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Animal Welfare: Perception & Reality

by Kimberley Morrill, PhD

Do you think cows have emotions? Do you think cows feel pain? Do animals exhibit empathy, sympathy and compassion? These were the questions asked to the attendees of the 2018 Dairy Cattle Welfare Symposium. Speakers, farmers and industry representatives from around the globe gathered in Scottsdale, AZ May 31st – June 1st, 2018 to discuss the intersection of best practices and sustainability as it ties back to dairy cattle welfare.

Currently, Americans care more about animal welfare than children’s education or hunger. Those are the results of the third “Causes Americans Care About” study, conducted by the global communications firm Ketchum. Responses from 1,000 adults found 41% picked animal welfare as their number one cause. Children’s education ranked second with 38% of respondents, followed by hunger with 33% of respondents. Why should we (dairy educators, dairy farmers and industry support) care or worry about this? Because these are our consumers. We need to know what their concerns are, and how to address them. We also need to be honest about the day-to-day management practices that occur in animal production.

Some of our best management practices might not always be “pretty” visually to a consumer but it is what is best for the animal. An example of this would be hoof trimming. In early July social media was abuzz with a picture of a “cow crusher”. What was happening to this poor cow? Very simple, she was having her feet trimmed in a hoof trimming shoot - a very common and safe practice. She was being restrained and properly taken care of. To anyone with an agricultural background, a picture of a cow in a hoof trimming shoot is just that, to someone in the general public, it is a scary looking picture. We need to take the time to explain what is occurring, in terms the general public understand – the cow is receiving a pedicure, 1800 pound animals don’t fit well into salon chairs, and sometimes they get a little finicky and kick. For the safety of the animal and the person, she is restrained.

More and more consumers only see the dairy industry through pictures online. Mandi McLeod from New Zealand presented on “lessons learned”. Farmers (regardless of country) are 1. focused on producing food in a continually changing climate in a sustainable manner and 2. At risk of being pulled down by the minority (ie: 1 bad egg, 1 farmer who doesn’t care). Consumers have concerns, as stated above about animal welfare. So, how can we win the war and show consumers that we care, and do the best to take care of our animals? Incremental improvements over time.

1. Seek to understand, and then be understood
2. Listen to the concerns. LISTEN. Don’t just respond or react. Listen to understand and then address their concern.
3. Animal care programs must treat all farmers fairly by taking into account the landscape in which they operate. These programs need to be realistic with minimum standards and unapologetic in accountablity and consequences. As an industry we should be raising the bar and raising our compliance rates, not the other way around.

At the end of the day, we, the dairy industry, are only as good as the weakest link. We all play a role in animal welfare. Yes, we are dealing with market vulnerability and low milk prices, but is this an acceptable excuse for poor animal care? NO.

See Animal page 3
Cornell Small Farms Program Update

Registration Open 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-S5HA950

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.

Upcoming Courses Include:
- BF 120: Veggie Farming 1 – From Planting to Harvesting
- BF 122: Berry Production
- BF 130: Poultry Production
- BF 138: Getting Started with Pastured Pigs
- BF 152: Introduction to Maple Syrup Production

Visit http://smallfarms.cornell.edu/online-courses/ for the list of all courses and their starting dates.

A Retrospect on the Baskets to Pallets Cohort Opening Gathering

On August 7 and 8, Small Farms’ own Violet Stone convened the inaugural gathering of the new Baskets to Pallets educator cohort. In this post, Violet shares a retrospective on who the new cohort is and the work they plan to do over the next two years.

Last week, I was happy to find myself out of my office chair and seated instead in the light-filled Loft space at the Carriage House Cafe with 15 educators and farmers from all over the state. Most of the members of our new Baskets to Pallets cohort hadn’t met before, so we were excited to spend the morning getting to know each other’s passions, interests and niches within the food system. The group then turned focus toward its mission – to facilitate access to new market channels for farmers interested in entering “intermediate” venues such as food hubs, grocery stores, restaurants and cooperatives.

The cohort will support farmers and producers who are experiencing cooling trends in direct markets such as farmers markets, community supported agriculture (CSA) operations and farm stands. The group will help farmers successfully enter intermediate channels.

We launched into our work together by looking at big market trends such as the rapid acceleration of online grocery sales and consumer’s growing preferences for local, fresh food. Big trends affect sales for farmers on the ground, and we want to stay abreast of how the food scene is changing and how we can advise farmers to take advantage of new opportunities. Then, we reflected more personally on the marketing challenges and opportunities we were each observing in the regions where we work. Yes, the data tells us that local food is big and in growing demand, but local reports confirm it’s challenging to get small products to big markets and we have plenty of work ahead in getting farmers ready for wholesale and connecting them to scale-appropriate markets.

We rounded out our gathering by talking with buyers from throughout the Northeast. Conversations with staff at Headwater Food Hub, Red Tomato and Honest Weight Food Cooperative shed some perspectives on what buyers do and don’t need to have successful business relationships with farmers. Strong communication skills came up across the board, but not all buyers required GAPs/food safety certifications or had hard and fast requirements regarding grading/sorting/packaging. In summary, every buyer is unique and most of the success lies in finding the right producer/buyer match and building a relationship. As educators serving in the Baskets to Pallets cohort, we hope to help farmers navigate potential buyers and support steps toward wholesale success. That might mean supporting a producer in achieving better uniformity and consistency, food safety standards, grading, packaging, labeling, or whatever steps are needed to find success in intermediate markets.

So, what’s next for the cohort? We’ll be creating new educational content throughout the Fall in preparation for two regional Baskets to Pallets farmer trainings to take place during the winter months.

Do you have any feedback or ideas for our group? We’d love to hear from you. Reach out to Project Coordinator Violet Stone at ws7@cornell.edu or visit the project website.

FarmOPS to support AgTherapy for Veterans pilot project

The VA Medical Canandaigua VA Medical Center has received an $844,000 grant from the Office of Rural Health to provide therapeutic horticulture and agricultural training to veterans interested in ag vocations as part of VA’s Whole Health Initiative. The grant will expand the medical center’s partnership with EquiCenter of Mendon, a nonprofit facility serving those with disabilities, veterans and at-risk youth. The Canandaigua VA is one of 10 VA medical centers across the country to get a grant. FarmOPS will continue their educational support for the VA’s AgTherapy programs, and are in negotiations to significantly increase the training offerings in that part of the state for veterans interested in agriculture.

Go to www.equicenterny.org/farm for more information on the program, or contact Dean at drk5@cornell.edu for Farm OPS details.

From Animal page 2

Dairy farmers are all human, and have different belief systems and different opinions. We need to approach animal welfare and best management practices as a team sport. We cannot continue to defend the indefensible. We need to work together with each other (dairy farmers, cooperatives, EVERYONE) to rethink the problem and challenges around animal welfare, both from a consumer’s view-point and a farmer’s view-point) and continue to develop an evolving approach. We cannot become complacent, but need to be open to new ideas and evolve as new management practices and technologies become available. As an industry, we have a collective responsibility to clearly identify the issue(s) and have a voice in the solution(s).

Kimberley Morrill is a dairy management specialist with Cornell Cooperative Extension North Country Regional Agriculture Team.
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Cover photo by Elizabeth Weller
Fall woodshed on the farm ready for a long winter.
Grazing Management

Rotational Grazing: How often should I rotate?

by Ulf Kintzel

Failure in grass-fed sheep enterprises is still very common. I hear about it often since I am the one being asked why it failed. Among the many reasons why grass-fed sheep operation failed is the misconception of the frequency of pasture rotation. When breeding stock I have sold is picked up from my farm, the buyers often want to know how I do it. Some of these buyers who already have sheep are convinced they are doing rotational grazing. I follow up with the question, how often they rotate? Rarely do I hear a number between one and five days. Almost always do I hear about a rotational schedule of a week and more. It then comes to those folks’ surprise when I unambiguously state that this is not rotational grazing.

So, how do we define rotational grazing and what schedule for a pasture rotation is best? Let me start with the common misconception of rotational grazing. Some people have more than one grazing cell. Numbers may vary between two or three or four. They graze a cell down, which may take a week or two or even more and then they “rotate” the flock into the next pasture. The mere fact that the flock was rotated has some of those with whom I discuss the issue convinced they do rotational grazing. However, the fact that the flock was moved from one pasture to another does not constitute rotational grazing. The growing pattern of grass defines it.

When grass has been grazed, it starts regrowing after a certain number of days. At some point, this regrowth becomes desirable enough for sheep to be grazed again. The moment that occurs, the moment the flock was moved from one pasture to another does not constitute rotational grazing. The growing pattern of grass defines it.

Let’s start with the three to five-day rotation and let’s see what happens with each passing day of grazing that cell. The first day you let the sheep into the pasture, they will selectively graze what tastes best. On day two they are likely to still have plenty desirable plants to eat. On day three these plants are now scarce or gone and less desirable plants must be grazed. They will graze them, but intake is down. In addition, they will start taking down the desirable plants a little more, making it harder to leave enough residual – a key issue for successful grazing - in all places. Day four or five leaves only less desirable plants. While the sheep will now get a little hungrier and are more willing to eat them, intake is still down. Perhaps your grazing cell was so large, that this grazing pattern did not quite apply, that desirable plants lasted for three or four or even five days. That in turn means that undesirable plants were not eaten, and that animal pressure was not high enough. This would not be sustainable to maintain a pasture with predominantly desirable pasture species and it will most definitely not be sustainable if you are paying a mortgage and property taxes on the land you graze.

Once a day rotation means you have exactly the amount of forage in the pasture that the sheep should have that day while still leaving the desirable four inches of residual. Due to a higher grazing pressure, grazing is less selective. Undesirable plant species are eaten more willingly. It is a well-established fact. Being able to graze less desirable plant species is good since you utilize more of your pasture. Manure distribution is also more even. However, it is anything but easy to gage the right size of a grazing cell for just a day.

Some of you may also know rotational grazing under the name management-intensive grazing, or MIG. Jim Gerrish, a well-known advocate for this, takes credit for having coined that term. Those who know him or have listened to him will also know that he is not getting tired of pointing out that the “intensive” part of MIG refers entirely to the management and not at all to the grazing. After having practiced rotational grazing or MIG for decades, I can assure you that the management is indeed intensive. It is not simple and the wheels in your head will have to keep turning daily for as long as you practice this way of farming.

Since I had my exterior woven wire fence made it possible. I can clearly see the benefits - if any - is marginal for meat production, but the extra effort is anything but marginal. I have not found that extra effort beneficial enough to practice it. I continue doing a once daily rotation.

Research has conclusively shown that you get more production of your land when you rotate frequently. The amount of increased production is significant. So, focusing on management and rotating frequently has a real impact on the tonnage grown in your pasture, on the animals you can graze per acre, and therefore on your wallet. I encourage you to go for a two to three-day rotation and perhaps even for a daily rotation. It is well worth it.

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.whiteclosersheepfarm.com. He can be reached by e-mail at ulf@whiteclosersheepfarm.com or by phone during “calling hour” specified on his answering machine at 585-554-3313.
**Hay You! Should I Make My Hay or Buy It?**

by Rich Taber, CCE Chenango

As the haying season winds down across the northeast, I am left to ponder a primal question: should I keep on trying to make hay for my livestock every year, or buy it? Well, “the devil is in the details”, as the old saying goes. First off, I am going to state unequivocally that there is no correct “yes or no” answer, and your conclusions need to be made for your own specific situation. I will however, present to you some of the challenging requirements needed to successfully make hay, with its concomitantly huge amounts of time, money, cropping needs, and machinery procurement and maintenance.

I am also going to make some assumptions about the readers who would most benefit from this discussion. 1. The very title of this publication “Small Farm Quarterly” implies a smaller agricultural business that does not generate huge cash flows, such as the typical commercial dairy farm we see all over the Northeast. 2. You may be a new or beginning farmer and have decided to get livestock on your farm, and you need to figure out how to provide good quality feed for them. 3. You do not have huge amounts of money in reserve to finance the purchase and maintenance of all kinds of haying equipment. 4. You do have a certain amount of land on your property that does grow hay crops on it, and someone will need to do the haying. 5. You may work off the farm for a significant amount of hours, and may only have limited amounts of time to actually make hay in a timely manner. 6. Perhaps you do have some family help that could be used for the haying process. 7. You have not decided yet whether to grow hay crops on it, or make large round or square bales, or even wrapped baleage. 8. You will rotationally graze your animals for between 5 and 6 months of the year, and the forages that you need to acquire will be for the winter, or non-grazing months, which in many parts of the northeast seems to last eternally, for upwards of seven months out of the year.

So how much hay will you need? An easy thumb rule to follow is that for every 100 pounds of live animal body weight you will need about 3 pounds of dry hay per day. So, a 1200 lb. beef cow will need 36 pounds of dry hay a day; you can extrapolate this figure for all ruminant animals for planning purposes. Then take your grand total, and divide by 2,000 to get the number of tons that you may need. For planning purposes, let’s say that you have a 20-cow beef herd. Each cow weighs about 1200 pounds. Here’s the math: (12 x 3) x (20) x (a 200 day feeding season) = 72 tons of hay needed for the winter season.

Typical small square bales weigh about 35-40 pounds each. A typical 4 ft. x 4 ft. dry round bale weighs just less than 700 pounds. A wrapped wet bale of baleage, which contains the same amount of nutrients as the dry round bale, but has a lot more water in it, can weigh 1200 pounds. (Always figure your livestock nutritional needs on a dry basis for calculation purposes).

Diverging from the animal requirements, we will return to the issues of making hay. What equipment do you need to make hay? You will need the following: I will quote prices for good, used machinery, (not consignment auction junk either) as you probably won’t want to purchase new equipment; it can be absurdly expensive! If you can afford to buy new or newer equipment, more power to you! Just be careful about accumulating too much debt.

1. At least one good tractor. You will probably need this tractor for a myriad of other purposes on the farm, so the debate over having a tractor is moot, unless you are a draft animal powered farm. Generally, most people that make hay have two or three to handle all of the different operations in haying.

2. An older style mower-conditioner, (commonly called a haybine), or a more recent discbine, to mow the hay with. Haybines take considerably less horsepower to run, you can get by with about 50 horsepower. You need about 80 horsepower to run the typical 10 foot wide discbine. Expect to pay $1500-$15,000 for good used ones.

3. You will need a tedder to ted hay, soon after its mown, to spread it out, and to help it dry. Making dry hay in the northeast can be all but impossible in June, and in a year like this past one, really impossible, where it was dryer earlier on, and then it became quite wet and rainy through August. A good used two-row hay tedder can typically cost $1500-2000.

4. A rake to rake your hay: non-negotiable, you have to have one of these. A decent used one can be found for around $1500.

5. A baler to bale the hay. Will you go with small square bales, or large round bales, or even large square bales? Either way, good used balers of any type can be $10,000 more or less. I would recommend that you go with a round baler, as your labor requirements are much less. It never ceased to amaze me, back when I made small square bales as to how few friends I had during haying season, paid or not, that were available to help unload hay wagons. However, on the farm I always seemed to have enormous numbers of friends during deer season. The moral: labor can be an onerous issue in making hay.

6. If you are going to make small square bales, you have to have several decent hay wagons to bale into; these can easily cost $2000 each for good used ones. If you are making round bales, you need a decent wagon to load and haul them on, which can run about $4,000 (and not a rickety flatbed wagon made from an old Model A Ford running gear with bald tires). They’re loads of fun to be barreling down the highway with several tons of hay on it and they blow a tire or the frame falls apart! (So I’ve been told).

7. If you are making large round bales, you will need a tractor with a loader and a speer to handle the bales, and maybe a three-point-hitch one as well. Hopefully said tractor is a 4-wheel drive model, as 2-wheel drive tractors notoriously get stuck in muddy, snowy, mucky conditions, and usually only on Sundays or holidays when you have other plans. Or, you could use a “bale hugger” on your front-end loader if you need to handle wet bales of baleage, so that the plastic does not get ripped. They’re usually around $2000.

8. I almost forgot about the baleage wrapper, to wrap those wet bales in plastic. Anywhere from $5,000 to $25,000.

So, there you have it: and if you do all of the math, you may want to be sitting down from sticker shock if you add up all of the prices needed to procure haying machinery. What are we going to do? Shall we buy all of our hay? Decent quality hay can be purchased for anywhere from $25 a round bale, to upwards of $60 a bale for good quality baleage. Well, buying hay is a good option, but then what do we do with all of our hay land that we have on our properties, and we can’t afford to buy all this machinery?

Oh, the plot thickens, because not only do we need all of this machinery, we need to know how to maintain and repair it? Oh, you don’t like to get greasy and turn wrenches? You can hire a mechanic to come in and repair your machinery.

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**An example of rates for custom farm work, as prepared by CCE Franklin.**

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Book Review: Defending Beef: The Case for Sustainable Meat Production

by Hope Rainbow

In Defending Beef, author Nicolette Hahn Niman takes on no easy task: as the title suggests, this vegetarian cattle rancher seeks to exonerate beef from the many ills for which it’s blamed, both from ecological and nutritional perspectives. She anticipates every argument, dismissing everything from the role cattle play in water contamination, soil health, and carbon sequestration, to the 20th-Century uptick in chronic diseases often blamed on excessive meat consumption. Far from the contemporary knee-jerk tendency to draw black-and-white conclusions in the face of complex problems, Niman distinguishes between resource-intensive, environmentally destructive factory farming and other grass-based ranching techniques that, as she shows, have great potential for environmental benefit.

The author presents her case in two sections. Cattle and Beef. In the first, she discredits popular ideas about the environmental impact of cattle ranching, including a well-known and oft-cited UN report blaming meat production for 18% of all greenhouse gas emissions. She advocates unequivocally for grass-based cattle ranching, presenting it as a category quite distinct from feedlot farming. Her perspective is grounded in grassland ecology and the agri-political issues surrounding land usage. It can be summed up in a few words: grasslands are important, biodiverse, underappreciated carbon sinks and soil-conserving ecosystems that evolved in symbiosis with ruminant herbivores. Without grazing herbivores, grasslands suffer a loss of biodiversity and slowly turn into forests. Or, put more simply: We need grass. Grass needs cows.

Returning cropland to the prairie that preceded it and grazing cattle or other ruminant herbivores allows for the environmental benefits of a grassland ecosystem (biodiversity, carbon sequestration, erosion prevention, water filtration – the list is impressive) while also allowing nutrition to be harvested from grass in the form of beef. Removing beef from our diets would result in more grasslands being converted into cropland at the cost of thousands of tons of topsoil yearly and irretrievable plant and animal habitats.

In her second section, Niman proposes that the chronic diseases popularly linked with excessive meat consumption are more likely a result of increased sugar consumption, citing the research of various nutrition experts as well as statistical trends in the American diet over the past century.

The premise of Defending Beef is certainly ambitious, and the resulting text is informative and, overall, well-researched. In covering such a broad range of arguments, however, Niman’s manifesto loses some intensity. It comes across rather like an introductory survey course, spending too few words on each topic. This book could have been much longer, or divided into several separate books, each addressing a different aspect of the problem. Still, Niman’s writing is simple and straightforward, and as a survey course it succeeds in introducing the concepts necessary to talk about cattle as part of a responsible food system.

Most compellingly, Niman implores us to consider the impact of our food systems in a manner more nuanced than we usually allow, refusing to paint with the broad strokes of “good” and “bad”. Instead, she presents both advocacy and critique of her beef industry and picks apart common ideas about agriculture and nutrition that don’t hold up to scrutiny. This book is an excellent read for anyone, vegan or omnivore, who is concerned about the footprint of their dietary and agricultural decisions.

Hay from page 6

 Hay from page 6

Hay

buy they don’t come for free either, typically charging between $50 and $80 an hour for repairs. Your machinery will break down, sooner, or later. Then, you might become like what many of us have become, a collector of multiple pieces of older machinery; two rakes, two balers, etc. When strangers drive by your place and stop and ask if you are a used machinery dealer, you will know that you have arrived at that wonderful, if dubious, point.

Buying hay is a good option. There’s something to be said for having a truck show up in your driveway and you “write a check”, unload the hay, and then you’re done. You won’t be tying up endless hours all during the summer trying to get your haying done. You may even get to go somewhere on a Sunday afternoon!

Oh, the plot thickens again. How much time does it take to make hay? Mow on Monday, and then ted on Tuesday, and maybe rake on Tuesday or Wednesday, and then bale on Wednesday. That is, if it doesn’t rain. If you’re making balage, you can generally mow on day one and bale the next day. If it rains, and the hay gets wet, you need to go back and ted it out again, and then you are that much further behind and with a lower quality product.

Another nice thing about buying your hay is that that is that much less land that you need to pay a mortgage, insurance, and taxes on, and pay for lime, seed, fertilizer, and the occasional reseeding with all of its incessant tillage needs.

However, the five thousand pound elephant is still in the room; we have land that we want to make hay on, but we don’t want to lose the farm over buying a whole raft of machinery. We work off the farm, and don’t have enough time to make good hay in a timely manner. Perhaps we can hire someone to do our hay for us. OK, that works to a point. Do you think your neighbor dairy farmer wants to stop putting up their own hay that they need, and come over and dither with your little field? Oh, they might have time for you August rather than in June. Guess how good that hay will be?

Perhaps you can work with some amenable neighbors and you mow your own hay, and ted it and rake it, and hire them to come in and bale it for you. Any number of potential combinations exists. I have included a useful chart that shows what you might expect to pay to hire someone to do the work for you, “2018 Custom Rates and Fees”, prepared by CCE of Franklin County New York.

So, how do I handle my haying needs? We have at any given time 50 or so head of beef cattle and 100 more head of sheep on our farm. When I say “we” I mean my wife and myself, and that’s it for help. She has two other businesses to run, so I do 99% of all of the haying throughout the year. I do have a fleet of older farm equipment that I make dry hay with throughout the summer months. We have about 50 open acres on our home farm that we do rotational grazing on, and have been doing all that we can to improve our grazing situation and to extend it as far as we can into the late fall. I fortunately have available around 50 acres from several landowners near our home farm that we rent, inexpensively, for some grazing, but mostly make hay on about 50 acres of it.

I grew up with haying, and have been doing it in one form or another for several decades. It is in my blood, and there is no nicer feeling than to be out in a beautiful green field, slowly tedding or raking hay on a sunny day, enjoying the sights and sounds of nature. However, haying “hangs over my head” each and every summer to get it all done. I only make dry hay, and buy left over baleage from dairy farmers for a good price, as I do own a baleage wrapper. What everyone who is thinking about getting into the hay making business is that you must decide for yourself, will you have enough of a cash flow from the business to justify all of this expense and labor? Would you like to go somewhere on a Sunday afternoon? Think about it, and do what is right for you and your situation. Beware of those who do make hay, and say everyone should buy all of their hay. If everyone thought this way, then who would make hay?
Main Street Farms – Improving Efficiency and Profitability

Main Street Farms shares insights gained from their experience focusing on long-term business viability through a Profit Team project.

by Kat McCarthy, Dan Welch

At Main Street Farms, in Cortland NY, growth is the way of doing business. The farm has doubled in size annually. What started as a 1-acre market garden and 10,000 tilapia in an aquaponics system is now, after six years, 30 acres on three properties and 25,000 square feet of high tunnels and greenhouses, producing vegetables for over 300 CSA members, one farmers market, area restaurants, and wholesale customers.

Given their rapid growth, one would never expect that farmers Allan Gandelman and BobCat Bonagura didn’t begin their business with agricultural backgrounds. Allan, a high school social studies teacher, left the education field for the farm field, with a goal of growing vegetables for the local community and children in area schools. Shortly after starting the business, he recruited college roommate BobCat from an outdoor environmental education field to join the farm. Both have a love of learning and are passionate about feeding the community and educating about local food. In 2016, products from the farm made it into the school where Allan once taught, fulfilling his aspirations to feed students nutritious local vegetables. Demonstrating their value of community engagement, the farmers have also served on various local agricultural and environmental boards, and offered classroom presentations and tours, in addition to participating in local school events.

Since its launch seven years ago, the farm has occupied about eight different properties; 2017 marked the first year that the farm has not moved one or more of its sites between seasons. With a long-term lease for land, Allan and BobCat now are focusing on modifying existing facilities and have leased a 4,000 square foot warehouse for post-harvest packing and cold storage, and a commercial kitchen for the farm and another local business.

Shortly after the farm launched, Allan recognized a need to scale up production in order to develop a sustainable operation. This need was informed by the evaluation of profit and loss statements, enterprise analysis of individual crops to determine profitability per foot, and time studies of labor use. With a local average household income of $30,000, Allan believed the pathway for growth was to produce and sell more volume of diverse vegetables, not just more high-profit specialty crops.

As a result, Allan applied to the Small Farm Program’s Profit Team Project to explore opportunities scale up the business. He elaborates that over time the focus has been to increase production so supply outweighs demand, increase CSA memberships, and create access to a reliable processing facility. To date, the profit team project has helped with this goal by providing support to visit six other farms to learn about systems and best practices, offset attorney fees for the land lease, and off-farm work.

The benefits from this project were numerous. The farm’s new packing shed and GAPS certification would likely not have happened as quickly without the support of the project. Within the past three years, Main Street Farms has also scaled up equipment, and transitioned from one 47-horsepower tractor to a Kubota to approximately 6 tractors to save labor and increase efficiency. Additionally, the farm has invested in a large high efficiency cooler, land lease, and two H2A laborers as a result of work on the profit team project.

Allan also notes that the project has impacted farm management, profit and quality of life. Over the course of the project, Allan used a portion of a grant to visit, shadow and interview other regional, more experienced farmers. He was able to see how they operate, to learn their successes and mistakes, and through reflection, to identify inefficiencies and possible solutions for Main Street Farms. During these visits, Allan also discussed how data and financials, such as gross sales, employee pay, cash flow and debt, can inform the development of short- and long-term goals. These insights helped form Allan’s decisions around infrastructure investments.

Additionally, by seeing how others created a work-life balance, Allan learned strategies to implement on his own farm to support long-term quality of life improvements. He was inspired by one farmer who had established a structure so the farm family could take vacations every August, while others demonstrated strategies for balancing on- and off-farm work.

Looking to the future, Main Street Farms intends to continue following the plan it has set-forth, keeping a focus on establishing existing enterprises before expanding into new endeavors. “At this point, we just need to keep following the path that we have in front of us,” Allan notes, indicating the importance in staying focused and letting decisions play out. Allan’s next profit project will be to focus on improving production and management practices to maximize profit. He would start by visiting larger growers. He notes that learning about business planning and technical expertise go hand in hand, as an organization scales up.

A Partial Budget to Understand Costs & Benefits

On a tour of another farm, Allan observed a useful strategy to address maintaining food quality and improving food safety, while improving handling efficiency. By using a high efficiency cooler, the host farm was able to cool lettuce and other greens from field with less handling. At the time, lettuce harvested at Main Street Farms was cooled by submerging in cold water, air dried, and then put in storage. This resulted in the production having to be handled at least twice from the field to box, while potentially reducing produce quality. Additionally, cooling field grown produce to the right temperature in the right amount of time is key for food safety. Using the new method to keep lettuce cool, it could be directly transferred from the field to cold storage. By adopting this approach the farm was able to save 4-5 hours of labor per week on head lettuce alone. This strategy also improved product quality and has led to increased profitability in the farm’s greens enterprise.

To evaluate this new option, Main Street Farms had to analyze if the capital investment in the cooler would be offset by the reduced cost and increased revenue from the investment. For a relatively low capital investment like a walk-in cooler, one may choose to start with developing a partial budget (Table 1).

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Produce Quality</td>
<td>$756.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Decrease in Cost</td>
<td>-</td>
<td></td>
<td>Increase in Cost</td>
</tr>
<tr>
<td>Item</td>
<td>Amount</td>
<td>Item</td>
<td>Amount</td>
</tr>
<tr>
<td>Labor</td>
<td>$2,333.00</td>
<td>Sales on Cooler (annual)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Electricity Use</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Total Increase</td>
<td>$2,811.00</td>
</tr>
<tr>
<td>Change in Net Income</td>
<td>$2,811.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A partial budget looks at a potential change in a farm business to see if it makes sense financially. The additional costs of the potential change and any reduction in income are on one side of the budget. On the other side are any increases in income and reduced costs. These two columns are added together, and if the additional income and reduced costs are greater, it should result in additional profit for the farm. It is important to keep in mind additional uses for the investment, such as storing winter vegetables for a longer period of time. For longer-term investments, one should allocate costs and income on an annual basis. For a more thorough analysis of capital investments, and for larger investments, it would be recommended to perform a net present value assessment. The example in Table 1 shows how a partial budget could be used for buying a walk-in cooler.

Strategies for Success

Allan offers this advice to farmers who are growing their business:

- Constantly seek new information and learn skills to support positive evolution. By meeting with outside consultants and shadowing other farmers, Allan was able to incorporate successful strategies from others, while tailoring techniques to meet Main Street Farm’s unique needs. In meeting with a farm in Pennsylvania, Allan discovered that by investing in a high efficiency cooler he could avoid washing heads of lettuce, reducing staffing time, making GAPS compliance easier, and ultimately saving 30% on the production cost of the head of lettuce by reduced handling.
- Collect and use data to inform

See Main Street page 9

Staff at the farm harvest kale for the CSA.

Photo by Zack Bolton

Main Street Farms now harvests lettuce from the field, packs it into crates, and stores it directly in the highly efficient cooler.

Photo by Kat McCarthy
Cooperative Extension Brings Chickens to the Classroom

by Jason Detzel

Last year I received a grant from the New York 4-H Development Program to complete a poultry project with 4-H youth in the county. Naturally I chose to purchase an incubator, fertile eggs, and some supplies to teach a class on hatching chickens and to showcase the process at the Ulster County Fair.

Why hatching chicks? Children grow to interact and understand the world through the guidance of caregivers and teachers. Hatching out chickens allows us to introduce sensitive topics in a supportive manner to the people in our society who often have the most difficult time making sense of the world around them. Introducing these themes in real time and as they occur in an applied setting gives kids the room to think about what they are doing, to question why things are happening, and ultimately sort through the information and teach others about the experience.

As a team we can monitor the incubator daily, candle the eggs for signs of life, and eventually experience a new life coming into the world and all the responsibilities and chores that go along with nurturing them. Besides the beauty and excitement of birth, there is the other side of this project that is just as integral. Chicks that do not hatch, chicks that are sick, different, need a little extra help, and those that die all come with embedded lessons and understandings.

In my former life, the one where I didn’t look at poop in a microscope or talk about fistulas, I was a special education teacher. For about ten years I taught, lived, laughed, and cried with students and their families as they made their way through a world largely developed for neurotypical folks. With that in mind, I made the decision to only offer this course to special education classrooms in the Kingston City School District, and boy was I impressed.

These were not the clinical classrooms that I have seen in the past but vibrant and supportive rooms of learning where kids could be safe, be themselves, and work towards mastering the skills that will allow them to be as independent as possible. I find that we sometimes take for granted the fact that these kids are not challenged as often as their peers in their daily lives. So with the help of some truly phenomenal teachers and aides (and I’m not just saying that, my time in the classroom allowed me to witness the fair, caring, and stable relationships that these teams exude), we set out to both teach and learn together through the chicken hatching project.

So we got down to business. With the help of the teachers and the aides we hosted a classroom session where we presented the daily logs, the student responsibilities, talked about the process and the perils of growing chicks out in the classroom, and began introducing the complex and amazing process that transforms a few cells in an egg to an eating, walking, and pooping chicken. It was amazing to watch the students make the connections between the biological development of the chicks and of themselves. Some of the students enjoyed cleaning or filling in the logs but all of them enjoyed their time playing and handling the tiny birds. This became obvious on the last day of project when I came to pick up the chicks to bring them to their new farm home. After a little over a month spent caring for and interacting with the chicks, the students were sad to see them go and we had more than a few tears as I left with the little ones in a simple cardboard box.

All of the classroom project were a success but that does not mean that all the chicks hatched. In fact, one classroom had zero chicks hatch and another lost the majority of their animals only days before the big day. But the purpose of this was not to hatch chicks; the purpose was to introduce life lessons to students and to help them grow and learn in a supportive environment and in this regard I know that we exceeded this goal.

Jason Detzel is a livestock educator with Cornell Cooperative Extension of Ulster County

Main Street from page 9

management decisions. For example, to understand the labor cost of a crop, Allan conducts studies where he times how long it takes an employee to handle (i.e. bunch, wash, etc.) a specific amount of produce. Through these time studies, Allan understands labor costs for each product. As a result, the farm has a keen understanding of productivity metrics and costs. This data can be applied to conduct an enterprise analysis, which informs costs and payback period for investments in equipment.

• Network with other business owners, even if they are not farmers. For the past three years, Allan has been meeting monthly with a peer advisory group of other business owners in the local community, where they share and discuss their own business financials and numbers. He stated that “they are very valuable meetings and we haven’t missed one month since we started.” For example, at one of these meetings, Allan was posed with this question: Insurance companies send their customers a recurring bill, rather than stopping service for two seasons – so why not offer a year-round CSA to encourage customer retention? As a result, Main Street Farms is now operating a subscription “pay as you go” CSA for customers that doesn’t end in the fall, but instead continues until the customer cancels.

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.

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 June 2017. For more information about the Profit Team Project, please visit www.tinyurl.com/ProfitTeams.
Tipsheet: Transitioning to Organic Management of Orchards

by Guy Ames, ATTRA

Organic certification verifies that fruit is produced according to United States Department of Agriculture (USDA) organic standards. See www.ams.usda.gov/nop for details of the standards. In general, the regulations make several requirements of certified organic fruit:

- Produced without genetic engineering, ionizing radiation, or sewage sludge
- Managed in a manner that conserves natural resources and biodiversity
- Raised per the National List of Allowed and Prohibited Substances (National List)
- Overseen by a USDA-authorized certifying agent

All National Organic Program regulations for crops apply to tree fruits. The only regulation specifically pertaining to orchards is 7 CFR §205.204(a)(4):

“Nonorganically produced planting stock to be used to produce a perennial crop may be sold, labeled, or represented as organically produced only after the planting stock has been maintained under a system of organic management for a period of no less than 1 year…”

Basic Principles
Numerous pests and diseases, coupled with the high cosmetic standards of the market, make commercial organic tree fruit production difficult, especially in the East. The relative permanence of an orchard provides ecological stability, including opportunities for soil conservation and soil building. On the other hand, that relative permanence can allow the build-up of some pests, diseases and weeds since crop rotation is eliminated as a pest-management tool for all but the cover crop in the aisles.

Transitioning to Organic Disease Control in Orchards
Disease-resistant cultivars should be the foundation of an organic disease management program. However, many popular commercial cultivars have little or no genetic resistance to diseases. Furthermore, only a few cultivars have across-the-board resistance to all the major diseases in an area, and these cultivars are generally not well known to consumers.

- Sulfur and copper-type fungicides/bactericides are the mainstays of organic disease management; however, they are problematic, especially in the humid East where they must be on plant surfaces before a rain to prevent infection, but can easily be washed off by rain.
- Agricultural-grade antibiotics are no longer allowed in organic production for fire blight control in apples and pears.
- New-generation disease management tools, like microbial antagonists to certain pathogens, are becoming available, but are also problematic, especially in the East, where disease pressure is higher.
- Cultural techniques for managing tree fruit diseases mostly involve opening up the trees with pruning and training to promote rapid drying of plant surfaces after rain. These techniques are generally not adequate by themselves to control diseases, but can augment other approaches.
- Flail mowing of prunings or removal of prunings from the orchard removes an important source of disease inoculum.

Transitioning to Organic Weed Management in Orchards
• Crop rotation is impossible in an orchard situation. Pernicious weeds, like Bermudagrass in the Almond trees in bloom. South and quackgrass in the North, are hard to control organically, especially if you can’t rotate to a smoother crop. However, a thick cover crop in the aisles can keep weeds like bermudagrass from getting started and moving under the tree canopy. Also, the aisles can be planted (and rotated) to various cover crops for advantages such as providing mulch material, enhancing pest control, and contributing to tree nutrition.
• Mulch can be part of a good weed management strategy but can also encourage pests like mice and voles. Wood chip mulches don’t harbor rodents and have performed well in research trials.
• Precision, tractor-mounted mechanical weeder that prevent trunk damage are effective but not in mulched trees.
• Flame weeding and organic herbicides can be effective where weeds are short and applications are repeated, but the multiple applications necessary can get costly. No systemic herbicides are available for organic production, making control of some weeds very difficult.

Transitioning to Organic Insect and Mite Control in Orchards
• Several key pests, such as codling moth, plum curculio (only east of the Rockies), cherry fruit fly, and stink bugs can attack tree fruits and the low tolerance for damage, the grower needs to understand the life cycles of the pests and the points at which they are vulnerable to management.
• “Particle film technology” using a finely pulverized kaolin clay product, Surround™, has revolutionized organic insect management in tree fruits in the past two decades, making organic control of stubborn pests like plum curculio possible. Surround™ controls most tree fruit pests if fruit and leaves are adequately covered. Three problems bear mentioning: 1) Surround™ does weather off with time and rain, so multiple applications may be necessary, 2) if it doesn’t weather off or get washed off in a brusher/washer, residues will remain on fruit, 3) Surround™ readily precipitates out of solution in the spray tank, so the tank must be constantly agitation while applying.
• At least one botanical insecticide, neem, and several relatively new microbial—e.g., Spinosad™ and Beauveria bassiana—can be effective against particular pests.
• Pheromone disruption systems for specific pests, like codling moth and oriental fruit moth, are effective.
• Conservation of habitat and food sources, (e.g., certain wildflowers) encourages beneficial insects and other organisms and can augment insect and mite control in orchards.

Organic Magness pears. Photo by Guy Ames, NCAT

Further Resources
ATTRA’s series on organic fruit production, including publications on organic production of cherries, apples, peaches, plums, and pears. Access at www.attra.ncat.org or call 1-800-346-9140.


University of California Small Farm Program. http://stf.uc-davis.edu/

USDA Organic Regulations 7 CFR 205: www.ams.usda.gov/nop


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Produced by the National Center for Appropriate Technology www.ncat.org 1-800-275-6228 (1-800-ASK-NCAT) (Parent organization to the ATTRA Project, www.attra.ncat.org)
NATURE & STEWARDSHIP

Kids, Cows and Conservation at Vermont's Chapman Family Farm

by Rebecca Harris

In 1914, Sylvester Howe packed up his horses, left behind his family and small brick house in Tunbridge, Vermont, to travel 90 miles to the big city of Brattleboro. He would return weeks later with the town’s first registered Holstein cows to start Holstein Stock Farm. Nine of the Howe children would grow up on this farm, and six would die on the same land.

Tucked in-between rolling green hills carved by the winding first branch of the White River, the pastures are kept small in this valley. It isn’t hard to imagine the echoed clacking of hoofs over the wooden covered bridge that still acts as the sole access to this farm’s narrow green pasture. Over the years the farm was passed down from one generation to the next. Two years ago Tunbridge-born, military veteran, beginner farmer, Corey Chapman and his wife Ann bought this 200-acre organic dairy farm from Merle Howe, the last living son of the original Howe family, to start Chapman Family Farms.

When Corey Chapman grew up here, there were 25 dairy farms in town. Today only five organic dairy farms are left. Increasingly, Vermont’s idyllic agricultural lifestyle is threatened. NRCS's Agricultural Conservation Easement Program, Agricultural Land Easements (ACEP-ALE) helps protect threatened agricultural landscapes and their rich history for future generations.

In partnership with the USDA-Natural Resources Conservation Service (NRCS) and Vermont Land Trust, the Chapman’s conserv ed 60+ riverside acres of the farm in perpetuity with an Agricultural Land Easement. In 2018, NRCS celebrates 25 years of partnering with passionate private landowners, such as the Chapman Family, to protect and prevent the development of productive agricultural land.

Agricultural land easements help producers keep land in agriculture or, in this case, purchase a farm by providing financial and technical assistance. As part of the easement process, NRCS staff help landowners create a plan to conserve natural resources on their land in perpetuity. This family is marching forward into the future of farming while also preserving the landscape’s rich past.

Speaking with the Chapman family, it’s hard not to be moved by their passion for protecting their agricultural landscape and its natural resources for their six children (one which is still on the way). Ann says, “If we are going to farm, we are going to do it right from the beginning.” As beginning farmers, the Chapmans faced many challenges, including purchasing a farm, which is an expensive endeavor. They credit the ACEP-ALE for helping them pay part of their mortgage, renovate the barn, and turn on the lights at Chapman Family Farm.

Corey spoke about the long journey to get here. “I own a dairy farm, and this is what I dreamed about since I was a little boy playing in the woods here. The fact we were able to do it without inheriting a dairy farm from family is incredible.” Ann described their first days on the farm and how much it meant to the community. “When we threw the lights on for the first time people pulled in from the road. They had not seen the barn with lights on in over 20 years.” The land was alive again.

Unlike Corey, Ann spent the majority of her life in cities, spending her teenage years in Boston and traveling around the world as a student and young professional. “I’ve lived in cities most of my life, in places where you have to walk a couple of blocks to go see the grass they planted.” She understands the importance of maintaining working lands and raising children on a farm and explains, “I’ve seen a lot of places in the world where you had to go on vacation to see Mother Nature, where kids learn about farm animals from storybooks.”

She says protecting this land means connecting the next generation to “our rivers...“

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Milking Cleanliness

Improve hand-milking cleanliness for small ruminants with these few simple techniques

by Miriah Reynolds

The morning sun sneaks up and over the tall peak of the mountains as I open up the barn door. I am greeted by squinting eyes and eager faces. Pepper, my Saanen doe stretches and curls her upper lip, granting in the process. She’s not a morning goat, and needs to be motivated out of the barn. Star, my older milker, races out of the barn, grabs a mouthful of alfalfa, and waits quietly at the gate. Milking twice a day I suppose is my farm girl ritual; feed, water, milk, repeat. Offer a few good scratches and maybe a treat in the methodical movements of my routine. This year my goal was to revamp my cleanliness during milking to an even higher standard. Each day I challenge myself on improving efficiency and obtain the cleanest, purest milk possible. I will share my insight on my method of hand milking; where it begins in the barn to the conclusion in the kitchen. Keep in mind I have small herd that I milk by hand for my own consumption. My goats are not a business, but a passion and hobby. Still, many of these lessons are useful at any scale of milking.

It all begins in the barn

Clean milk starts with healthy goats and a tidy barn.

My husband will tell you that one of my favorite things to do around our farm is clean the barn. Yes, I’ll admit that my obsession for keeping the barn odor, muck, pests, and clutter free is a bit excessive. However, I believe that the barn is a major factor in a healthy herd and cleanly milk. Proper ventilation, good lighting, and adequate bedding are very important. My goats have 24/7 access to quality hay, clean water, and mineral. I use pine shavings as bedding in their stalls. Every morning the barn is ‘spot’ cleaned and allowed to air dry. In the evening fresh shavings are added. For me, the cost of ‘spot’ cleaning daily is more effective than cleaning once in a while and replacing all the bedding. By doing such, I have almost eliminated any manure that may stick to the goats’ udder or body.

Proper equipment

Stainless steel equipment is necessary for optimal milk handling. It is easy to clean, sanitize, and does not harbor odors like plastic. Stainless steel doesn’t alter the taste of milk and is very durable. I use a stainless steel 5-quart milking pail, an 8 quart milking tote (with lid), and a strainer. There are dozens of

 organic dairy cows at Chapman Family Farms in Tunbridge, Vermont.

“We still complain ... its human nature to complain, but at the end of the day we’re extremely lucky. I’m lucky to be alive.”

With the help of NRCS’s ACEP-ALE, one hundred years from now, the narrow covered bridge may still act as the only access to the farm’s narrow pasture, dotted with Holstein cows. Red maples lean over wandering riverbanks, their roots holding back the soil and filtering runoff. Ann’s Beach is filled with new children playing in the river, future farmers and conservationists learning to love the land.

Rebecca Harris is working for the USDA Natural Resources Conservation Service in Colchester, Vermont through EcoAmerica-Corps, as a Conservation Education Stewardship Assistant. She earned her Bachelor of Arts degree in Environmental Studies and Political Science from Tulane University in 2016.

For more information about NRCS’ Agricultural Conservation Easement Program (ACEP), which provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits, visit https://www.nrcs.usda.gov/way/conservation/easements/acep/.

Kids from page 11

and our soil.” She says, “The best way to protect a river is to let kids swim in it. If they grow up swimming in a river, they are going to love that river. They are going to get angry when banks are eroding, they are going to get mad when there is erosion, they will be concerned when there is trash lodged in the banks and when there are no fish. For the rest of their life, they are going to be protective of that resource.”

When the Chapmnan’s enrolled their riverside farmland in a state supported River Corridor Easement (an easement that allows for the passive restoration of the channel and for reforestation) they did so with one exception. Part of the conservation plan included land set aside for Ann’s Beach, where their family and others could still access, and play, in the river.

When asked how they envision the future, Corey and Ann tell a story from the days following Corey’s return from his third and last stint in Afghanistan. They sat down and asked each other what kind of life they wished to lead. Corey spoke with intention, “I don’t care if we are dirt poor and have nothing—this is our dream. We want to wake up every morning and see our children.”

Corey then turned and pointed to a framed photo hanging on the wall of a man in uniform, his late best friend Steve, and says, “When it’s 31 below zero and I cannot go anywhere, I remember that he was 25 when he died and now I’m 38. I am able to do whatever it takes to protect this land for my children. However, if they watch me walk through the door every day and the guy from the state is here because the river is polluted, they’re not going to want to continue farming.” Passing on this land should be a blessing, not a burden. That means investing in sustainable infrastructure such as a new manure pit or a larger bunker silo. It means thinking about how your farming practices will impact the future of the land.
styles and sizes of milking equipment that will meet the needs of most any herd size. I milk into the pail and filter into the tote. All milking equipment is cleaned in the dishwasher on the sanitize setting. Stainless steel is corrosion resistant so pails and other equipment will last for years if taken care of properly. Having the right equipment makes the milking process so much simpler and effective for a reasonable initial investment.

In the milking stand
Chores start with feeding the goats individually outside the barn. By separate feeding, I am able to monitor consumption and have zero grain wasted. The goats can take their time munching away while I clean the barn and fill waters. Once in the milking stand, my girls stand peacefully chewing their cud. Brushing swift whisks over the entire body removes a tremendous amount of dirt, loose hair, and debris. The milking stand is set up to where I can walk completely around it, giving the opportunity to see all sides of the goats. I look at her eyes and give a loving face brushing. I make mental notes of her nose, rear, and attitude. It’s rewarding to do a brief evaluation of my goats and spending a few quality moments with them before milking. Star worships the attention while Pepper appears unenthused.

After brushing, the udder is gently washed with a clean cloth soaked in a chlorhexidine based udder wash. Once her udder is clean and dry, I wash my hands. One simple trick is placing a cloth underneath the milk pail. It works wonderfully because anything that may be on the milking stand does not stick to the bottom of the bucket, and later end up on the kitchen counter! It’s important to keep the handle of the milk pail towards the front of the goat and not by her dirty back hooves. Discard the first couple squirts and then milk normally.

I filter the milk into the 8 qt. stainless steel tote and secure the lid. By filtering the milk immediately up at the barn, it doesn’t sit with any missed debris for more than a couple minutes. The closed milk tote is wonderful at keeping any pesky bugs or pollen from falling in. It’s important to use a clean cloth for each goat to reduce contamination between udders. Cloths can be washed with bleach on an as needed basis.

The does are returned to their paddock, relieved and ready for the day. They migrate over to the hay and casually bicker. Dust, snorts and quick glimpses of running kids ensure that they are happy causing havoc on the hillside. They seem content for now, and this evening the whole process will be repeated.

In the kitchen
My adorable goat barn is quite a ways from my house, so it’s a long, dusty hike down the hill with a full pail of milk. The milk tote was one of the best investments in advancing milk handling because now it actually makes it to the house and not spilled into my boots! Once at the house, all counters are disinfected, and the glass jars have been sanitized. The milk is filtered a second time into half-gallon glass jars and refrigerated immediately. I prefer the half-gallon jars because from my experience the milk cools faster. Cooling of the milk is crucial for taste and reducing bacteria growth.

The goat milk from my little heavenly farm is so delicious and even better when transformed into cheeses, yogurts, caramel, and other delectable creations. I am excited to keep improving my technique and share it along the way. These simple steps can drastically reduce the amount of debris in milk. I invite you to evaluate your own milking routine and find simple ways of improving cleanliness. As a wise Montana rancher once told me “Goat farming is a process, not an event!”

Miriah Reynolds graduated from Montana State University with a degree in Animal Science and has the most amazing herd of dairy goats. Goats, agriculture, and sharing stories is truly her passion. She was raised on the Reynolds Barn goat dairy in Rhode Island. She loves to hear from readers; Miriah Reynolds Bitterwind Ranch at iminthegoatbarn@gmail.com.

This article was also published in Goat Keeper magazine in Canada. October 2018.
More Than a Matter of Taste
by Fred Provenza

This excerpt is from Fred Provenza’s book Nourishment: What Animals Can Teach Us About Rediscovering Our Nutritional Wisdom (Chelse Green Publishing, November 2018) and is reprinted with permission from the publisher.

Liking for foods is typically thought to be influenced by palatability. Webster’s dictionary defines palatable as “pleasant or acceptable to the taste and hence fit to be eaten or drunk.” Animal scientists usually explain palatability, though, as a liking influenced by a food’s flavor (odor and taste) and texture, or the relish an animal shows when eating a food. Plant scientists describe palatability as attributes of plants that alter an herbivore’s preference for consuming them, such as physical and chemical composition and associated plants.

Redefining Palatability

I had begun to ponder these questions about what influences an herbivore’s food choices while observing the perplexing behavior of the goats in St. George: Why didn’t the goats prefer the younger more nutritious twigs of blackbrush over older, woody, less nutritious blackbrush twigs? As it turned out, the goats helped me understand their anomalous behavior.

My colleague Beth and I began with a series of trials in which we extracted and purified secondary compounds from young twigs, mixed each purified extract individually with a pelleted food, and offered the “flavored” pellets to goats one laborious trial at a time. We did the trials during fall and winter, with no sign that any of the compounds deterred feeding by the goats. By midwinter, only one compound remained to be tested—a condensed tannin plentiful in the bark of new twigs. By process of elimination, we figured, this tannin must be the feeding deterrent.

On the first morning of the final trial, the goats ate all of the tannin-infused pellets. We were surprised and bewildered. We had tested every compound that might have made the goats prefer to eating new blackbrush twigs, and the goats had eaten every one. How could they be so averse to eating new growth when none of the secondary compounds we’d extracted had any effect? Not only that, but at the rate the goats ate the tannin-containing pellets the first day, we had only enough tannin-containing pellets left to conduct one more trial. We’d spent months of hard work collecting twigs and then extracting and purifying that condensed tannin. We didn’t know what to do. As we pondered the situation that cold winter morning, we decided all we could do was feed the tannin-containing pellets again the next day.

Incredibly, when we offered the pellets the following day, the goats wouldn’t touch them. On this second exposure to pellets high in tannins, the goats had somehow changed their preference. It wasn’t a question of merely responding to flavor. If the goats had disliked the flavor of the tannin-infused pellets or innately recognized the pellets as something that would make them sick, they wouldn’t have eaten them so enthusiastically on the first day. At that aha moment, we realized goats didn’t innately know high-tannin pellets were bad for them. Rather, they had to learn from aversive postingestive consequences. In other words, it took a queasy stomach (nausea) to make the goats stop eating for the next few days. That allows time to detoxify and eliminate those toxic alkaloids from their bodies.

To confirm that hypothesis, in a subsequent trial, we supplemented goats foraging on Cactus Flats with a small amount of alkaloids—a compound that binds tannins in the gut, alleviating the aversive postingestive effects. Goats supplemented with polyethylene glycol don’t experience the nauseating effects of tannins in blackbrush.

With the deterrent effect neutralized, those goats were free to choose, and they preferred new to older growth twigs based on the higher energy, protein, and mineral content of the new twigs.

At that time, we were also studying how lithium chloride causes food aversions in sheep. Lithium chloride—once used as a substitute for table salt and to treat manic depression in humans—in excess conditions a food aversion in animals. Following the findings with blackbrush, we decided to repeat the trials with lithium chloride, but on goats as well as sheep. Sheep and goats who receive a capsule of lithium chloride acquire an aversion to any forage they ate just prior to receiving lithium chloride. Like humans, an upset stomach doesn’t necessarily cause an aversion in goats or sheep, but nausea does. At the dosages we were using, neither the sheep nor the goats showed any overt signs of illness. Yet, the following day they avoided the food they’d eaten just prior to receiving the lithium chloride.

Though conditioned taste aversion was of key importance in psychobiology, until the study with goats and blackbrush, neither we nor other scientists had a clue that secondary compounds in plants were communicating with cells and organ systems in herbivore bodies, providing feedback that changed liking for the flavor of a particular food. Rather, we had thought animals instinctively avoid foods that taste bad and choose to eat foods that taste good. During the next forty years, with this new understanding dawning, the research group I supervised carried out hundreds of studies that illustrated how likes and dislikes for the flavors of foods are caused by postingestive feedback emanating from cells, organ systems, and gut microbes.

In some studies, we worked with animals that had been made mildly deficient in primary compounds (energy, proteins, minerals, and vitamins). In our first studies, for example, we fed straw (a food with little nutritional value) to lambs deficient in energy. Some of the straw was flavored with apple; some with maple. On day one, lambs in one group were given apple-flavored straw, while lambs in the other group were given maple-flavored straw. After they ate the straw, we gave all the lambs an oral drench of water directly into the gut. On day two, lambs in the group previously fed apple-flavored straw were fed maple-flavored straw, while lambs fed maple-flavored straw were fed apple-flavored straw. After the meal of straw on day two, we gave all the lambs an oral drench of energy. After several days of that protocol, the lambs were given a choice between apple- or maple-flavored straw. They strongly preferred the flavored straw that had been paired with the boost of energy delivered directly into the gut. Thus, one group preferred apple-flavored straw while the other group preferred maple-flavored straw.

We showed that feedback strongly influences preferences for flavors paired with both primary compounds and secondary compounds (phenolics, terpenes, and alkaloids). We also found primary and secondary compounds interact with one another and with cells and organs to influence the choices animals make while foraging. The balance of primary and secondary compounds relative to needs strongly influences liking for flavors.

Secondary compounds set a limit on how much of any one food an animal can eat. Thus, animals must eat a variety of plants that contain different secondary compounds, detoxified by plant mechanisms in the gut and liver, in order to meet needs for energy and protein. Cattle who forage on high mountain pastures select from a smorgasbord of plants, including larksprur, which contains toxic alkaloids. How much larksprur a cow will eat during a meal varies from day to day. Cattle recognize when they reach a toxic threshold and they stop eating larksprur for the next few days. That allows time to detoxify and eliminate those toxic alkaloids from their bodies.

Infusion studies with terpenes from sagebrush also show the signal the herbivores received feedback. Terpenes give sagebrush its characteristic fragrance. Like any primary or secondary compound, in appropriate doses, terpenes are beneficial for health, but when the dose climbs too high, they become toxic. While elk, deer, cattle, and sheep use sagebrush as a nutritious forage in winter, terpenes limit their intake of sagebrush in accord with the amount of terpenes these herbivores can detoxify and eliminate from their bodies. When terpenes are slowly infused into the rumen or the bloodstream as sheep eat a meal, sheep stop eating before the amount of infused terpenes reaches a toxic level. They resume eating only after terpenes in the body decline.

Terpenes thus affect satiation (processes that bring a meal to an end) and satiety (processes that inhibit eating between meals). Lambs reduce meal size (reach satiation sooner) and increase intervals between meals (longer satiety) when their diets are high in terpenes. When animals can eat a variety of different forages, which vary in kinds of secondary compounds, what ensues are cyclic patterns of intake of different foods from meal to meal and day to day as bodies regulate intake of foods with different kinds of secondary compounds.

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In the early years of those studies, I was amazed that administering primary or secondary compounds directly into an animal’s gut (or bloodstream) could markedly alter that animal’s liking for the flavor of a food. It was counterintuitive to my experience of eating and to all I’d been taught about how taste influences preference. To further complicate matters, ruminants—including cattle, sheep, goats, elk, and deer—are walking compost heaps. They have four-chambered stomachs, and the rumen is a huge fermentation vat that contains mixed plant material being digested by thousands of species of microbes. How could signals from primary and secondary compounds not be lost in such a heap of fermentation? Over and over again, though, goats, sheep, and cattle showed us that the signals weren’t lost in the rumen.

Fred Provenza is professor emeritus of Behavioral Ecology and Department of Wildland Resources at Utah State University, where he directed an award-winning research group that pioneered an understanding of how learning influences foraging behavior and how behavior links soils and plants with herbivores and humans. Provenza is one of the founders of BEHAVE, an international network of scientists and educators committed to integrating behavioral ecological principles with local knowledge to enhance environmental, economic, and cultural values of rural and urban communities. His latest book Nourishment: What Animals Can Teach Us About Rediscovering Our Nutritional Wisdom will be published in November 2018.
Chainsaw Safety, Part 5: Tree Felling

by Rich Taber, CCE Chenango

In the previous four installments of this series on chainsaw operation we have looked at some of the myriad rules for safe and efficient chainsaw operation. We have looked at the protective gear that is needed by an operator, the safety considerations with the use of the chainsaw itself, and some of the training that is available for chainsaw users. In this final installment, we will look at the actual felling of a tree.

Safety is always of paramount concern when felling trees and the statistics bear this out, in that logging is the most hazardous occupation in the United States. Granted, much progress has been made in recent years, with more safety training and certification of loggers being demanded. However, many of the readers of this publication will not be professional loggers and oftentimes slip through the cracks with little or no formal training in the safe use of chainsaws. An important focus of this article will be on the use of the correct felling notches to use, which in recent years has changed dramatically.

Now that we have arrived in the woods to fell trees, what are some of the precautions that we should take? First, you might consider having someone else nearby so that if anything bad occurs, that second person can summon help. The presence of a good first aid kit with a blood clotting sponge and trauma kit is imperative to have nearby as well as a fully charged cell phone on your person.

We need to look at the tree that we are going to fell, and make sure that there are no “widow makers” in or near that tree; widow makers are dead branches high overhead that can easily come crashing down on you. If they are present, go on to another tree! You also don’t want a tree to be near any power lines, houses, or other buildings. If the tree in question is near buildings, perhaps it would be more prudent to hire an experienced arborist or tree surgeon, rather than “your buddy from work” who happens to own a chainsaw. (Try explaining to your neighbor why there is a tree on top of their house or vehicle that you or “your buddy” just dropped it onto; there will be red faces and lots of liability all around!). You also need to clear any brushy stems in your felling area that might get tangled up and trip you, or catch on your clothes and impede your escape when the tree begins to fall.

![Image of tree felling diagram](image)

The safety zone once the tree starts to fall (B) is 45 degrees on either side from the direction of the fall (A)

You will need to have a clear escape route to move to when the tree begins to fall, at about a 45-degree angle to the tree away from the felling direction. You do not want to be moving away from the falling tree in a straight line in the direction that it is falling; trees have been known to kickback off the stump and kill and injure people. This brings us to the crux of this article, the felling notches to be used.

One of the included illustrations shows the long used, but obsolete conventional felling notch, which should be replaced with open-faced notches. Many publications still show this obsolete and unsafe notch, and is used by many people in practice, even in this modern era of new and better information available such as from “The Game of Logging”. What is wrong with this notch? The problem is that this notch oftentimes allows the tree to hang up on the notch when it falls to the ground, resulting in the tree still in the air and incompletely fallen.

![Image of directional felling](image)

Directional felling, which uses a “plunge” cut and wedges to better control the safe felling of a tree.

The open face felling notch is part of the method known as directional felling, and was promulgated by the world-renowned Soren Ericson, who brought much of these newer and more efficient felling methods to North America from Europe. These methods have been adopted by the forest products industry all over. The open face notch has now replaced the conventional notch, and the illustrations show the gist of the details. Directional felling allows you to control exactly where the tree will fall, but does take a bit of training and experience to become competent in its methods.

The safe felling of a tree using an open face notch consists of making three precise and strategic cuts; the top cut, the plunge cut, and the back or felling cut. Felling wedges can then be used during the final cut to assist the tree in beginning to fall. Once the tree starts to fall, you move away from the tree at the aforementioned 45-degree angle as shown in the image. This technique is very safe once learned, but takes some dedicated practice to get it right.

What do we do if the tree hangs up, and doesn’t make it to the ground? This is where a logging winch mounted to a tractor comes in handy; and is much safer than just putting a chain around the tree and pulling it down with a tractor or other vehicle. The cable on the winch allows you to get a good safe distance away from the tree for when it does fall. Oh, by the way, the only people who never get trees hung up are those who never fell trees the right way.

See Chainsaw page 16
The Law of Diminishing Returns – How Farms Know When They’ve Reached It

by Betsy Hicks, South Central New York Dairy & Field Crops

Today’s economy has every producer struggling to find ways to increase cash flow. We fill stalls, add a few more cows, keep plentiful heifers in the pipeline, and estimate our projected inventory of first-calf heifers due to calve and add it to the count of cows in our milking string. Banks, profit teams, nutritionists, owners, veterinarians, managers — everyone looks at these numbers. Adding more cows lets us extrapolate out numbers of projections of what milk could look like and potentially positively impact cash flow. We know feed costs, we know how long it takes us to milk extra cows; we put numbers to things to define what these extra cows can do to our bottom line.

But at what point does putting an extra cow in the barn starts to yield negative results? Yes, milk per stall may look great, but what strain or stress has it put on the entire system? With fresh cow groups, or close-up dry groups, we know exactly how many cows we can put in the group before we start seeing metabolic issues. With heifers, though, are we able to define exactly what those negatives are? And what about the added strain on the human element? If you have narrow alley ways, slippery floors in the summertime and more cows in a group than before, what does that do for the efficiency of the worker? How about the worker’s state of mind while trying to sift through that group of cows?

When we overcrowd the system, yes, we’re trying to be as productive as possible – filling the barn to capacity will pretty much always yield more cash flow than a barn that’s half full. Pushing the limits leads us to the law of diminishing returns — we put another cow in the group, but instead of the average of the group being 80 lbs./cow, now it’s 78 or 77. Still positive, being that we added more milk, but not quite as high as we were before. We overcrowd that fresh cow group and blow up with ketosis and DA’s — that’s the point of negative returns, not a fun or profitable place to be.

So, let’s think about these points in our system and how we can relate it back to results. Yes, we need to cash flow, but more animals aren’t always the answer. I challenge you to look at each point in your system and identify where you are past the point of getting a positive return. If we were making $24 conventional milk again, I have a feeling that a lot of transition heifer barns would be going up to correct a huge overcrowding issue in our replacement program. Again, though, more animals isn’t always the answer. To relieve crowding, we can either put animals in a bigger space, or we can remove animals from the space. New barns aren’t in the cards that dairy producers are holding right now, so removing animals from the space is the next best answer. Do you know how many heifers you need to maintain your herd size or maintain growth for expansion? Odds are, with the results in reproductive efficiency that I see on many herds today, we don’t need to keep a 1:1 ratio of heifers to cows – probably 80% of the cow herd is realistic, even with a herd in expansion mode.

If you only keep 80% though, that means some heifers have to leave! I challenge herds all the time — what are the criteria for deciding if that heifer goes to sale? This needs to be decided BEFORE the calf hits the ground. Many times, I’ve seen half beef breeds running around in heifer pens because the producer decided to use beef semen as a way to either get a problem cow pregnant or to convince themselves that they don’t want to keep the genetics from the cow, and they didn’t sell the calf afterwards. In either scenario, the producer needs to make a management decision AHEAD OF TIME. Every herd has a bottom third of cows. This is a good place to start making decisions about who to keep.

What happens when we start maximizing our system instead of overtaxing our system? We have less milk to have to feed — or the capacity to feed more milk to fewer calves and maximize growth. Letting a few calves leave the farm immediately may open up opportunities to starting weighing heifers at specific time points to reveal gaps in performance that can be addressed. We have less crowded heifer pens — or healthier calves that don’t have underlying respiratory disease and have reached puberty faster. We have heifers that reach the milking string more quickly — or heifers of the proper size calving in that start to pay you back sooner. With the milking string, we have cows calving in that have no metabolic issues and reach consistently high peak milk. We have time to not just trim cows that need attention, but do maintenance trims on the whole herd. We have ample bedding in stalls and cleaner pens for cows to spend their day in. From the human aspect, taking care of healthy cows and calves is far less stressful than caring for the poor performers in the group.

Making these management decisions doesn’t happen overnight, and can be overwhelming. Having the conversation with your nutritionist, veterinarian and/or extension educator is a great place to start.

Implementing your strategy will be hard, but knowing that taking a proactive approach to managing herd size will only benefit your dairy in the years to come.

Betsy Hicks is a dairy specialist with the Cornell Cooperative Extension South Central New York Dairy & Field Crops team.

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In conclusion, I strongly suggest that anyone who uses a chainsaw to attend a Game of Logging session; they are held frequently and all over the Northeast. Fell away, but chainsaw to attend a Game of Logging session; they are held frequently and all over the Northeast. Chainsaw from page 1

In conclusion, I strongly suggest that anyone who uses a chainsaw to attend a Game of Logging session; they are held frequently and all over the Northeast. Fell away, but chainsaw to attend a Game of Logging session; they are held frequently and all over the Northeast.
It is true that there are fewer processors today than there used to be. And on top of that, there are a lot more regulations that cost money to implement. The processors themselves are reporting to us that there is barely enough business to keep them afloat because there are very few folks processing in the springtime.

While you can’t count on more processors opening up in a given area, you can - and should - develop relationships with a few of them. The general consensus is that anything within about four hours can be considered local.

What follows are some general tips that I have acquired for when it’s time to process your animals.

1. Make your appointments at least six months in advance for large animals. Most ranchers and farmers will routinely make all of their appointments a year in advance for their entire season and if you call a couple of months out you will most certainly be put on the waiting list.

2. If you do find yourself in a bind, there is a map of slaughterhouses in New York available at: http://smallfarms.cornell.edu/resources/livestock/slaughterhouse-map/

With a few phone calls you can usually find someone to process your animal in some of the less populated areas of the state, although this will certainly require a longer trip.

3. Communicate with your processor! Every facility has their own cut sheet and a certain way that they do things. Before you fill out your cut sheet, sit down and think about what you or your customers are going to want as far as what they will most certainly be put on the waiting list.

4. Talk to other farmers in the area. Ask them what they liked and possibly didn’t like about certain processors. Most farmers are more than happy to share their opinion and tend to be very loyal to the processors that they feel do a good job.

5. Shop around. Most processors have websites that list their kill fee and price per pound for processing. Each facility does this differently and even though one place is less expensive it does not mean they are the best choice.

6. The USDA makes the rules for retail cuts and each animal is a little different. A simplified version of these regulations is that cattle, sheep, goats, and pigs must be inspected at a USDA slaughterhouse to be sold at retail. Poultry can be processed and sold on-farm or at farmers markets as long as you are doing the work and are processing less than 1,000 birds per year. Poultry can be sold to stores and package your organ meats?

You need to know this before you go in to fill out your cut sheet. And don’t be afraid to ask questions. These guys are the experts, and if they are not willing to give you a little of their time to get things right for the customer, then maybe the partnership is not a good fit.

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In Camden, a Hot Sauce is Helping Young Urban Entrepreneurs Fight Poverty

A teen-focused entrepreneurial program in Southern NJ offers job training and education

by Suzanne Cope

Last fall, a half-dozen teenagers from the Southern New Jersey city of Camden brought hot peppers they’d grown in an urban garden to a rented industrial kitchen. Donning latex gloves, they de-seeded and chopped the chilies before adding them to vinegar and salt. A few days later, they processed and bottled the resulting product into their own brand of hot sauce, Kapow!

The group is part of a teen-focused entrepreneurial program called Eco Interns, offered by the Camden-area Center for Environmental Transformation (CFET). The mission of this nonprofit is to create a sustainable, healthy source of fresh fruit and vegetables—through community gardens and a farmers’ market—for an underserved urban community, while offering job training and education with a focus on meeting environmental challenges.

The interns do everything from picking and preparing the peppers to processing and selling their hyper-local, all-natural hot sauce. And they’re paid a competitive hourly wage to do so. In the early stages of the annual summer program, about a dozen interns work in one of the organization’s urban gardens, cook nutritious food, and run a stand at a weekly summer farmers’ market. The garden has both raised and in-ground beds, a greenhouse, a beehive, and a fruit orchard, all tended primarily by the teenagers.

In a neighborhood where jobs—particularly for young people—are hard to come by, participants say they appreciate the program and the training it provides. “I was very grateful to have this experience,” one teenager reflected in a writing activity at the end of the summer. “I learned a lot of things that I plan on carrying with me for the rest of my life.”

The inaugural cohort of teenagers conceived of Kapow! three seasons ago from the ground—or garden—up, working with a designer and small-business consultant to get the product into the hands of customers. During the first year of this entrepreneurial enrichment program, which takes place after the summer Eco-Intern program has ended, they made and sold a little more than 100 bottles; in 2017, that number rose to 450.

Bottles of Kapow! are mostly sold at CFET events, and through people and organizations that reach out to the group directly. Recently a representative of Subaru came across Kapow! at a CFET event and ordered a few dozen bottles to use as corporate giveaways. All of the proceeds are invested back into the program, where they help pay for additions like the recent beehives that CFET has acquired for its gardens.

Participants learn much more than how to produce a condiment; they gain experience with every aspect of developing and building a small business. The initiative provides not just diverse job training but also nutritional education and a source of fresh, locally grown produce in a region labeled a food desert for its lack of access to fresh food. CFET grew out of an effort by parishioners at the nearby Sacred Heart Church, who were so moved by volunteer work they had performed in New Orleans after Hurricane Katrina that they sought to create similar change in their own backyard.

The entrepreneurship program that developed Kapow! began with the help of a grant from New Jersey’s Office of Faith-Based Initiatives as a way to extend CFET’s efforts. As the program grows in size and popularity, community groups say local nutrition and food security is improving and area youth are better prepared for higher-paying jobs and further school—opportunities that long fell out of reach in this community.

In addition to making Kapow!, CFET manages urban garden spaces around Camden that include community gardens, fruits orchard, and a plant nursery, and offers gardening programs to younger children (called Garden SEEDS).

“Our first mission is respect for the environment,” says Teresa Niedda, CFET’s program director, of the group’s goals. “But we are also concerned with food issues: the availability of fresh, local food for the youth workers and the local community. Also, of course, we’re committed to youth development—giving Camden youth a safe place they can go to learn about the environment, health, and job training, among other things.”

Meeting a Need in Camden

The decade-old CFET is located in the city’s Waterfront South neighborhood, a mix of residential and industrial areas where shipbuilding was once the biggest industry. Throughout Camden, more than a third of the almost 75,000 residents live in poverty, compared to the United States’ 12.7 percent average poverty rate.

And whereas 14 percent of Americans nationally receive federal nutrition assistance programs, 65 percent of Camden County residents are eligible, and studies have shown that there are many food-insecure families in the city who don’t qualify for or receive SNAP. In response to the widespread food insecurity and the limited job opportunities available for young people, CFET chose to focus on teenagers.

Participants have the ability to work their way up from an eco intern to a senior farmer, at which point they can take part in community food justice discussions, lead workshops, speak at Earth Day events, and collaborate with high schools and colleges that now come to Camden for service learning and to learn about food justice issues.

In addition to benefiting participants, the program serves the local community. The farm offers growing space and a green oasis for the urban neighborhood. The weekly farm stand the teenagers run provides one of the few sources of fresh produce in the area and the kids are allowed to bring home any excess from the week.

Rutgers researcher Kate Cairns studied the effect of the...
program on its participants and found that the added income and fresh food home have both made noticeable differences in their lives. It has also taught them skills that will affect their ability to provide for themselves throughout their lives. "Now I don’t have to worry about [accessing fresh food] because I can do it myself if it ever got serious," one participant in the study was quoted as saying.

Cairns’s research also highlights the lack of opportunity for teenagers in Camden. In her article, she shared participants’ stories of being encouraged to sell drugs instead of working at CFET.

She says one youth told her that a student had been approached by a man who asked, “Why you doin’ this for $9 an hour?” While waving a stack of cash, he continued, “Do you know how fast I can make this much money?” Cairns notes how appreciative the participants are to be part of a program that provides options beyond those neighborhood pressures.

While CFET doesn’t yet have a system for tracking youth who have finished the program, Niedda says it’s clear that interest is growing. They no longer have to advertise for summer workers, and as many as 35 people applied this summer through word-of-mouth alone. Interest in the locally grown produce has increased as well. “When I first started, the youth just weren’t into the healthy food,” she says with a laugh. “Last year’s group fought over taking the extra food home. It was amazing.”

In 2013, Niedda notes, only three Camden high school graduates who took the SATs were considered college-ready. But things are changing. “[Last year’s] senior farmer and assistant farmer are both in college,” she says, while another former participant is majoring in botany thanks to his work at CFET.

The success of Kapow! has led students to expand their offerings. Last fall, they created Midas Touch Honey, made from last summer’s newly productive hives. Working with a professional designer, they came up with a branding concept: a queen who turns everything she touches into gold-honey. This is a fitting metaphor for their own experiences: As a result of the program, they see their futures looking brighter. As one teenage participant says, “I know I could sustain myself because I learned so much from here.”

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URBAN AGRICULTURE
Growing Urban—A Lower West Side Story
Two farmers are committed to providing the Buffalo, NY community with a variety of produce.

by Lynnette Wright

A Perfect Blend
Prior to their partnership, Carrie Nader had been working the land since 2014. When she was growing up, she loved helping her grandfather tend his large garden. When she moved to the Lower West Side region, she bought several city lots at reduced prices to start her urban farm.

Alex Wadsworth started working for the operation in 2016, lending his knowledge of horticulture techniques, which helped improve the productivity of the farm. Previously, he attended culinary school, which inspired him to learn more about how the food he was cooking was grown. In this pursuit, he learned about World Wide Opportunities on Organic Farms (WWOOF) and travelled to Maine to work on farms. After returning to Buffalo, Wadsworth learned about Nader’s operation, and began working with her.

In 2016, the partners focused on improving the infrastructure of the farm, which is completely fenced in and utilizes solar power. Nader and Wadsworth worked with the Erie County Soil and Water Conservation Service District and local USDA Natural Resource Conservation Service (NRCS) to get financial assistance for a high tunnel. High tunnels protect plants from severe weather and allow farmers to extend their growing seasons-earlier in the spring and later into the fall.

Westside Tilth Farm is now growing over 400 tomato plants in the high tunnel with hopes of producing more than 200 pounds of tomatoes a week.

Better Beds
Another infrastructure improvement they have made is to increase their number of growing beds. They have planted 120 beds this year, with a wide variety of vegetables, greens, herbs and alliums. The beds are placed on a geotextile barrier, which allows water to flow through, but not soil. Concerned with possible contaminants in the city soil, they brought in more than 600 yards of soil and compost to place on top of the geotextile barrier.

Improvements with Microloans
To further enhance their operation, Nader and Wadsworth applied for a microloan from USDA Farm Service Agency (FSA). This low-interest loan allowed them to build a wash station for produce, install more beds, purchase four small portable high tunnels and place a mushroom grow house, their newest venture.

“None of this would have been possible without the loan from Farm Service Agency,” Nader said. “The wash area alone cuts our work time down significantly.” The wash area includes a drained concrete pad, a 150-gallon bubble washer and a retro-fitted washing machine to spin the greens dry, with a shade cloth overhead. From here their greens go to a walk-in cooler to maintain the freshness of their veggies.

Produce from Westside Tilth Farm is sold three ways— to local restaurants, through Community Supported Agriculture (CSA) and a farmer’s market they hold two days a week on the farm.

The markets are on Tuesday and Friday evenings, and this year, they will also be making and selling pizza at the Friday market.

“I really enjoy letting our consumers in the gates to see the farm and how we grow the food they’re buying,” Wadsworth said. “We’re trying to make Friday a very social event, we want a line out the door to get in and buy vegetables.”

In the future they’d like to add more social events, such as farm dinners or farm tours.

“None of this would have been possible without the loan from Farm Service Agency,” Nader said. “It’s a lot of work,” Wadsworth said. “You have to put everything into the farm to make it successful. It’s a sacrifice, but it’s worth it. We love what we do.”

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