance for me here.’”

They are also in the process of starting a farm store with local products. “We went to North Carolina and there are a lot of folks in farm communities that go to places with locally sourced products. We don’t have that here. So, we bought a building in Kimbell. It needs a lot of work, but we’re going to start a small farm store there. And, as kids and their parents go through the training program, they can bring their products to the farm store and we’ll sell it for them. We’ve got a lot of iron in the fire. But it’s necessary at this point. If it’s going to move, we have to push it,” said Jason.

The farmers are working with schools and youth organizations, and hope that farming can be of special help to some of the area’s troubled youth. Jason Jr. is partnering with a local school to grow vegetables in a high tunnel right on the property.

They also partner with West Virginia University Extension Service’s “Kids Koupon” program, which brings farmers markets to schools along with nutritionists and dieticians.

The Future
With the efforts of these farmers and their community, the future for McDowell County looks bright. “This is home. It’s a beautiful place. And a lot of beautiful things have happened to my life here because of the people that had something to do with my upbringing,” said Jason.

Sky reflects, “And so, people ask, when do you stop giving. You know what, my reservoir’s refilled every day. I get tired like everybody else. But tomorrow morning when I get up, I’m grateful to be alive. And, I don’t mean that because I’m 68 years old. I mean that because I’ve lived through Vietnam and I put a lot of young men in bags. But I’m still here. So I have a lot to be thankful for.”

“We can go through life and we can take and take and take. And somewhere we’re going to get to the end of the line, and there’s nothing else to take. Or we can go through life slowly, and we’ll get to the end, but we’re giving as we go.”

Suzanne Pender is a communications coordinator at the USDA Natural Resources Conservation Service, specializing in the areas of organic, veteran, and urban farmers and can be reached at Suzanne.pender@wdc.usda.gov

NRCS works at the local level, helping communities and individual farmers achieve their conservation goals. For more information on how NRCS helps farmers with high tunnels and other conservation practices, visit www.nrcs.usda.gov

Originally posted on May 18 as blog and story map on www.farmers.gov. Intro text was slightly different, and included “Friday on the Farm” standard text. This text was removed for this version.
Gaining and Retaining Customer from On-Farm Events

Will having an event at my farm help me gain and retain customers? This study surveyed on-farm event attendees to find out.

by Marie Anselm

Many farms have considered hosting special events on-site as a marketing strategy to attract new and existing customers. Any kind of farm can host an on-farm event, not just those that have regularly scheduled agritourism activities. A special event could include a farm that is usually closed to the public hosting a harvest dinner, or a Community Supported Agriculture operation opening to non-members. From a marketing perspective, farms may find on-farm special events an appealing way of reaching out to large amounts of people. On-farm special events can potentially increase farm sales the day of the event, make new customers to drive future sales, and build relationships with existing customers. However, beyond anecdotal evidence, there is little information on how, if at all, these events help farms gain and retain customers. Hosting an on-farm special event requires a significant amount of time and planning for it to be successful. Before hosting such an event it is helpful for farms to have an understanding of how customers will respond so they can decide if an on-farm special event is a good fit for their marketing goals.

Cornell Cooperative Extension (CCE) Madison County coordinates a large on-farm special event every year: Open Farm Day. Open Farm Day is a collaborative event where around 30 farms across Madison County, NY open to the public for the same hours on the same Saturday in July. Farms of all types and all sizes participate, and for many it is the only event that they host at their farm. Open Farm Day draws almost 4,000 people, many of whom are children and families. Event attendees are able to visit as many farms as they want and receive a free giveaway prize for visiting at least three farms.

To learn more about customer attraction and retention from on-farm special events, CCE Madison County surveyed Open Farm Day visitors via two electronic surveys in 2015 and 2016. To gather visitors’ email addresses, every participating Open Farm Day farm signed-in guests with a form that allowed visitors to leave their email address if they were willing to be contacted to take a survey on their experience with the event. CCE Madison also made a link to take the survey online public. The first survey was sent out to Open Farm Day guests in 2015 and 2016 to a total of 1,125 unique Open Farm Day visitors that attended the event those years.

Visitors tour Fruit of the Fungi in Lebanon, NY on Open Farm Day.

Photo by Fruit of the Fungi

Results from this survey in 2015 and 2016 were aggregated for a total of 366 responses representing a response rate of approximately 35.5 percent. The second survey was a visitor follow-up survey sent in 2016 a year after Open Farm Day only to respondents who took the first survey in 2015. The second survey was sent to 196 individuals who responded to the first survey in 2015 and garnered a total of 65 responses for a response rate of 33.2 percent. Survey responses were tracked by name and email address to ensure there were no duplicate responses.

To isolate how attending Open Farm Day affected customers, these surveys asked visitors if they were a first-time Open Farm Day attendee or a repeat attendee. Results from the survey were analyzed by comparing “first-time attendees”, those that attended Open Farm Day for the first time when they took the survey, to “repeat attendees”. Standard means difference tests were used to analyze differences between these two groups. Results reported below that are “statistically significant” indicate that differences in data are unlikely to be due to chance.

In the first survey of aggregated responses from 2015 and 2016, 49.7 percent of respondents were first-time attendees and 50.3 percent were repeat attendees. Both first-time and repeat attendees showed strong support for local food with 86.3 and 88.6 percent respectively, reporting that they currently purchase local food. This difference was not statistically significant. There was also not a statistically significant difference between first-time and repeat attendees with the number of farms they purchased product from on Open Farm Day; on average, first-time attendees purchased product from 2.6 farms compared to 2.8 for repeat attendees. However, there was a statistically significant difference between the average number of farms that first-time and repeat attendees visited on Open Farm Day, which was 4.4 and 5.1, respectively.

There were other ways in which differences between first-time and repeat attendees were statistically significant. First-time attendees were statistically less likely to be familiar with farms they visited at Open Farm Day prior to the event with 58.8 percent reporting some familiarity with farms and 40.7 percent reporting no familiarity, compared to 83.7 percent and 14.7 percent of repeat attendees, respectively. First-time attendees also differed significantly from repeat attendees in purchasing product at Open Farm Day; 87.4 percent of first-time attendees purchased product from farms they visited compared to 93.5 percent of repeat attendees.

Visitors who made purchases at Open Farm Day are a critical group of customers contributing to event sales. Of the total visitors that purchased product at Open Farm Day, 40.1 percent reported that it was their first time making a purchase from at least one of the farms they visited. Examining those visitors that did make purchases at Open Farm Day, 66.4 percent were first-time attendees and 54.2 percent reported no familiarity with the farms they purchased product from prior to the event. Overall, 55.4 percent of first-time attendees that purchased product did so for the first time from a farm versus 25.8 percent of repeat attendees. This means that 43.9 percent of first-time attendees and 74.1 percent of repeat attendees that purchased product were repeat customers to farms. These differences were statistically significant.

First-time and repeat attendees reported similar levels of satisfaction with Open Farm Day. In ranking their experience with Open Farm Day on a scale from one to five with one being “strongly disagree” and five being “strongly agree”, first-time and repeat attendees rated their experience a 4.76 and 4.74, respectively. However, there was a statistically significant different between first-time and repeat attendees when asked if they intended to return to Open Farm Day the following year. Only 86.3 percent of first-time attendees reported they intended to attend Open Farm Day next year versus 95.6 percent of repeat attendees.

These surveys show that there are significant differences between first-time and repeat customers who attend on-farm special events. Repeat attendees are more likely to purchase product, more likely to already be familiar with farms and have purchased product from them, and are more likely to report they will attend the same on-farm special event again. First-time customers reported high satisfaction with the event, reported visiting farms they were not previously familiar with, and were more likely than repeat customers to make first-time purchases at the event. However, first-time attendees were less likely than repeat attendees to report intent to attend Open Farm Day in the following year. Overall, both repeat and first-time customers said they learned about new farms and farms products at Open Farm Day, demonstrating that on-farm events are a good marketing tactic for farms to increase awareness about their products.

Based on customer responses, on-farm special events also have great sales potential. Farms that offer product for sale at these events can see strong day-of sales, as evidenced by around 90 percent of survey respondents reporting buying product at Open Farm Day. Also, Open Farm Day gained farms many new customers the day of the event considering that first-time attendees that also purchased product for the first time, which was 55.4 percent of first-time attendees, represent a group of truly new customers. On-farm special events can encourage repeat customers to increase purchases that they otherwise may not have made if not for the event, which makes on-farm special events a great way to retain the interest of loyal customers. It should also be noted that 25.8 percent of repeat Open Farm Day attendees...
Learning from the Best

Good news for farmers – there are new resources available to improve human resource skills on farms in New York.

by Kat McCarthy

What do Wegmans, a regional grocery store chain, and Salesforce, a software company, have in common? These two organizations both have held places on the FORTUNE 100 Best Companies to Work For® list, and have stories to share that can help you on your farm. Does your farm resemble either of these enterprises? Perhaps you are already focused on learning from others who excel at what they do. Or maybe you would be surprised to learn that your business has more in common with these enterprises than you realize. And possibly, there are one or two tips that you can pick up from how these organizations manage staff.

Having held a position on the FORTUNE 100 Best Companies to Work For® list for the past 20 years, Wegmans Food Markets, Inc. understands the value of professional development and employee empowerment. Staff are offered training opportunities to do their job well, including access to department universities, online resources, workshops, on-the-job training, and more. The company has also enacted programs to listen to employee feedback about strategies for continual improvement. Since front-line employees interact directly with customers, they have different perspectives from managers. Insight shared by these individuals can help improve customer relations and operational efficiency while creating a culture where all employees feel like their ideas matter.

Farms looking to gain long-term customers from hosting on-farm special events should have clear plans in advance as to how they use their event to convert first-time customers into repeat customers. One way farms can do this is by offering incentives to event attendees to visit again, such as discounts on future purchases. Farms should also promote their sales channels at events so that attendees know where to buy product in the future if they do not live close to the farm. This could include farmers markets, local farm stores, or online sales. Any farm hosting an on-farm event should use them as an opportunity to collect customer email addresses to have a way to market to customers in the future. Staying in contact with attendees is critical to maintaining their interest in the farm post-event.

Hosting on-farm events are an excellent marketing tool for farms, but farms should have realistic expectations about how they contribute to customer attraction and retention. From a marketing perspective, gaining and retaining customers are two different objectives. Gaining customers typically requires more resources than retaining existing customers. On-farm events can be a way to keep loyal customers and encourage them to increase their farm purchases. Farms can gain new customers at on-farm events from day-of sales, but to keep them coming back as long-term customers farms should view on-farm events as part of a larger marketing strategy.

This research is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number ONE15-229.

Marie Anselm is the Agriculture Economic Development Specialist for Cornell Cooperative Extension Ontario County where she can be reached at ma882@cornell.edu. She enjoys being able to meet and work with so many diverse farm operations as part of her work supporting New York state agriculture.

More information on this study, including a fact sheet with full result charts and a recorded presentation are available at http://ccejontario.org/agriculture/ag-economic-development/agritourism-resources.
SOIL HEALTH

Building Healthy Pasture Soils

by Lee Rinehart, NCAT Program Specialist

The following article is an excerpt from the factsheet “Building Healthy Pasture Soils” available in full at www.ATTRA.org and can be downloaded as a free PDF at the website, along with many other guides and resources.

Let’s consider the agricultural practices that help build healthy soil. In essence, we want to increase aggregation, contribute soil organic matter, increase biodiversity, buffer soil temperature, and minimize soil compaction and disturbance. Sounds like a lot, right? Well, not really, if we break them down into six basic principles. Let’s take a quick look at the principles that will define our soil management practices for grazing.

Minimizing tillage preserves soil structure, encourages aggregation, and keeps soil carbon in the soil profile where it belongs. Tillage brings a flush of oxygen into the soil that spurs microbes into a feeding frenzy on carbon molecules, resulting in CO₂ release. We reduce tillage through the use of perennial pasture and minimum or no-till of cover crops.

Maintaining living roots in the soil for as much of the year as possible feeds soil microorganisms all year.

Also, by maintaining living roots and leaving grazing residual, we are covering the soil all year, forming an “armor” to protect it from loss of moisture and nutrients.

Maintaining species diversity is achieved with cover crop mixes and the use of diverse perennial-pasture mixes. Try to incorporate warm-season and cool-season plants, both grasses and broadleaf plants, in the same fields.

Learning from 13 business goals and progress so that all staff can understand how they contribute towards the company’s success.

At this point, you may be asking, how does this all relate to a farm business? While the enterprises are different, some of these lessons learned can be translated to farms. For example, are training programs in place at your farm to orient new employees? Is there a process to actively solicit and implement feedback from staff? These simple actions can go a long way to building a culture where employees feel confident in their work and that their contributions matter. Does your business conduct annual reviews for staff, or have another way to share feedback about performance? Establishing a formal system can help recognize positive behavior and offer a strategy to correct issues before they become chronic problems.

If you pursued a career in farming, it’s likely your passion lies in aspects of production, being outdoors, or supporting the local food system. And it’s significantly less likely that you pursued this career so that you could become an expert in human resources. But as you rise through the ranks and seek new challenges and professional growth opportunities, you may find yourself managing staff. Considering the importance of labor on farms, managers play a key role in overseeing crews to effectively and efficiently accomplish tasks. And we have good news. There is now a growing body of resources available to New York farmers who want to improve their business through enhancing skills in management.

Richard Stup, Cornell’s Agricultural Workforce Specialist was recently hired to address challenges facing the agricultural industry through educational programs and applied research. Visit the Cornell Agriculture Workforce Development website (http://agworkforce.cals.cornell.edu/) to learn more about management and leadership on farms. While there, you can also sign-up to the news post “The Ag Workforce Journal,” which provides regular articles on relevant topics.

In August 2017, a Labor Ready Farmer project was also launched to support beginning farmers and Latino agricultural employees as they seek to gain and improve managerial skills. Recently, a 20 Minute Farm Manager webinar series was hosted, covering a range of topics, including creating a culture to attract employees, developing staff handbooks, writing job descriptions, understanding risks, and hiring, reviewing, and motivating employees. While the series took place live from April 2 through April 11, these webinars are available online to watch at your convenience. Many of the topics relate to some of the lessons we can learn from the FORTUNE 100 companies. More information on this project can be found online at: http://smallfarms.cornell.edu/projects/labor-ready-farmer/

Cornell Cooperative Extension’s Eastern New York Commercial Hort Team and the Cornell Farmworker Program have also developed materials through a grant from NERME and USDA RMA. As a component of the project, “Good to Great in Ag Labor Management,” the team hosted workshops for farmers across New York State on managerial skills. Resources and information from this project are available on the Facebook page www.facebook.com/CCEAgLabor and on the Eastern NY Commercial Hort

Managing grazing is accomplished by planning for an appropriate grazing-recovery period on your paddocks, keeping in mind that plants need various recovery periods depending on the species, the time of year, and the soil moisture content. Overgrazing (not allowing adequate recovery) reduces root mass, photosynthesis, and the amount of carbon sequestered into the soil, decreasing soil life. Proper grazing builds soil.

Finally, utilizing animal impact and grazing impact provides nutrient cycling in pastures, and contributes to soil organic matter. Additionally, the grazing action on forage plants encourages root growth and root exudation of plant sugars that feed soil microorganisms.

For livestock producers, this boils down to a combination of perennial pasture, cover crops in rotation on annual fields, and good grazing management. These simple concepts are described by ranchers Allen Williams, Gabe Brown, and Neil Dennis in a short video on how grazing management and cover crops can regenerate soils. View the video Soil Carbon Cowboys to get their take on soil health practices: https://vimeo.com/80518559.

Grazing Dynamics

Perennial pastures, because of the lack of soil disturbance and their permanent cover, are higher in carbon and organic matter than tilled crop fields. This biological system has a stable habitat to conduct business, and the nutrient cycles can sustain themselves. However, we know that by adding livestock to the mix, we get a multiplier effect on soil health.

The impact of grazing is known to increase soil carbon and nitrogen stocks. As an animal grazes, it sends a signal to the plant to pump out sugars through its roots and into the surrounding soil, or rhizosphere. Root exudates, which are sugars developed by the plant through photosynthesis, are food sources for myriad microorganisms in the soil. The action of grazing jump-starts the soil food web and increases nutrient cycling, making nitrogen, phosphorus, and carbon available to the growing plants.

Walt Davis, a rancher and management consultant, puts it this way: “Grazed forage pumps root exudates (mostly carbohydrates) out into the area around their feeder roots; this...
to three days. Grazing periods of a day or less, especially with high animal density, provide uniform grazing and efficient manure distribution. High stock density builds soil.

It’s important to maintain an adequate post-grazing residual forage height for photosynthesis and the recovery of carbon and nitrogen stocks. Remember that severe defoliation decreases car- bon and nitrogen over time. A good grazing pol- icy is to take half and leave half. This feeds both our livestock and soil microbes, resulting in less added fertilizers.

Remember: Managed grazing with ade- quate residual heights encourages soil ag- gregation, which is compromised with poorly stocked grazing. Situations that result in overgrazing...
Chainsaw Safety, Part 4: Reducing the Risk of Chainsaw Kickback
(Just say No to Kickback!)

by Rich Taber, CCE Chenango

In the first three articles of this series on chainsaw safety we focused on having the right types of safety equipment when using chainsaws. It is imperative to have all of the right OSHA (Occupational Safety and Health Administration) approved safety features when you or your employees use chainsaws. In this article, we will look at how to prevent kickback injuries, one of the most common ways that chainsaw injuries occur. What is kickback? It happens when the top front tip of the chainsaw bar hits an object, and ‘kicks back’, oftentimes hitting the operator and causing either death or grievous bodily harm.

I speak from experience. In the fall of 1983 I was out in my farmyard cutting firewood with a fairly new chainsaw but it did not have a chain brake installed on it. I pointed the tip of the bar at a chunk of wood to see if oil was coming onto the blade, when for a millisecond it hit said chunk of wood and kicked back into my face and upper left shoulder, for which some stitches and a period of convalescence ensued.

I would still have been hit, but the chain would not have kicked back into my face and upper left shoulder, for which I still bear those scars to this day. If it had had a chain brake installed on it. I pointed the tip of the chainsaw bar hits an object, and ‘kicks back’, oftentimes hitting the operator and causing either death or grievous bodily harm.

Select a chain saw that is equipped with kickback-reducing devices (e.g., chain brake, low kickback saw chain or reduced kickback saw chain) that are designed for the chain saw that you are using and meet OSHA standards. These devices will reduce but will not prevent kickback.

Watch the guide bar nose. Do not let it touch logs, branches, or the ground when the saw is running. The majority of chainsaw accidents come from kickback.

Run the saw at full power when cutting, and keep the chain sharpened to specifications (e.g., correct depth and angle). Matching the chain and bar for exact and correct pitch and gauge is imperative, and set depth gauges to manufacturer’s settings. Maintain correct chain tension as shown in the last edition of SFQ. Hold the saw securely with both hands. Have one hand on the handle bar and the other on the grip or trigger, and do not operate the saw left handed, as the blade will hit you directly with kickback if you do so.

Ensure that you have firm footing before starting to saw, and stand to side of the cutting path of the chain saw. Also, position yourself so that you are not near the cutting attachment when the chain saw is running. Knowing where the bar tip is at all times is crucial. Make sure the chain brake functions and adequately stops the chain. The stopping power of a chain brake can be greatly reduced by wear, or by oil, dirt or sawdust in the brake parts. DO NOT USE A CHAINSAW IF IT DOES NOT HAVE A CHAIN BRAKE! Sometimes installing a safety tip that covers the nose of the guide bar on the saw helps to prevent contact with the kickback zone. The tip must be removed for making bore cuts (pocket cuts) or for cutting wood thicker than the length of the guide bar. Always wear the required personal protective equipment!

As has been mentioned in previous articles, attendance at one of the “Game of Logging” sessions can provide you and your employees with the proper training in the use of chainsaws. Keep the tip of the moving bar away from any object!

Rich Taber, M.S./M.S.F., is with CCE Chenango and also farms in Madison County, and can be reached at 607-334-5841 ext. 21 or email: rbt44@cornell.edu.

RESOURCE SPOTLIGHT

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Tracking Farm Hazards with Farm MAPPER

by Matthew Alfultis

In the event of an emergency, farming operations can be a challenge for first responders due to the size of each operation and the unique risks they pose, which can vary from farm to farm. With the average farm spanning 444 acres, it can be difficult to navigate personnel to an exact location. Imagine trying to guide a response team past hazardous materials, animals, weight-limited bridges and unmarked paths. Farm MAPPER, a component of the Rural Firefighters Delivering Agricultural Safety and Health (RFDASH) project at the National Farm Medicine Center, addresses this issue by providing an overhead view of the farm; allowing first responders to become familiar with the operation on scene.

The way Farm MAPPER works is simple. Participants can register their farm through the website by setting up an account with an email address and password. Through the site, they can pull up an aerial view of the farm and place pins to mark certain hazards. There are markers for structures such as power and gas cut offs, access roads, water sources, animal pens, hazardous materials and much more. Just about anything on farm can be mapped with the software, which can then be viewed by first responders trying to navigate a farm operation. Once the map is complete, it is stored on the National Farm Medicine Center’s secure servers where it can only be accessed by the farmer.

Dr. Matt Keifer, Professor at the University of Washington, originally paired with Jerry Minor, Chief of the Pittsville Fire Department, in 2013 to create Farm MAPPER. The original concept revolved around scanning QR codes, or quick response codes, to access data saved on them. Once first responders arrived on scene, scanning the linked code would bring up the map of the farm created through the website. Compatible with smartphones and tablets, it was a versatile option that responders can easily utilize. With immediate access to a map of the farm, first responders were able to preplan an operation on scene. This was the intent of Dr. Keifer, who wanted to “put into the hands of fire-fighters a map of the hazards to prepare for and necessary equipment to bring.”

With agricultural businesses posing the same dangers to first responders as commercial ones, like harmful chemicals and confined spaces, this foreknowledge allows them to plan for what is present on scene. Agricultural emergencies are made even more dangerous by the lack of planning materials and therefore overall unfamiliarity among first responders. Combined with a lower frequency of occurrence, this lack of planning makes responses to a farm high-risk for injury. Chief Jerry Minor explained, “Most firefighters are not prepared for these emergencies because they just don’t happen every day.” When drilling with Farm MAPPER, pre-planning is possible and allows first responders to become acquainted with the farm, landscape and location of hazards on scene. In a time where many first responders are not aware of the dangers on farms, the application helps keep both first responders and farm workers safe by allowing them to understand what they are getting involved with.

Since the original application launched, Farm MAPPER has updated to be more accessible through a web-based system. Through the website, farmers or first responders can pull up the farm map on route to the emergency instead of having to wait for arrival on scene. When time is everything in a response, this new advancement helps immediately direct necessary aid to a specific location. Dr. Casper Bendixsen and Kate Barnes of the National Farm Medicine Center are also testing other additions to the software, most notably augmented reality. When used, first responders could use their phone or tablet as a 360-degree lens to view where hazards are located in real time. Instead of looking over a large map of the farm, it would show them what is immediately in front of them and a more precise direction on where they need to go. Along with that, they hope to incorporate the use of QR codes to hold important documents such as schematics for equipment or training videos. This could allow for disassembling a piece of equipment someone is stuck in, or provide safety training to an employee unfamiliar with farming operations.

In the future, each of these aspects could be incorporated into all levels of a response. Officers could use the aerial view to direct resources on scene while first responders navigate on scene using the augmented reality to locate where the emergency is. Once they arrive at the incident, responders can utilize QR codes pull up any pertinent information about a piece of equipment involved.

If you are interested in signing up for the See MAPPER page 18
Managing Small Woodlot Parcels

by Peter Smallidge

In New York and most of the Eastern states, the greatest proportion of woodland owners have relatively small parcels. A “small” parcel size is not defined, but often considered to be less than 10 acres, or less than 50 acres. The USDA National Woodland Owner Survey (NWOS) offers a feature to make tables and charts about owner attributes and intentions (Google search “nwos table maker”). The NWOS data for NY indicates that 62% of owners have parcels less than 9 acres and 28% of owners have parcels that are 10 to 49 acres. The average parcel size is 18.3 acres. The 90% of owners with parcels less than 50 acres collectively control about 42% of the woodlands.

Small is perhaps best defined, from the owner’s perspective, relative to what the owner wants to accomplish. From that perspective, a parcel might be too small, or not. Statewide however, 13% of owners with parcels less than 49 acres have had commercial harvests, 4% of those with parcels less than 10 acres have had a commercial harvest.

These small-parcel owners want to be active on their land, but are challenged by the scale of operations. As parcel sizes decrease, the feasibility for commercial activity also decreases, but there are still options.

The challenges of extracting woodland products, especially sawlogs or firewood, relate to the costs to the logger or forester of operations versus the benefit or value obtained from those products. The fixed costs include, for example, those associated with moving equipment, building landings for log trucks, arranging for log trucks, and in some communities town or municipal permits.

(Figure 1) Another fixed cost is the opportunity cost of harvesting a small parcel with the time to coordinate and execute the harvest, rather than setting up on a larger parcel that will provide a greater volume and value. Variable costs, or those that differ among harvests, might be less or greater on small parcels. On small parcels the skidding distance will be less and thus a reduced cost. However, there will be fewer options for landings, and a higher percentage of the harvest area adjacent to neighbors. Thus, as parcel sizes get smaller, the cost of operations on a per acre basis increases. For a business (logging is ultimate a business) to justify operating on a parcel, the value must be greater than the cost.

Woodland owners with small parcels may be placed in a compromized position given the need for value to exceed cost. Some owners will decide to take no action because the changes in their woodlands would be too substantial. Owners who need to have some management applied, such as for forest health or forest products, need to find strategies to have the work done, but without overly excessive harvesting that could nullify the owner’s objectives.

There are two paths an owner might take. Any given owner or might take one or the other at different times for different circumstances. For lack of better terms, these paths are “Do it Yourself” (DIY) and “commercial.”

Regardless of the path an owner pursues, a forester should be involved in the planning, design and oversight of the activities. Because of the smaller area and likely lower values as compared to larger parcels, foresters might be more inclined to charge a flat rate rather than percentage of the harvest value. Foresters will also know the loggers who work in an area and who might have a business strategy with lower costs than other loggers. Owners should start with a DEC (Department of Environmental Conservation) public service forester, but may ultimately need to select a private-sector forester from a list provided by the DEC.

The DIY option requires that the owner or the owner’s friends have the necessary equipment, skill with that equipment, time and motivation. These are real investments and easy to underestimate. However, many owners thrive on the type of activity, or have friends who do. This option effectively reduces the costs by excluding or reducing the need to transport equipment, pay salaries, and pay overhead. Owners should be aware that their investment of time has value because they could be doing something else that might be more important or more productive.

Time and motivation are important, but if their availability is overestimated the consequences may not have great consequence. However, overestimating the skill or appropriate equipment for the task could result in personal injury, death, or damage to the woods. Of particular note is the essential need to be able to use directional felling techniques when cutting trees. Also, having the right equipment to maneuver in the woods and extract the size and quantity of logs being harvested. Another reality is that the DIY small-scale logging is hard and slow work. The equipment can’t move large quantities of wood (Figure 2). It is typically impractical to move commercial volumes of wood with small-scale equipment.

The DIY path results in logs at the disposal of the woodland owner. The owner may be able to process the logs for firewood, hire a portable bandsaw to make boards for sale, or sell the logs roadside. Each of these processes includes additional effort for the owner, and as regards the sale of products may increase the owner’s tax liability.
Managing from page 18

Skill and the correct equipment are essential. At a minimum, anyone felling trees should have training, such as Game of Logging, to directionally fell trees. The details of the topography, soils, season, and size of trees will determine the minimum types of equipment that are needed. Video of small-scale logging are available at www.youtube.com/Forest-Connect and in the discussion forum at www.CornellForestConnect.ning.com

The commercial path requires that the owner find some way to change the cost-to-value ratio. This could be through either an increase in the value or volume of wood harvested, or reducing the cost per unit of wood harvested. Increasing value might be accomplished as increasing total value, total volume, or the value per unit.

One strategy to change the cost-to-value ratio is through a more intensive harvest on the property, or focusing on just the high-value trees. Either of these approaches could be counter to the owner’s objectives, is exploitive, and could degrade the condition of the woods. The forester needs to know the owner’s objectives and be instructed to not compromise those objectives.

A second strategy is for the owner to work with another landowner, ideally a neighbor, to increase the total value and volume, and also reduce the cost per acre (Figure 3). Each owner could have different objectives, and require harvests based on different silvicultural prescriptions and different harvest intensity. Although easily said, the feasibility is low for finding a neighbor who is ready to harvest at the same, and use the same forester and logger. A similar strategy would be for the owner to join a woodland cooperative, but cooperatives are rare.

The challenges to managing small parcels are daunting. In some cases the owners may decide that a harvest isn’t feasible. If the final goal is to manipulate the trees that are present to create better wildlife habitat, improve forest health, or improve tree growth for bigger trees there are non-harvest options that the owner could discuss with their forester.

One such option might be the use of selective herbicides or mechanical girdling to kill some trees and allow adjacent trees better growth. In all cases, the owner needs to have a clear awareness of their objectives to avoid the potential pitfalls of the management strategies they pursue.

Peter Smallidge, NYS Extension Forester and Director, Arnot Teaching and Research Forest, Department of Natural Resources, Cornell University Cooperative Extension, Ithaca, NY 14853.

Support for ForestConnect is provided by the Cornell University College of Agriculture and Life Sciences and USDA NIFA.
Quality of winter forage for grass-fed sheep

by Ulf Kintzel

Feeding hay in the winter is in many parts a reality in the Northeast. You will hear often these days that the best way to deal with hay in a grass-fed operation is to rid yourself of hay feeding and graze stockpiled forage instead. In my view it is true that extending the grazing season is a good and desirable goal and should be an aim for anyone. Well-managed pasture will almost always be better for the sheep than stored forage. Besides, it is likely to be cheaper as well.

However, in some areas of the Northeast there are limits to how long you can graze into the winter. If you are trying to extend the grazing season, please ask yourself to what end. Wanting to extend grazing season cannot be a goal in itself. You are doing yourself no favor if you can show pretty pictures of your sheep in deep snow, claiming they still graze, when the energy used to get to the grass and to keep warm when the wind blows, and the temperatures are very low. That means that in many parts of the Northeast, feeding hay during a certain period will be the better option to wanting to extend grazing even more. My hay feeding period starts about early to mid-January and ends when the grass grows in the spring and the sheep have lambed and are no longer in the barn. That is usually early to mid-April, which means my hay feeding time lasts about 100 days in most years.

Before I start discussing the quality of the hay I am seeking, you may have noticed by now that I have not said forage. You may ask by now “What about baleage or haylage”? If you can make quality baleage, go for it. Just note that any mold in haylage has killed many sheep over the years by causing listeriosis, also called circling disease. Sheep are quite sensitive to mold in baleage. In addition, once a sheep catches listeriosis, there is next to no way to save it. For that reason and for reasons that just fit my management system better, I have stuck to dry hay.

Most of my hay is made at my farm. It is custom-hayed by my neighbor Peter. I like to get the first cutting made as early as possible. In some years this may be still late May, in most years it will be made during the first week of June. In any event, I like to have that first-cutting hay made before the orchard grass blooms. There are two problems with that: First, the weather is not that stable yet in most years in early June. Mid to late June brings much better hay making weather. Secondly, the yield is still lower than it could be. These two reasons keep many to cut the grass in late May and early June. However, that is the one of the best quality hay you can make. It is not only high in protein. It is also high in energy. Which leads me to the next issue.

Many times, when I am asked about the quality of hay, I am asked what protein content I am seeking. I am very dismissive of needing to know about the protein. If your hay was cut at a palatable stage and didn’t receive rain while drying, chances are that the protein content is high enough any given time of the year no matter what your hay field consists of. I know this is a bold statement, but I stand by it. Besides, one third of the protein a sheep receives, it receives from rumen bacteria that die off. These bacteria feed on celluloses.

What is important in hay is energy. Energy keeps you warm. Energy keeps you fat. Most of the winter you need exactly that for maintenance. However, the energy content in hay varies greatly throughout the year. Early cut hay has a lot of energy, both in the form of sugar and celluloses and very little in the undesired form of lignin. Second-cutting that grew in the months of June, July, and August has a good energy content as well. However, once the fall-flush starts, grass is low on energy. The nicest looking hay is the one that grew mostly in September and was made in September and October, which is often third cutting. Do they distinguish at hay auctions between second and third cutting when the hay is sold? Around here, they often don’t. Of course, if most of your grass grew during the summer months when you cut a field in September, the fall flush will increase your protein content while your hay still has a high energy content. So, you get to have it both ways.

One factor that greatly reduces energy content is rain. Rain washes out the highly soluble sugars. Getting a tenth of an inch of rain is one thing. But if you get a good shower in your hay it will reduce the quality tremendously. Hay that has received a steady rain, especially when it was close to getting dry, becomes useless for feeding purpose. This hay becomes bedding.

Another advantage of early-cut first-cutting hay is palatability. You want the sheep to want to eat it and you want them to eat a lot of it! Hay cut late with lots of stems has an increased amount of lignin. Lignin reduces intake. The importance of palatability cannot be overstated.

When I have my ewes in the barn and feed first and second cutting hay side by side, I am always amazed how much more they like the first cutting. Yet, I need some second-cutting, usually cut in late August or very early September, to feed my ewes in the jugs and for when the lambs start eating, which requires a very soft hay.

The exception to all the above is alfalfa. I am not experienced enough with alfalfa to give other people advice. I have been told that the energy content is high throughout the year. It is certainly a great feed, but it does not fit into a sheep-grazing enterprise since it does not take grazing well. Therefore, I have not been seeking it. If you make quality alfalfa hay, go for it. You can’t go wrong with it.

Alfalfa leads me to the last topic. I am often asked if certain forages aren’t too rich for sheep. There is no such thing as forage being “too rich”. Remember, you are replacing grain, which is always “richer” than any forage. However, your sheep can get Enterotoxemia when your forage is very good, regardless of whether it is grazed or stored forage. Enterotoxemia is better known as Overeating Disease, also known as Sudden Death Disease and Pulpy Kidney Disease in lambs. You can vaccinate against it with readily-available vaccines like Bar-Vac CD/T. (The T stands for tetanus, you might as well vaccinate against that one, too). You vaccinate the lambs twice with three to four weeks in between shots and the adult sheep get a booster shot once a year.

There are a couple more things worth pointing out. At times, when I run out of hay made at my farm, I go to one of the many hay auctions that we have around. I am blessed that we have them here. There are a couple of mistakes that I detect time and again that must be watched when making and storing hay. First, a lot of grass is cut too low when hay is made. I asked my hay guy Peter to set the mower as high as possible. Nothing, absolutely nothing is gained when cutting low, but a lot is lost. The forage closest to the ground has no quality. When you cut too low, your hay field needs more time to grow back. What you do get with low cutting is dirt or soil in the hay. The official name is ash. While ash is of course the mineral content of hay, it also includes dirt and soil. Ash reduces intake!

The second mistake in making hay is getting dust or mold in it. I am always baffled when I buy hay that clearly was made at the right time and without rain but then was stored on the dirt barn floor, drawing up moisture, which leads to dust and mold. That too leads to reduced quality and reduced intake and can even cause some health problems. I put all my hay in the barn and set it on pallets or skids and other bales stacked on top. That does not exclude that the hay draws up moisture entirely, but it surely reduces it a great deal.

Lastly, the feeding method is important. When I feed hay in the winter, I feed it free-choice. My sheep are never without hay. I don’t make them eat cleanly. Stems are used for bedding or, applying to the hay fed in the pasture, spread out as fertilizer. I make access in feeders easy, which often requires that I turn the bale in the feeder upside down when it is half-eaten, which makes the good parts easily accessable again. The feeders I am using are made from cattle or live-stock panels with staggered holes cut into them. Remember, you are trying to replace grain. That is no easy task.

In summary, I am seeking a very early-cut first-cutting dry hay without having received any rain, which washes out sugars. Such hay is high in both protein and energy and is very palatable. Sheep love it. The second-cutting I have made, will be made in the summer months. No hay is being made in the fall from grass that grew only during the fall flush. That growth will be pastured, or stock-piled and grazed later in late fall or early winter. Grass with lower energy content will increase its energy content again when the days get cooler and at the onset of some frost.

Ulf owns and operates White Clover Sheep Farm and breeds and raises grass-fed White Dorper sheep and Kiko goats without any grain feeding and offers breeding stock suitable for grazing. He is a native of Germany and lives in the U.S. since 1995. He farms in the Finger Lakes area in upstate New York. His website address is www.whiteclover-sheepfarm.com. He can be reached by e-mail at ulf@whiteclover-sheepfarm.com or by phone during “callling hour” specified on his answering machine at 585-554-3313.

This hay was cut June 3 and is of great quality for grass-fed sheep.