

Small Farms Quarterly

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



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WINTER 2026

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Cover photo: The Cornell Small Farms Program hosted a two-day Tractor Operations & Safety Workshop to lead participants through the basics of tractor operations with hands-on guidance. Read our tractor guide on **page 15** to learn more about the process of deciding whether it is time to invest in a tractor and what to consider.

Photo by Kacey Deamer / Cornell Small Farms Program

SMALL FARMS QUARTERLY

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

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

Our goals are to:

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

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The Small Farms Quarterly is compiled by the Cornell Small Farms Program, based at Cornell University in Ithaca, NY. The Cornell Small Farms Program fosters the sustainability of diverse, thriving small farms that contribute to food security, healthy rural communities, and the environment. We do this by encouraging small farms-focused research and extension programs.

Anyone is welcome to submit articles for consideration. See our guidelines at smallfarms.cornell.edu/quarterly/writers/ and contact Kacey Deamer with inquiries. Articles should be 1,000 - 1,600 words in length with at least three high-resolution image options.

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Small Steps, Big Vision: Oyster Farming on Long Island's Great South Bay

Mike Mieziarka and Ray Smith, founders of Toasted Oysters, are building a viable farm business on Long Island's Great South Bay.

By Lee Rinehart

Mike Mieziarka and Ray Smith have found a way to beat the average Long Island commute time by almost 75%. They take a boat.

After a 15-minute crossing of Great South Bay, their workplace materializes on the horizon: a series of floating cages in discrete rows covering 1.5 acres of the es-

tuary. We have arrived at Toasted Oysters Farm, one of 23 similar operations scattered across this shallow part of the bay that grows the region's distinctively flavored Blue Point oysters.

The journey to Toasted Oysters Farm really began five years earlier, in 2020. Mike was hanging with Ray in Ray's backyard, sharing after-work drinks, and the conversation turned speculative, as often happens when

long-time friends gather to let the day settle.

"I'm going to own an oyster farm," Ray said out of the blue. I can imagine Mike's look of curiosity, and Ray's grin as he sat across from him, sipping his drink. The idea of farming oysters was nothing new to either of them. Ray had been taking a class on oyster farming at the township, but something was different as they sat together then. That day, there was intention. So Mike signed up for the next oyster farming class and the die was cast.

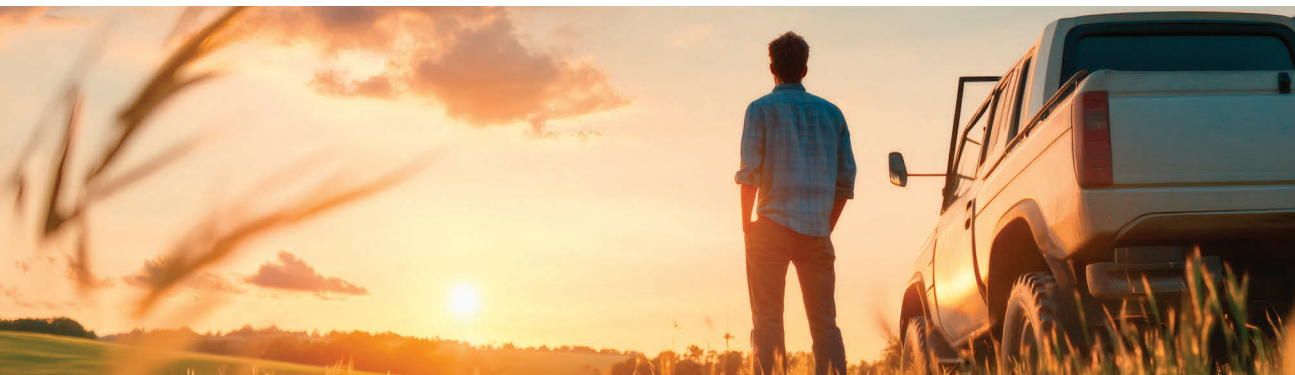
What would follow over the next five years was a journey that Mike, a Navy veteran and former New York City detective, and Ray, a paramedic, could never have anticipated before that fateful day in Ray's backyard.

Oyster Farming 4



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Message from the Editor

Dear farmers and friends,

We are excited to close out our first year of producing our podcast, Small Farms Radio.

For more than two decades, the Cornell Small Farms Program has supported small farms across New York State and beyond. We have seen how farmers work tirelessly to keep their farms viable in a system that was not built for them. We have seen an increasingly diverse group of people who dream of farming try to navigate land access. There are so many stories scattered across our state, just waiting to be told.

Through our Small Farms Radio, we share the stories our farmers: why they do this work, what they struggle with, and their visions for the future.

Small Farms Radio serves as a hub of conversation for New York farmers, providing a window into the state's small-scale agricultural world for the broader public. We center stories of the diversity, hope, and resilience of our farmers and food system.

Our podcast episodes convene farmers, ag educators, and others in the food system to share their thoughts about where they think the future of agriculture should be heading and what they're doing to move it in the right direction.

Farmer?" to a panel of farmers, service providers, and other agriculturalists. Subsequent episodes have featured the innovative land tenure model of West Branch Commons and the story of two farmers from two different generations coming together to keep farmland in agricultural production, as well as what farm transitions have looked like for Northland Sheep Dairy.

We have shared two episodes about mushrooms in New York City moving from the farm to your plate and back again. We highlighted one farmer's unique approach to agriculture as healing, and have more stories to come in the new year.

You can subscribe on your preferred podcast platform to stay connected to Small Farms Radio.

Small Farms Radio is produced by the Cornell Small Farms Program, with contributions from farmers, educators within Cornell Cooperative Extension (CCE), faculty and researchers with the Cornell University College of Agriculture & Life Sciences (CALS), and other service providers across the Northeast. The podcast is supported by a Rural Humanities Grant, which focuses on learning from rural New York's histories, cultures, challenges, and futures.

We welcome anyone who has a story to share.

Our first episode asked the question "Who Is A

The Cornell Small Farms Program Team

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Oyster Farming from 3

When Mike, Ray, Luke (their summer employee), and I reached the farm the morning they took me out, the sun was balanced on the horizon, bathing the sky salmon as Ray throttled the engine down. The cages, supported by black plastic floats and each holding six oyster bags, bobbed gently in the current, longlines holding them in place, anchors at the end of each row. A converted pontoon boat lay anchored alongside the last row of cages, tethered to a floating pier. Together, they served as boat dock, staging zone, oyster sorting area, and packinghouse. Ray brought the boat alongside the floating dock and our workday began.

Oysters start from seed (yes, seed... small, shelled creatures ranging from one to 10 millimeters in diameter) in semirigid mesh bags. In March, Mike and Ray place the bags into floating cages where the oysters will grow rapidly, with an average of 18 months between planting and harvest. Growth peaks in the summer months when the water temperature is warm and nutrient flows are abundant. Each day during summer Mike and Ray work the farm, pulling bags from the cages and sorting them in a homemade tumbler, an ingenious device that looks like an oversized potato washer with holes along its surface that allows the oysters to fall into buckets underneath based on their size.

After they sort the oysters to size, those that need more growth go back into bags and into the floating cages. They rinse, bag, and ice the marketable oysters. The process continues all summer. Maintenance tasks such as de-fouling gear, repairing cages, or adjusting longlines keep them busy throughout the growing season.

Then, finally, autumn brings a lull in activity. After their last time sorting, Mike and Ray bag the remaining oysters, lay them on the bay floor to overwinter, and then haul the floating racks back to land, protecting the gear from ice damage.

Once we were tied to the floating dock, Ray and Luke, a college biology student whose work pace never slowed all day, immediately got busy with the tumbler while Mike and I descended the boat's stern ladder into the 79° water of Great South Bay. There are probably as many ways to access oyster cages as there are oyster farms, and on Mike and Ray's farm all the oyster handling and maintenance is done by wading out into the bay's waist-high water.

A terrestrial farmer has an advantage in that they can walk easily between rows, drive tractors, or listen to a podcast while working. But an ocean farmer spends a seven-hour workday walking against an ever-increasing tidal current while manipulating oyster bags into and out of chest-high floating cages. Nothing is lashed down, and everything moves, all the time. While land farmers may be on constant lookout for snakes and spiders, an attentive oysterman is vigilant against the



The morning commute.

Lee Rinehart / NCAT

painful defensive pinches of the blue crab, which finds the aquatic plants that colonize the floating cages to be ideal habitat.

Mike said the demand for seafood is forecasted to increase by 25% from 2024 to 2032, and to cater to consumers' greater awareness of the benefits of eating locally produced food, Toasted Oysters has adopted a system of traceability through inventory tracking and harvesting software that accurately pinpoints the location of each harvest. They market their oysters to distributors in the Long Island region thanks to the strong relationships they've developed with buyers.

This year they are expanding into New Jersey, Pennsylvania, and Massachusetts, with a goal to increase their inventory to three million oysters by the end of 2025 to keep up with demand. In addition to distributors, Mike and Ray supply four restaurants, diversifying their distribution channels and enhancing their brand presence among people seeking the briny, savory flavor that distinguishes Blue Point oysters from other varieties.

We'd been on the farm since 5:30 a.m., and as the clock approached noon the tide increased. Walking to and from the cages became a laborious push against an even deeper aqueous surge. As Mike and I handed the bulging bags of oysters up to Luke on the floating dock, we decided it was time to sort the marketable oysters, get them on ice, and call it a day. Mike and I had been talking all day as we worked – about the ecological benefits of filter-feeding shellfish, how heavy rainfall events can temporarily shut down an operation, what to look for in a marketable oyster, and the various practices and communal nature of the close-knit oyster farmer community in the bay.

Then our conversation turned toward the pragmatic: I wanted to know his recommendations for beginners.

There are so many moving parts on a shellfish farm: site selection, leasing, regulations, choosing the right equipment, marketing, and acquiring production knowledge. When Mike started out, before he even had a lease, he volunteered on oyster farms to learn the craft.

"Farmers are always looking for assistance," Mike said. Getting out and working on farms acquaints you with the rigors of a normal workday. You get firsthand knowledge of systems and techniques – like which kind of cage system to use



The tumbler Mike and Ray use to sort oysters by size.

depending on water depth, how to install anchors and longlines, what to do about biofouling on cages, and cormorants and gulls pooping on your gear.

If you catch the shellfish farming bug, then it's time to research the available aquaculture lease sites and regulations in your area. "On Long Island," Mike explained, "several entities manage different regions, each with its own specific rules and regulations, in addition to state regulations."

This is one of the benefits of volunteering on farms. You forge a relationship with an established farmer (who may end up being your neighbor) and you can get firsthand information on leasing and regulations.

Volunteering is essential for learning the trade. As Mike noted, "In oyster farming, the motto is 'More flow, more grow, more

dough.'" Good water flow is essential for delivering nutrients to your oysters and is the principal consideration in site selection. Finally, Mike recommended you "consider how the farming technique aligns with your current physical abilities. Farming in deeper water requires a larger boat and additional equipment. Conversely, in shallow water, you may need to physically rock cages for anti-fouling measures and navigate walking in tidal currents."

Mike and Ray are proving that small-scale oyster farming can be a viable business, as they are at a point now where they are scaling to a level that will provide a sustainable income. For those who would begin the journey to having their own oyster farm, or any kind of farm for that matter, Mike's words are salient: "Begin with small steps and maintain a big vision."

To see more, head to toastedoysters.com.

Reprinted from the ATTRA Blog (Oct. 8, 2025), produced by the National Center for Appropriate Technology through the ATTRA Sustainable Agriculture program, under a cooperative agreement with USDA Rural Development.

Lee Rinehart is an ag specialist with NCAT's ATTRA's Sustainable Agriculture Program. He can be reached at lee@ncat.org.

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Planning for Woodlot Productivity

A management plan is a critical starting point for the long-term stewardship of your wooded acreage.

By Peter Smallidge

A commonly sought end result from an owner's physical and financial investment in owning a woodlot is to enjoy and benefit from their efforts. The two general steps to this success are to identify what you want from your woods and set a path to acquire what you want. The woodlot jargon for these steps is to "know your ownership objectives" and to "have a management plan."

Ownership Objectives

The quality and character of your woodlot will depend on what you do, or don't do, with those lands. Defining your forest management objectives will ultimately help you maintain or improve the quality and character of your forest. The pivotal and perhaps most important step is to know your objectives, clearly and explicitly. The range of services available to help you recognize your ownership objectives illustrates the great value placed on this step.

Clearly stated objectives provide direction, simplify the decision-making process, and provide a basis to gauge success. Your management objectives reflect what you value about your woods. What you value might include tangible outputs (e.g., firewood, maple syrup, re-



Many objectives are complementary. These woods were thinned to remove trees of low vigor and improve tree growth. The skid trails were positioned to support the owners' interests in cross-country skiing and bird watching.

enue), intangible outputs (e.g., time with family, privacy, sunsets), or how your land is part of a larger forested landscape.

It is helpful to make your objectives as specific as possible, know that most objectives are compatible, and include others who are or soon will be decisions makers about the property.

The first step in defining your management objectives is thinking about your woodlot: why you own your woods, what you like about it, and how you want it to look in five, 10, 20, or more years. Many people own woodlands because



Master Forest Owner volunteers bring their experiences as a woodland owner on free visits to other woodland owners. The volunteers offer non-technical advice (such as a forester would provide) and can direct the owner to useful people and educational resources.

Photo by B. Blair

they inherited them, purchased them as a place of sanctuary, or purchased them for investment purposes. This is a start for your objectives as it explains perhaps a sentimental value, the value of retreat or seclusion, the value of an investment, or most likely some combination of the three.

You may like to visit the area where you had a pleasant experience with a family member, a scenic overlook, the spot where you can always flush a grouse or run a rabbit, or the stand of red oak or sugar maple that will someday help support you in retirement.

Finally, the vision of your future woods is probably closely aligned with what you like about your woods, although you know your woods will change through time. For example, keeping the memorable spot unchanged, ready access to grouse cover, or an increase in the sawtimber value of your oak or maple stand. Again, those things you value help define your ownership objectives. These thoughts and visions provide the direction and the standards for successful management.

The next step is to ensure your objectives are mutually compatible and realistic for your forest. This is where some owners start to have uncertainty, but there are several sources of assistance available.

Master Forest Owner Volunteers

One resource is a group of woodland landowners like you who are volunteers and trained by Cornell Cooperative Extension as Master Forest Owners (MFOs). MFOs are not foresters – they are woodland owners trained to assist other woodland owners. From their experience as an owner, they can help you think through your objectives and how those objectives might fit with your property. They can help you find educational resources to inform your process that likely include written

publications at ForestConnect.info or archived webinars at youtube.com/ForestConnect, and a variety of other materials.

A good initial document is the Forest Resource Guide for Landowners, something close to an "owner's manual," which is a free download at ecommons.cornell.edu/handle/1813/69464.

Typically, MFOs will schedule a half-day visit with you to your forest, listen to what you value, and help you think about your potential management options. Learn more about a visit from an MFO volunteer at CornellMFO.info.

Many MFOs and other woodland owners belong to groups like the New York Forest Owners Association (NYFOA) and the Catskill Forest Association (CFA). NYFOA and CFA are active, landowner-based organizations full of good information and good people. Forest landowners that are members of NYFOA and CFA often lead woods walks or may be available to discuss forestry with you.

NYS Department of Environmental Conservation

Another option for assistance in identifying an assessing your ownership objectives is the New York State Department of Environmental Conservation (NYS DEC) public service foresters, or something similar in other states. The NYS DEC



The New York Forest Owners Association and other similar groups often host tours of private woodlands. These events give owners the opportunity to talk with other owners, see activities, and learn about the people and resources available to help with planning and management.

public service foresters are trained professional foresters who will visit with you free of charge to discuss your ownership objectives.

As professionals, NYS DEC foresters can provide technical guidance on forest management questions. Like MFOs, the public service forester is a good listener and will help you think about the compatibility and synergies of your objectives. The services offered by MFOs and NYS DEC foresters are complementary. An MFO cannot write plans or make management prescriptions but probably can visit with you sooner than a DEC forester, and the MFO can relate to you as a woodland owner. Although the MFO will likely recommend you contact a DEC

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Woodlot from 5

forester, the MFO will help prepare you to optimally utilize your time with a DEC forester.

Depending on your interests and needs, the MFO or DEC service forester may suggest you engage a professional private consulting forester. Because private consulting foresters provide fee-based services, woodland owners are best positioned if they have their objectives well defined. You can learn more about woodland owner support at dec.ny.gov/lands/4972.html.

Management Planning

The planning that you do for your woodlot or forest is not a difficult process and provides numerous benefits. If you have planned a vacation or a wedding, then you are capable of the planning necessary to get the most from your woodlot. Developing a plan for your woods, a task usually completed by a forester, must include your ownership objectives.

The planning process will involve some thinking on your part, discussions with your spouse, children, or co-owners, collection of resource materials, and working with a forester for technical and professional assistance. These are easy but necessary steps. The good news is that much of this can be accomplished for free or with minimal expense. The expenses you do incur may be tax deductible depending on your situation and will be offset by gains in the efficiency of management and the benefits you receive from your property.

A plan for your woodlot provides benefits that are aesthetic, economic, and logistical in nature. A plan allows landowners to integrate seemingly complicated objectives such as timber harvesting, habitat enhancement for specific wildlife species, and recreational trails. Planning ensures that activities (e.g., boundary marking, thinning) change the property in ways that help accomplish the owner's objectives.

There are different types of plans. The simplest plan, suitable for many owners, is often called a "stewardship plan." These are quite short and have limited detail about the forest vegetation. A "forest management plan" is more detailed

and often involves an inventory of the forest to describe the number and sizes of trees in certain areas. Your private consulting forester can write the forest management plan to also satisfy the requirements for the owner to participate in the NYS Forest Tax Law program known as 480-a.

For landowners who seek IRS recognition as an active participant or proof of the intention of an activity, a forest management plan can document the role of the landowner in the management process or the intent of certain activities. Stewardship plans are free through the state forestry agency. More detailed plans have a fee to cover the time spent on forest inventory, but often these fees are offset by state or federal cost-share programs.

A typical management plan, regardless of the type, has four sections. The first section is a statement of the landowner objectives. The second section describes the property. This might include some or all of the following: a legal property description; an assessment of the condition of the different areas or management units (called "stands") for timber, wildlife, recreation, or other uses; and characterizations of the soils, especially any limitations of use such as poorly drained or stony soils.

The third section will be a work plan or calendar of scheduled events. Except for a forest tax law plan, the work schedule is only a suggestion of activities. You'll likely want a fairly detailed plan for the current and next year, but then more general targets for the following five- and 10-year timeframes. Each year you can check the tasks completed and revise the current year plan. Part of the schedule might include the tools, equipment, or resources you'll need to complete some task.

The fourth and final section is an appendix that includes any number of things including maps, historic records, glossary of terms, aerial photographs, old pictures, list of trees or birds seen on the property, etc.

You have likely recognized that the planning process will be easiest with some outside assistance. Fortunately, there are numerous tools, people, and organizations you can access. Some woodland owners will simply want to contact their NYS DEC service forester and ask for a management plan. Other owners will want to be more involved.

One option is the Forest Resource Guide mentioned above with a link to download. Another is the American Tree Farm System template available at treefarmssystem.org/tree-farm-management-plan-templates.

Summary

Once you have your plan, use it to your full advantage. The combination



Maps of the property are helpful to gain a big picture understanding of your options. This image shows stand boundaries, but additional information might include soil types, trails, and past or future management activities.

Images provided

of your objectives and your plan's work schedule can help you assess whether suggested actions are a temptation or an

opportunity. Use the schedule of activities to plan the yearly events, perhaps when children are home for the summer or in-laws come to visit and you want them to do something productive and useful.

Use the description of the different management units to think about places to put hiking trails, picnic areas, or potential bird watching locations. Take the advice of your carefully chosen forester to help you evaluate offers from someone who shows up at your door and wants to buy your timber – if your plan doesn't call for a timber sale then you're likely best to let the offer pass.

A management plan is a useful tool that will serve you for years to come. It's a critical starting point for the long-term stewardship of your wooded acreage.

This article originally appeared on ForestConnect.com, a program project of Cornell University Cooperative Extension and the NYS Department of Natural Resources. Support for ForestConnect is provided by the Cornell University College of Agriculture & Life Sciences and USDA-NIFA through McIntire-Stennis and the Renewable Resources Extension Act.

Peter Smallidge is the NYS Extension Forester and director of the Arnot Teaching & Research Forest.



These woods were previously thinned to improve the growth of the best trees that are most suited to the local soils. As a result, there was a change in the habitat to allow more sunlight and growth in the understory. One action often has multiple outcomes.



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Reclaiming & Establishing Pastures & Hayfields

In Part 5 of our series "Where's the Grass?" we share there are many ways to establish and improve grazing lands and hayfields.

By Rich Taber

People often ask me how they should go about improving their pasturelands and hayfields. The devil, as they say, is in the details. This all depends on what class of livestock you are feeding, what the condition of the existing grazing lands is, how much equipment you have, and how much you can afford to do.

One of the beauties of pasturelands is that much of the time they don't need extensive work done to them except for normal maintenance activities. Taking soil tests, adding lime if needed, adding manure or fertilizer for needed nutrients, and correct grazing management may be all the pastures need. A brush-hog can be utilized to mow pasture paddocks once a year, maybe.

One can go for years with doing little other than the above listed activities. But there may come a day that you would like to introduce some better and higher quality species of grasses and legumes into the stand. Also, some fields and pastures can be degraded by ruts, enormous woodchuck colonies, and operating equipment on the land when it's too wet. Operating equipment on rough land is hard on both the equip-

ment and the operator.

How can we go about establishing a new pasture? I've written several times before about using the existing native seedbank that is in the soil. Add soil and nutrients, do some brush-hogging, and you may end up having a really nice pasture. However, you may decide you want something better than this, especially if you're trying to graze animals that need a higher plane of nutrition. Dairy cows and animals that are being finished for meat need very high-quality nutrients that may only be provided by having top-notch grasses and legumes.

We may have to use some form of tillage to establish a new seeding. This may



A roller crimper is a very useful tool for killing existing sod in a no-till seeding.

Rich Taber / CCE Chenango

involve plowing, disking, using spring tooth harrows (dragging), picking rocks, rolling and smoothing, and then seeding with a grain drill that has a grass seeder or a Brillion-type seeder. This is full tillage – the type that might be seen more often when establishing a new hayfield – but it certainly can be used for pasture seedings as well. Many small farmers may not have all of the equipment to do all of these activities, and you may need to hire someone to do this for you.

Again, the beauty of a pasture seeding is that it only needs to be done rarely – and sometimes never if you have everything in place. Compare this to row crops such as corn and soybeans where you have to do all kinds of tillage every year with the concomitant fuel, labor, seed, and machinery costs.

There certainly are other less expensive but somewhat less effective ways to improve and establish pastures. You can try frost seeding, where seeds are broadcast in early springtime during maple syrup weather (cold nights followed by warm days). The freezing and thawing allow the seeds to work their way down into the soil, much as nature allows seeds to get established in the wild. Frost seeding can be used to improve smaller sections of a field that need improving rather than expending time and resources over the whole field that may not need it. Broadcast seeders can be mounted on the three-point hitch of a tractor or even an ATV. The disadvantage of frost and broadcast seeding is that it is relatively inaccurate, and it is very hard to get good, even patterns of seed distribution over the field.

Finally, we can discuss no-till seedings. No-till seeders are bigger, heavier built, and much more expensive than a regular



Moldboard plows are used for full, conventional tillage, along with disking, rock picking, and smoothing.

type of seeder or grain drill. The beauty of a no-till seeder is that it eliminates all the tillage, uses much less fuel, and allows seeds to be drilled into an existing sod, drastically reducing soil erosion. However, the existing sod must first be killed with either an herbicide or with an organic roller-crimper.

In this article I will not get into all of the pros and cons of using an herbicide to kill the sod, which usually entails the use of a glyphosate-containing compound. I suspect that many of the Small Farms Quarterly readers would lean more to organic methods, and this is where using a roller-crimper comes in handy.

A roller-crimper is a large, cylindrical-shaped roll with horizontal knife blades attached to it that roll, crush, and kill grass, typically cutting the existing plants in eight locations. Then you can follow this activity with the no-till planter. One disadvantage of a no-till seeder is that they are extremely expensive, and a small-scale farmer will not likely own one. Again, hiring a fellow farmer who does have one can be a win-win situation. Some Soil & Water Conservation Districts own no-till seeders, which can be rented.

There are many varied ways of improving and establishing new pastures and hayfields. It reminds me of the old saying "It takes a whole village to raise a child." Well, it can take a whole village, metaphorically speaking, to put together a new pasture or hayfield. Many small farmers cannot afford all of the equipment or have the skill sets needed to do this task, and you will need to rely on friends, neighbors, and vendors. It may cost a good bit of money, but it can be money well spent.

This article is one of an ongoing series on pasture maintenance and utilization. Previous articles can be accessed in the archives of the Small Farms Quarterly at smallfarms.cornell.edu.

Rich Taber is the Agriculture & Natural Resources Educator at CCE Chenango. He lives on a small farm in neighboring Madison County where he raises beef cattle and rotationally grazes about 30 acres of pasture. He also is an adjunct instructor teaching pasture and forage management at SUNY Morrisville.



No-till seeders are heavy and expensive, but excellent for establishing new seedings, eliminating soil erosion, and all of the labor involved with conventional tillage.

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Futuro en Ag Team Wraps Up Ambitious Season of Farmer Education

The team led five bilingual Farm Field Days from Central New York to Long Island, hosted a monthly cohort-based Farm Field School in the Hudson Valley, and ran a hybrid course on collaborative agriculture.

By Tim W. Shenk

On a hot August day in the Hudson Valley, farmers and farm employees gathered at picnic tables under a stand of trees. The lunch break during this bilingual farm field day lent itself to informal conversation among participants.

"Pay attention to everything that's being said here," an older farmer advised some of the younger participants. "Now's the time for you to be thinking about your future. It's not just about going to work every day – think about a business you could start little by little as you work your other job."

The younger guys nodded and took in the advice.

"Save up, start your own farm," the older farmer continued. "You're still young – you can afford to try something new and start over if you mess it up," he laughed.

Cornell Small Farms Program's Futuro en Ag team wrapped up a productive season of education. The team led five bilingual Farm Field Days from Central New York to Long Island, hosted a monthly cohort-based Farm Field School in the Hudson Valley, and ran a hybrid course on collaborative agriculture.

Participants came from many different backgrounds and are involved in a variety of farm enterprises and businesses related to diverse aspects of the food system. They hold common commitments to family and cultural traditions, share a hunger for best practices in agricultural education, and have a love for the land and the abundance it can produce.

"My father taught me that Mother Earth belongs to God," one farmer noted. "So we can feel at home on the land wherever we are. Our responsibility in this life is to be good stewards of the earth."

Farm Field Days

Futuro en Ag's field days focused on different aspects of farming in New York State: livestock and vegetable production, market access, weed and pest management, growing in high tunnels, postharvest strategies, and more.

Institutional partners such as Glynwood Center for Regional Food & Farming and technical staff from Cornell Integrated Pest Management and Cornell Cooperative Extension (CCE) offices around the state lent their expertise and helped to make the events successful.

Farmers in Tompkins, Orange and Schuyler counties welcomed the ag community to their farms for training and hands-on demonstrations, and Futuro en Ag partnered with CCE Suffolk to host a field day at the Long Island Horticultural Research & Extension Center in Riverhead, NY.

Beyond the technical skills acquired, a central component of the field days is the consistent opportunity to build community across diverse sectors in New York agriculture. Experienced farmers share knowledge with beginning farmers, and aspiring farmers get a chance to hear how others got their start.

Hudson Valley Farm Field School

In 2025 the Futuro en Ag team put into practice a methodology common in Central America, a cohort-based Farm Field School. This approach brings farmers from the same region together regularly to build connections and address common issues and challenges the farmers



Participants in the Futuro en Ag Farm Field School visited the Hudson Valley Farm Hub in Hurley, NY, to learn about a range of pest management strategies. Participantes en la Escuela de Campo para Agricultores de Futuro en Ag visitaron al Hudson Valley Farm Hub en Hurley, NY, para aprender sobre distintas estrategias de manejo de plagas.

María José Oviedo / Cornell Small Farms Program

face in their operations.

Mildred Alvarado, leader of the Futuro project, explained the Farm Field School model. "In our countries, technical experts and Extension associates work much more with cohort groups of producers than one-on-one with farmers," she said. "We get people together regularly to learn techniques and practices that will benefit everyone in a given region. The Farm Field School is a methodology based on learning while doing. Instead of traditional classroom learning, farmers meet in the field to observe, experiment, and analyze real issues together related to their farms. This is practical and participatory learning that's useful for building collective capacity and solving common problems."

Based on the farmers' interests, the Futuro en Ag team and their collaborators established an informal research plot to test several forms of weed management. The project focused on tarping, a method of stretching plastic tarps over beds into which seeds or seedlings will be planted in order to control weed growth without chemicals.

Throughout the Farm Field School, the group carried out several comparative experiments so that the farmers could see differences among the color and weight of the tarps. The team also used complementary manual tools to help with managing the beds before and after tarping.

This practical approach allowed field school participants to see which type of tarp worked best in differ-

ent conditions, and how the technique may reduce labor time spent on weeding and soil preparation, in a natural and non-invasive way.

Alvarado was pleased with the experience of this first year. "We have to thank the farmers first of all for their commitment to this process. It's not easy to take days out of the height of the growing season to do anything that's not directly on your own farm," she said. "Second, we have appreciated the enthusiasm and expertise of the instructors. Everyone has made this experience a priority."

Training Farmers in Collaborative Agriculture

Another aspect of Futuro en Ag's work has been responding to farmers' interest in learning more about collaborative models for farm business management. On Long Island, in New York City, in the Hudson Valley, and in Western New York, collaborative farming projects are taking shape. Farmers seek assistance in everything from legal structures to business planning to funding for equipment and infrastructure.

"Most people starting out in farming today are keenly aware of the many barriers to entry into the industry if they want to start a farm as an individual or a family," Alvarado said. "So there is great interest in learning how to pool their limited time and resources in a group. In that way the collaborative model is very appealing."

The Futuro en Ag team has begun its own education

Futuro Wraps Up 9

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Equipo de Futuro en Ag Concluye Productiva Temporada de Educación para Agricultores

El equipo de Futuro en Ag del Cornell Small Farms Program cerró una temporada intensa y muy productiva. Organizamos cinco días de campo bilingües sobre temas agrícolas, desde el centro de Nueva York hasta Long Island.

A Tim W. Shenk

En un caluroso día de agosto en el valle del Hudson, un grupo de agricultores y trabajadores agrícolas tomaron unos minutos para descansar bajo la sombra. Durante la hora del almuerzo, en medio de este día de campo bilingüe, surgió espacio para una conversación informal entre los participantes.

“Presten atención a todo lo que se dice aquí,” aconsejó un agricultor mayor a algunos de los participantes más jóvenes. “Ahora es el momento de que piensen en su futuro. No se trata solo de ir a trabajar todos los días: piensen en un negocio que puedan iniciar poco a poco mientras tengan su otro trabajo.”

Los jóvenes asintieron y tomaron nota del consejo.

“Ahorren, atrévanse a montar su propio negocio,” continuó el agricultor mayor. “Aún son jóvenes, pueden permitirse equivocarse y empezar de nuevo,” dijo riendo.

El equipo de Futuro en Ag del Cornell Small Farms Program cerró una tempore

rada intensa y muy productiva. Organizamos cinco días de campo bilingües sobre temas agrícolas, desde el centro de Nueva York hasta Long Island. También ofrecimos una Escuela de Campo mensual para productores en el valle del Hudson y un curso híbrido enfocado en cómo fortalecer la agricultura colaborativa.

Los participantes proceden de muchos entornos diferentes. Gestionan una variedad de rubros de producción agropecuaria y negocios relacionados con diversos aspectos del sistema alimentario. Comparten un compromiso común con las tradiciones familiares y culturales, un interés por las mejores prácticas en la educación agrícola y un amor por la tierra y la abundancia que puede producir.

“Mi padre me enseñó que la Madre Tierra pertenece a Dios,” señaló una agricultora participante en los días de campo. “Por eso podemos sentirnos acogidos en la tierra dondequiera que estemos. Nuestra responsabilidad en esta vida es ser buenos administradores de la tierra.”

Días de Campo Bilingües

Los días de campo de Futuro en Ag del 2025 se centraron en diferentes aspectos

de la agricultura en el estado de Nueva York: producción ganadera y hortícola, acceso a los mercados, manejo integrado de plagas, técnicas para cultivar en túneles altos, estrategias poscosecha y mucho más.

Colaboradores institucionales como el Glynwood Center for Regional Food & Farming, y personal técnico de Cornell Integrated Pest Management y las oficinas de Cornell Cooperative Extension (CCE) en todo el estado de Nueva York, aportaron su experiencia y contribuyeron al éxito de los eventos.

Agricultores de los condados de Tompkins, Orange y Schuyler dieron la bienvenida a la comunidad agrícola a sus fincas y granjas para impartir formación y realizar demostraciones prácticas. Además Futuro en Ag se asoció con la oficina de CCE Suffolk para organizar un día de campo en el Long Island Horticultural Research & Extension Center en Riverhead.

Más allá de las habilidades técnicas adquiridas, un componente central de los días de campo es la oportunidad constante de crear comunidad entre los diversos sectores de la agricultura de Nueva York.

Agricultores experimentados comparten sus conocimientos con agricultores principiantes, y personas que aspiran a tener su propio negocio agropecuario tienen la oportunidad de escuchar cómo otros comenzaron.

Escuela de Campo para Agricultores del Valle del Hudson

En 2025, el equipo de Futuro en Ag puso en práctica una metodología ampliamente utilizada en Centroamérica: la Escuela de Campo para Agricultores. Este enfoque reúne de manera regular a los productores de una misma zona para conversar, aprender juntos y buscar soluciones a retos y problemas comunes.

Mildred Alvarado, líder del proyecto Futuro, explicó el modelo de la Escuela de Campo. “En nuestros países,” señaló, “los expertos técnicos y los extensionistas trabajan mucho más con grupos de productores que de forma individual. Reunimos a las personas periódicamente para que aprendan técnicas y prácticas que benefician a todos en una región determinada. Una Escuela de Campo es una metodología muy utilizada en Cen-

Equipo de Futuro 10

Woodlot from 5

being mentored by experts in the realm of ag cooperatives. Dr. Todd Schmit, Cornell University professor, and Nicole Tommell, director of the Cornell Cooperative Enterprise Program, have been instrumental in sharing

their knowledge and institutional connections to build this area of work.

Futuro en Ag has developed a course of study for those

aspiring to do collaborative agriculture. A central component of the instruction has focused on the business side, helping farmers to develop a collective mission and vision, and from there developing a business plan with production benchmarks and market analysis. A group of Schmit's undergraduate and graduate students did baseline research in the spring semester that the team will build on as the business planning progresses.

One participant in the course, José Antonio, was appreciative. “We always come away from these classes better prepared to take the next step in building our cooperative,” he said.

Autumn & Winter Offerings

In autumn, the Futuro team held its monthly bilingual farmer-to-farmer learning circle, Juntos Aprendemos, and collaborated on a two-day hands-on tractor maintenance and safety training with the CSFP Farm Ops team. In addition, the team led a six-week Spanish-language online course, “Cómo Iniciar su Negocio Agrícola,” with 66 participants and is preparing for additional online offerings.

To connect to the Futuro community and find out about upcoming events, go to smallfarms.cornell.edu/projects/futuro or call, text, or write to the team on WhatsApp at 607.793.4969.

Tim Shenk joined the Cornell Small Farms Program in 2023 as the bilingual communications specialist. He brings expertise in Spanish language communication, journalism, research, popular education, and classroom pedagogy. He is responsible for the multifaceted communications strategy for the Futuro en Ag project, and supports Spanish language online and in-person education.



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Systems & Economic Data for High Tunnel Melon Production

Research results by Cornell University Regional Vegetable Specialist Elisabeth Hodgdon and Regional Ag Business Specialist Lindsey Pashow provide growers with data and insights into the production and economic factors that influence the opportunity to profitably produce cantaloupe in a high tunnel environment.

By Kara Lynn Dunn

Increasing consumer interest in local foods availability and the proliferation of high tunnels – heated and unheated – combine to generate local produce sales earlier in the year and extend income opportunities through

year-end for New York growers. Research results by Cornell University Regional Vegetable Specialist Elisabeth Hodgdon, Ph.D., and Regional Agriculture Business Specialist Lindsey Pashow provide growers with data and insights into the production and economic factors that influ-

ence the opportunity to profitably produce cantaloupe in a high tunnel environment.

Hodgdon and Pashow conducted production trials of three different growing systems with two different varieties of cantaloupe melons in 2023 and 2024. They

additionally developed economic budgets for each variety, each system, and each year. This work was funded by the farmer-driven Northern New York Agricultural Development Program (NNYADP). The complete project report is posted at nnyagdev.org.

“In both years, each melon production system in the trials – untrellised, vertical mesh, and double leader – resulted in a net profit; however, growers need to carefully consider factors such as the labor and expenses of each type of growing system,” said Hodgdon.

High Tunnel Melon 11

Equipo de Futuro de 9

toamérica que se basa en aprender haciendo. En lugar de clases tradicionales, los productores se reúnen directamente en el campo para observar, experimentar y analizar juntos los problemas reales de sus cultivos. Es un aprendizaje práctico, participativo y muy útil para fortalecer capacidades y resolver retos comunes.”

Tanto los agricultores establecidos como los principiantes, tenían preguntas sobre el manejo de plagas y malezas. Muchos agricultores del valle del Hudson cultivan lo que a menudo se denomina “cultivos étnicos,” es decir, verduras y hierbas especiales que las comunidades de inmigrantes buscan de sus países de origen. Suelen venderse bien en los numerosos mercados de la ciudad de Nueva York.

Basándose en las necesidades de los productores, el equipo de Futuro en Ag con otros técnicos establecimos de una parcela de investigación informal con una variedad de formas de control de malezas.

En el proyecto usamos tarps, que son lonas de plástico resistentes que se colocan sobre el suelo para ayudar a controlar las malezas sin usar químicos. Este método, también conocido como tarping, permite cubrir una parcela durante varias semanas para bloquear la luz del sol y reducir el crecimiento de malezas antes de sembrar.

Durante la Escuela de Campo hicimos varios experimentos comparativos para que los productores pudieran observar las diferencias entre los colores y tipos de tarps. Probamos, por ejemplo, lonas negras, transparentes y otras variaciones, y analizamos cómo cada una afectaba la germinación de malezas, la humedad del suelo y la preparación del terreno. También utilizamos herramientas manuales complementarias para el manejo previo y posterior al uso de las lonas.

Este enfoque práctico les permitió a los productores ver directamente qué tipo de tarp funcionaba mejor en diferentes condiciones, y cómo esta técnica puede reducir el trabajo de deshierbe y mejorar la preparación del suelo de forma natural y menos invasiva.

Alvarado se mostró satisfecha con la experiencia de este primer año. “Primero, tenemos que agradecer a los agricultores

por su compromiso con este proceso. No es fácil dedicar tiempo en plena temporada alta a actividades fuera de su propia finca,” señaló. “También hemos valorado profundamente el entusiasmo y la dedicación de los facilitadores. Todos han puesto esta experiencia como una prioridad.”

Formación en la Agropecuaria Colaborativa

Otro aspecto del trabajo de Futuro en Ag, ha sido responder al interés de los productores por aprender más sobre los modelos colaborativos para la gestión de negocios agropecuarios. En Long Island, la ciudad de Nueva York, el valle del Hudson y el oeste de Nueva York, están surgiendo proyectos agropecuarios colaborativos. Los productores buscan asistencia en temas como las estructuras legales, planificación empresarial, y la financiación para equipos e infraestructura.

“La mayoría de las personas que se inician hoy en día en la agricultura son muy conscientes de las numerosas barreras que existen si quieren establecer una finca como individuos o como familia,” afirmó Alvarado. “Por eso hay un gran interés en aprender a compartir el esfuerzo, el tiempo y los recursos que son limitados. En ese sentido, el modelo colaborativo resulta muy atractivo para muchas personas.”

El equipo de Futuro en Ag ha comenzado su propia formación con la ayuda de expertos en el ámbito de las cooperativas agrícolas. Todd Schmit, profesor de Cornell University, y Nicole Tommell, directora del Cooperative Enterprise Program de Cornell, han sido fundamentales a la hora de compartir sus conocimientos y sus conexiones institucionales para desarrollar esta área de trabajo.

Futuro en Ag ha desarrollado un curso de estudio para aquellos que aspiran a dedicarse a la agricultura colaborativa. Un componente central de la formación se ha centrado en el aspecto empresarial, ayudando a los productores a desarrollar una misión y una visión colectivas y, a partir de ahí, a elaborar un plan de negocio con objetivos de producción y análisis de mercado. Un grupo de estudiantes universitarios de Schmit realizó una investigación de base en el semestre de primavera que el equipo utilizará como base a medida



Melissa Phillips and Jack Whettam, owner-operators of Hidden Acre Farm in Bloomingburg, NY, welcomed two dozen farmers to a bilingual farm field day on their five acres of intensive vegetable and flower production in August. Melissa Phillips y Jack Whettam, propietarios y operadores de Hidden Acre Farm en Bloomingburg, NY, les dieron la bienvenida a más de 20 productores en un día de campo bilingüe en su finca de cinco acres de producción intensiva de hortalizas en agosto. Cornell Small Farms Program

que avance la planificación empresarial.

José Antonio, uno de los participantes en el curso, se mostró agradecido. “Siempre salimos de estas clases mejor preparados para dar el siguiente paso en la construcción de nuestra cooperativa,” afirmó.

Ofertas Educativas de Otoño e Invierno

En otoño, Futuro en Ag fue anfitrión del círculo de aprendizaje bilingüe mensual de productor a productor, Juntos Aprendemos, y colaboró en una capacitación práctica de dos días sobre mantenimiento y seguridad de tractores con el equipo de Farm Ops de CSFP. Impartió un curso en línea de seis semanas en español, “Cómo Iniciar su Negocio Agrícola,” con 66 participantes y está preparando nuevas ofertas educativas en línea.

Para conectarse con la comunidad de Futuro y obtener información sobre los próximos eventos, visite smallfarms.cornell.edu/projects/futuro o llame, envíe un mensaje de texto o escriba al equipo en WhatsApp al 607.793.4969.

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CCE's Game of Logging Helps Communities Step Up Storm Response

Training sessions hosted locally by CCE Hamilton equip community members with essential skills such as safe chainsaw use, precise notching, and storm-specific techniques to clear obstacles efficiently and safely.

By Paul Treadwell

Violent storms can leave trees tangled in power lines, blocking roads and trails. Getting downed trees cleared quickly is crucial to helping New York State communities recover. Nowhere is this more important than in the Adirondacks, where inaccessible roads and snowmobile, hiking, and biking trails not only compromise safety but can also devastate local tourism economies.

Helping those communities improve their response is the Game of Logging program hosted by CCE Hamilton.

Prompted by two area county highway superintendents and supported by the Workforce Development Institute, CCE Hamilton began hosting Game of Logging training sessions locally and created a more accessible learning opportunity.

The hands-on training facilitated by CCE equips community members with essential skills such as safe chainsaw use, precise notching, and storm-specific techniques to clear obstacles efficiently and safely.

"Game of Logging teaches respect for

the chainsaw and each other, making jobs quicker and safer," said trainer Bill Lindloff. By fostering a shared language and confidence among local responders, the program helps open roads faster, reduce trail damage, and protect community members during emergencies.

Since 2022, 200 participants have attended CCE Hamilton's 22 Game of Logging sessions. The most recent training was held at Piseco Community Hall in the Town of Arietta. During the event, all trees felled were on the site of a future pickleball court, with additional trees staged to create complex, sequence-dependent

scenarios. Before each cut, Lindloff had students verbalize their plan and, when safe, learn from mistakes. Participants included members of the Hamilton County Highway Department, DEC staff and private tree services.

"Going through this course, Bill has really taught us how to respect the chainsaw and how to respect each other on the site," said Ben Short, road supervisor for the Hamilton County Highway Department. "This training makes the work quicker and safer for everyone."

Game of Logging 12

High Tunnel Melon from 10

Enterprise budgets were extrapolated for full production load in a 30-by-96-foot high tunnel. Net income by variety in the 2024 trials ranged from \$1,451.78 for the mesh-grown 'Tasty Bites' (200 plants/tunnel) to \$3,473.78 for the mesh-grown 'Sugar Cube' (200 plants/tunnel).

The two-year average net income ranged from \$1,690.11 for the mesh-grown 'Tasty Bites' (200 plants/tunnel) to \$2,624.67 for the untrellised 'Sugar Cube' (160 plants/tunnel).

"We often compare the net income opportunities of the crops we trial for high tunnel production with that for consumer-popular and profitable high tunnel-grown to-

matoes. A skilled high tunnel tomato grower with strong markets and pricing may prefer to continue with that crop; however, if a grower has multiple tunnels, an interest in diversifying crop offerings, and local marketing potential for melons, melons may be a profitable option," Pashow commented.

The enterprise budget calculations include fixed costs for land and equipment and 30 variable costs that include labor, crop preparation, fertilizer, beneficial insects, materials, and other factors.

In 2024 the highest yielding system was the untrellised 'Sugar Cube' variety, producing 13.3 lbs. of marketable fruit per plant vs. 9.63 lbs. per plant for untrellised 'Tasty Bites' as the highest yielding system in 2023.

The total number of marketable melons per plant ranged from four to six, with the mesh-trellised and untrellised treatments of the 'Sugar Cube' variety producing six melons on average per plant.

NNYADP high tunnel production research to help market growers overcome the challenges of northern New York's short growing season and weather extremes has evaluated



NNYADP research trials in 2023 and 2024 evaluated three growing systems and the economics for high tunnel melon production in northern New York. (L - R) Vertical mesh; untrellised ground production; vertical double leader trellising.

Elisabeth Hodgdon / Cornell University

more than a dozen crops, including tomatoes, miniature cabbages, sprouting broccoli, winter season greens, summer lettuce, fall-bearing berry crops, cut flowers, and crops not traditionally grown in high tunnels at the time, including seedless cucumbers, fresh ginger, turmeric, basil, zucchini, and green beans.

NNYADP year-to-year research results are posted under the Horticulture/Local Foods tab at nnyagdev.org.

Funding for the NNYADP is supported by the New York State Legislature through the NYS Assembly and administered by the NYS Department of Ag & Markets.

For more information on this and other high tunnel crops production research, contact Elisabeth Hodgdon at 518.650.5323 or eh528@cornell.edu; and Lindsey Pashow at 518.569.3073 or lep67@cornell.edu.

Kara Lynn Dunn is the publicist for the farmer-driven NNYADP.



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96'x30' High Tunnel	Sugar Cube Net Income	Tasty Bites Net Income
2023-2024 Average		
Double Leader (200 plants per tunnel)	\$1,897.32	\$1,885.32
Mesh (200 plants per tunnel)	\$2,202.11	\$1,690.11
Untrellised (160 plants per tunnel)	\$2,624.67	\$1,841.32

96'x30' High Tunnel	2023 Net Income	2024 Net Income	Average Net Income
Sugar Cube, DL	\$2,233.75	\$1,560.89	\$1,897.32
Sugar Cube, Mesh	\$930.44	\$3,473.78	\$2,202.11
Sugar Cube, Untrellised	\$2,602.47	\$2,646.86	\$2,624.67
Tasty Bites, DL	\$2,231.75	\$1,538.89	\$1,885.32
Tasty Bites, Mesh	\$1,928.44	\$1,451.78	\$1,690.11
Tasty Bites, Untrellised	\$1,853.37	\$1,829.26	\$1,841.32

This table shows the average net income calculations based on the NNYADP high tunnel melon trials of two varieties of melons by growing system.

Lambing Season Math

How many lambing seasons per ewe can you have each year?

By Ulf Kintzel

I am frequently asked about the number of lambing seasons per ewe each year. Many times, the people who ask are surprised to learn that I have “only” one lambing season every year. Or they start the conversation by stating they want their sheep to lamb twice a year. Also, a thought often in people’s minds is to let sheep lamb every eight months or, which is the same, three times in two years.

My one and only lambing season is in spring, mainly in March. I let my sheep lamb in the barn. There are several benefits to once-a-year lambing as well as to lambing in spring:

- I lamb during a time of year that is favorable in weather since hard frost is no longer expected. The nights at or below zero-degree temperatures usually end in February. There are no flies or other bothersome insects present at that time. On the other hand, there is no heat, which can make lambing difficult for a ewe.
- The March-born lambs will start grazing in April, when the pasture is greening up and will have the most nutritious forage possible during their most rapid growth period. At no other time of the year is pasture as high in protein and energy than in spring and early summer.
- When the summer pasture growing slump hits, I can start reducing the size of the flock by culling the old ewes, selling the first market lambs, and having the lambs for breeding purposes picked up.
- During autumn’s pasture growth flush, when weight gains of market lambs are lower because of the lack of energy in perennial pasture, I have very few market lambs left to fatten.
- The ewes have ample time in late summer and early autumn to regain weight and be in good condition at breeding season in October.
- During winter, when the feeding cost is highest due to having to feed stored feed, I have only my ewes, my replacement ewe lambs, and my rams to feed but no

market lambs. It reduces my feeding cost a lot.

- The peak in workload is only once a year, which allows for some downtime in autumn and winter. The recovery time is particularly important as I get older. That makes the system sustainable.

This is what works for me. The argument against it is that lamb prices are the lowest when demand is lowest (summer) or the bulk of market lambs are entering the market (autumn). I do not depend on seasonal prices since the price for my market lambs is locked in per contract and breeding stock prices do not depend on the season. But for others, selling lambs later in winter or early spring can be more profitable if they have a good way of fattening lambs with haylage or corn silage or even grain.

Stockpiling pasture in areas where the climate allows grazing well into winter or seeding fields with triticale, Italian ryegrass, Brassicas and the likes for winter grazing can be an alternative to being able to supply lambs at different times of the year. Still, it would be one lambing season “only” – just at a different time.

What are the potential downsides of having lambs just once a year? There is one I can think of – lambs that are ready for the market can only be offered over a period of a few months each year. Most of the year a producer with a once-a-year lambing season will not have market-ready lambs available. That is potentially a problem for a producer who sells lambs to a vendor, a distributor, or a supermarket chain.

In the past, I remedied that problem in part by having a staggered lambing season: half of the flock lambed in January, half of the flock in April. This allowed me to supply lambs to a couple of vendors for a longer period throughout the year. Since my market is now mainly selling breeding stock and very few market lambs are being sold to vendors, I no longer practice the staggered lambing seasons. However, please note, while practicing a staggered lambing season, I still let each ewe lamb just once a year.

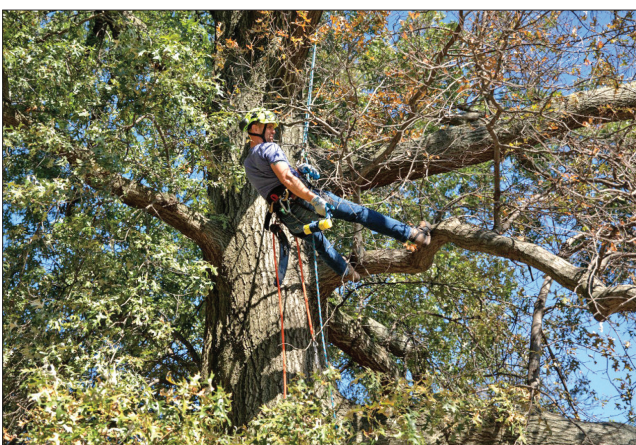
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Beyond Hamilton County, Game of Logging workshops have been hosted by a number of CCE offices including those in Columbia-Greene, Wyoming and Orange counties.

The locally accessible, high-quality instruction of the Game of Logging program is a hallmark of CCE Hamilton’s mission to build community resilience. “We bring people together to ensure accessible, effective

learning,” said Jamila Page, CCE Hamilton program director. “With this ongoing investment in local skills, Hamilton County is better prepared for future storms – making it a safer place for residents and visitors alike.”



Since 2022, 200 participants have attended CCE Hamilton’s 22 Game of Logging sessions.

Photo submitted



Lambing in March takes place in my barn.



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Eco-Friendly Ag Practices May Be Easier Than Farmers Think

New research shows that labor is thought to be a bigger barrier for farmers to adopt climate resilient practices than it actually is.

By Caitlin Hayes

Rotating crops, using compost, adding cover crops and flower strips, and reducing tillage are practices that can make farms resilient to climate change and bring environmental benefits, but Cornell researchers have found a culprit for low adoption of these interventions in the U.S.: farmers perceive that the practices increase labor more than they actually do.

In the study, published Oct. 24 in *Agriculture & Human Values*, researchers surveyed more than 500 fruit and vegetable farmers nationally and conducted in-depth interviews with nearly 50 farmers in New York and California. Farmers named three aspects of labor (cost, time, and complexity) as the main barriers to using seven out of eight agroecological practices – practices that leverage ecological processes to improve agriculture and benefit the environment. Farmers who had never used the practices perceived greater labor requirements than those who had used them.

“When people talk about agroecological practices, they often assume it’s not really viable in the U.S. context,”



In an in-depth interview with Cornell researchers, a New York farmer explained how cost-share programs offset the increased labor associated with planting cover crops, which help reduce soil erosion on his sloping fields.

said second author Rachel Bezner Kerr, professor of global development in the College of Agriculture & Life Sciences (CALS). “This paper really shows that actually it is possible for American farmers to use these practices and that the barriers are lower than they may have thought.”

The authors, including researchers from the Nature



Harvesting mixed salad greens, a small-scale farmer in California described in interviews a cooperative model of equipment sharing that brought him closer to neighboring farmers.

Images provided

Conservancy, said the study underlines a need for more farmer-to-farmer knowledge sharing to help dispel myths and increase the use of agroecological practices.

“When you look around the world at how agroecology is

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Where do I believe a lambing season every eight months (or three times in two years) makes sense? It’s at large farms with hundreds or even thousands of ewes that need a steady supply of lambs for

large vendors or supermarket chains, where such a steady supply is absolutely needed year-round to be able to secure such contracts. Such large farms with employees can set up a management

system that smaller family farms often cannot without a high human toll. It’s much harder for a single operator to do that over many years.

Of course, you will need a breed of sheep that breeds out of season, meaning the ewes cycle throughout the year. Many sheep breeds only cycle in autumn and are unsuitable for a system of three lambing seasons in two years.

Years ago, I briefly and on limited scale had ewes lambing every eight months by shortening the breeding intervals on a select number of ewes. The shorter times in between lambing did initially bring more lambs, but it also shortened the productive life of these ewes. The time in between lambing over the years was not long enough for the ewes to recover properly. Also, the lambing percentage started dropping in subsequent lambing cycles due to the shorter recovery time. Overall, not much of anything was gained but more work was required.

Also, more lambs had to be fed at a higher cost due to the seasons they were born in. Keep in mind, though, my sheep are grass-fed. I find it plausible that with heavy grain feeding the ewes will likely regain a good body condition quicker. But this too comes at a cost.

Personally, I will continue having a single lambing season in March. The profit margin is highest on these spring-born lambs due to the lowest possible cost of raising them, grazing them on the most nutritious pasture of the year. Once-a-year lambing is in my view also the most sustainable option, both for the animals and the operator.

What about lambing two times per ewe per year? The gestation time of a ewe is



Once-a-year lambing in March works best for me.

Ulf Kintzel / White Clover Sheep Farm

five months. A lamb needs to nurse on the mother for a minimum of two months before it can be weaned. That makes it seven months for one cycle at a minimum. Multiplied by two, you end up having a total of 14 months. That is two more months than we have in a year.

In addition, ewes don’t come into estrus (heat) again for about a month to two while nursing lambs because of high levels of the hormone prolactin, which inhibits the release of the hormones that cause the ewe to start the reproductive cycle again. There you have two reasons why twice a year lambing per ewe is impossible.

Ulf Kintzel owns and operates White Clover Sheep Farm and breeds and raises grass-fed White Dorper sheep and offers breeding stock suitable for grazing. He is a native of Germany and has lived in the U.S. since 1995. He farms in the Finger Lakes area. His website is whitecloversheepfarm.com. He can be reached by email at ulf@whitecloversheepfarm.com or by phone during “calling hour” indicated on the answering machine at 585.554.3313.

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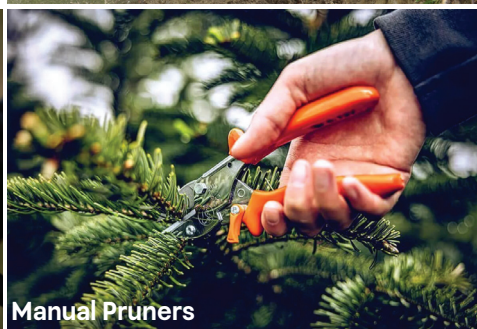
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Farmers & Scientists Partner to Support Biodiversity on New York Dairy Farms

The push for sustainability metrics for the dairy industry is ever growing. This includes metrics for air and water quality, water use, and most recently above-ground biodiversity.

By Madeline Hanscom

New York dairy farms are complex and cyclical. Dairy farmers in upstate New York focus not only on their cattle but also on growing a large portion of their cattle feed on their own land. In addition, most farms have acres that are not in production, providing valuable ecosystem services while offsetting greenhouse gas emissions.

Some farms in upstate New York have up to 200 to 300 acres of land not in use for forage and feed production, from vast spans of forest that house natural ecosystems to native grasslands that support pollinators which promote prosperous crop production. Biodiversity influences nutrient cycling, genetic diversity,

and pollination, uniquely supporting the resilience of our farms. Protecting these non-production areas is of tremendous value for dairy sustainability.

While the positives of biodiversity are well known, how to measure on-farm biodiversity is less well known. The Nutrient Management Spear Program (NMSP) team decided to dig deeper into the matter.

"It started out as a side project in 2023. It was something we decided to look into since a lot of people in the dairy industry were asking about it," said Karolyn Auer, dairy sustainability research assistant. "We quickly realized that a lot of the work that we do ties in more closely with biodiversity than we had initially thought."

Under the supervision of Olivia Godber, NMSP research associate and dairy sustainability lead, and Quirine Ketterings, professor of whole-farm nutrient management and NMSP's lead, Auer has been working hard to examine how biodiversity metrics could be added to already ongoing assessments of greenhouse gas emissions and nutrient balances.

"Many of the variables that we look at when we're assessing greenhouse gas emissions and nutrient mass balances also play a role in maintaining and preserving above-ground, on-farm biodiversity," said Auer. "For example, we consider the impacts of animal density, manure application, inorganic fertilizer application on nutrient use, greenhouse gas emissions, and biodiversity."



A crop field bordered with pollinator-supporting wildflowers.

Right now, NMSP is working alongside farmers to figure out how they can assess species presence and abundance within a farm's boundary (on-farm biodiversity) in a way that doesn't add much work (if any) for the farmer.

Drawing from the pitfalls and advantages of measurement methods that previous researchers have used, the team is looking for a middle ground, seeking to assess on-farm, above-ground biodiversity accurately without incorporating excessive labor, which can be costly. Consider

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operationalized, and how it really thrives, it's often based on a social component which is underdeveloped in the U.S.," said first author Jeff Liebert, Ph.D., now at the University of British Columbia. "Agroecology is really about context-specific, place-based solutions, and there are a lot of opportunities to help develop local, farmer-led movements and to find ways to support farmers connecting with one another."

The authors write that the eight practices included in the survey – the use of compost, reduced tillage, intercropping of different plants, flower strips, crop rotations, cover cropping, and border plantings – generally do require more complex management, although researchers have found the practices can pay for themselves through increased productivity. The interventions also support biodiversity, can improve water and air quality, and can lower emissions and susceptibility to flooding and drought.

"There's robust scientific evidence that these practices can build resilience for farms to climate impacts," said Bezner Kerr, who said she was even more convinced of this after serving on the United Nations' Intergovern-

mental Panel on Climate Change. "I think that's an important message – that it's beneficial as a society that we have these practices incorporated, but it's also beneficial to the farm and their stable income and ability to maintain production."

The researchers found that adoption of the practices lagged particularly on large farms, which control the vast majority of farmland in the U.S. Farmers of larger operations reported more intense and often systemic labor challenges, including scarcity of farmworkers and greater pressure from state-specific minimum wage increases. They were also more likely to pursue mechanization.

"There's a bigger question here about the type of world we're moving towards and the types of potential solutions we're willing to grapple with," Liebert said. "If we replace humans with machines, it forecloses the potential pathway to farm work that's really meaningful and dignified."

Taking into account the complexities of labor challenges for farms of different sizes could improve efforts to promote an agroecological movement in the U.S., the authors write. Liebert also said there should be more conversation around the broader effects of non-agricultural policies and how they can make investing in labor more difficult – especially for farmers who

feel squeezed by market demands for "cheap" food.

"Fast-forward 10 years from now," he said. "You may have a lot fewer farmworkers engaged in agriculture because farmers have shifted to greater mechanization and simplified farming systems, which could reshape rural communities and perpetuate numerous environmental issues."

In interviews with farmers, often lasting more than several hours, sometimes over meals, Liebert found that's not necessarily the future farmers want.

"I met many people who care a lot about feeding people and trying to protect their workers, but there are all of these struc-

tural factors that are out of their control," said Liebert. "This type of research really gives you a much better, deeper sense of the complicated landscape in which farmers are making these decisions."

Additional co-authors include Alison Power, professor of ecology and evolutionary biology in the College of Arts & Sciences and CALS; Matthew Ryan, professor of soil and crop sciences in the School of Integrative Plant Science (CALS); and Sasha Genet and Abigail Hart, M.S.,

from the Nature Conservancy.

The study was supported by the Cornell Atkinson Center for Sustainability as part of its joint research program and 12-year partnership with the Nature Conservancy.

This article originally appeared in the Cornell Chronicle.

Caitlin Hayes is a staff writer for the Cornell Chronicle, focusing on stories related to impact and sustainability.



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Finding the Tractor That Fits Your Farm

A tractor can open the door to greater efficiency and safer work – or it can become an expensive mismatch. A recent Tractor Operations & Safety Workshop led participants through the basics of tractor operations with hands-on guidance.

By Rich Mattingly

For many farmers, purchasing a tractor is both exciting and intimidating. A tractor can transform how work gets done, but it also represents one of your most significant farm investments. The right machine, well-matched to your operation, can save time, reduce labor, boost safety, and serve you for years. The wrong one can sit idle, drain your budget with repairs, or actively limit your productivity.

A recent two-day Tractor Operations & Safety Workshop hosted by the Farm Ops and Futuro en Ag projects of the Cornell Small Farms Program emphasized these themes. Lead Instructor Shane LaBrake, supported by CSFP staff and the team at the Homer C. Thompson Vegetable Research Farm, walked participants through the fundamentals of safe tractor operation and thoughtful equipment selection. Those lessons echo throughout this guide: when farmers under-

stand how tractors truly work in the field, they make better decisions about what to buy, how to use it, and how to plan for long-term farm goals. If you want to learn more about setting those goals and exploring the social, emotional, financial, and ecological aspects of operating a farm business, Cornell Small Farms offers a free Plan Your Farm online course (at smallfarmcourses.com/p/plan-your-farm-hub).

This article offers a practical, step-by-step framework for evaluating whether a tractor is right for you now, determining what size and features you need, choosing implements, navigating new vs. used, maintaining service, and planning for growth, all with an eye toward long-term value. Several concepts covered in the workshop appear here.

Do You Need a Tractor Now?

Not every farm or operation needs to purchase a tractor immediately. For small-scale or diversified farms, other small-



Veterans get hands-on practice in the field during a recent Cornell Small Farms tractor training held this year at the Homer C. Thompson Research Farm, building confidence and essential skills for safe, effective equipment use.

er-scaled power tools may suffice while you grow your business and identify the workload.

Ask yourself:

- What are the daily and seasonal tasks on my farm or homestead?

- How many acres do I manage, and what kind of field work, material handling, haying, tillage, or loader work do I do?

- Are there tasks I currently outsource or rent equipment for?
- Can I rely on walk-behind

machines, ATVs/UTVs, shared equipment, or custom-hire services for now?

If your farm's operations are mostly hand-scale production, light tillage, or small livestock chores, or you are still developing your systems, a tractor may not yet make financial sense. On the other hand, if you find yourself frequently moving heavy materials, mowing large areas, doing loader work (manure, compost, snow), tilling several acres, or making hay, then a tractor becomes a much more

essential tool.

Examples of “tractor-worthy” tasks include:

- Brush-hogging pastures or managing fields before they revert to brush or forest
- Haymaking (mowing, tedding, raking, baling, hauling)
- Tillage and bed preparation (plowing, disking, cultivating, raised bed shaping, stone-picking)
- Loader operations (feeding animals, moving compost/manure, snow removal)
- Hauling (wagons, firewood, log skidding, pastured hen houses, hauling sap to a sugarhouse)
- Post-setting (permanent fencing, small scale structures)

If these tasks fit your operation, a well-chosen tractor is more tool than luxury. Participants in the workshop gained insight into this distinction, especially those who had never operated a tractor before. One attendee, Joe Newlon, an Air Force veteran, shared that climbing into the operator's seat for the first time shifted his understanding of when and why a tractor becomes essential, saying, “Until today, I didn't really grasp how much a tractor does. Getting behind the controls for the first time showed me it's not just a big machine, it's a tool that makes real farm work possible.”

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ROUTES IN NEW ENGLAND & EASTERN TO CENTRAL NEW YORK

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ering this, they realized that there can be a lot of indicators of biodiversity hidden in farmers' everyday practices.

“Something as simple as information about reduced tillage or reduced pesticide use can give us an idea of what's happening on the farms when it comes to biodiversity. We really want to make sure that they are getting credit for the things that they should be getting credit for,” Auer said. “And hopefully, down the road, there will be some kind of added value for these practices, whether that be for the consumer, or increased crop productivity and land preservation.”

Given the support for sustainable practices from dairy industry leaders, several farmers emphasized to the NMSP team that even if they don't receive a premium, they hope this effort will contribute to their ability to secure stronger, long-term contracts from their customers – providing them with more financial security and stability.

Currently, the NMSP team is working to facilitate conversations with farmers and review their list of potential biodiversity indicators. They hope this will give them a better idea of what

makes sense when it comes to practical feasibility and usefulness of biodiversity assessments on-farm.

“We need nature. It's important,” said Auer. “Biodiversity, and nature as a whole, supports the land that we farm on, the land that we live off of. Without biodiversity, we lose crucial ecosystem services that make us successful when it comes to agriculture and supporting a growing population.”

This article originally appeared in CALS News.

Madeline Hanscom is a communications assistant for Cornell CALS's Nutrient Management Spear Program.



A field with a tree border.

Photos by Karolyn Auer

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Matching Weight, Horsepower & Size to the Job

Once you've decided a tractor is the right tool, it's important to evaluate weight, frame size, and horsepower as separate factors. A tractor that is too light may not have enough ballast or ground contact for safe traction, especially when lifting or pulling, which can increase the chance of instability or tipping. Low horsepower, however, is a different issue. Even a well-ballasted tractor can be underpowered for certain implements, leading to slow performance, stalling, or the inability to operate equipment at the correct speed.

A tractor that is too heavy can cause soil compaction, struggle in soft ground, and be physically oversized for orchards, woods, or small-acreage layouts. Excessive horsepower, meanwhile, often means you are paying for capacity you will not use, and it may require larger, more expensive implements to match the engine's power. Evaluating each of these factors on its own helps ensure the tractor you choose fits the real conditions and workload of your farm.

General horsepower ranges for small to mid-scale farms:

- 20 - 40 HP – Suitable for small vegetable operations, orchards, farms under 10 acres. Good for mowing, light loader work, light hauling, seeding, tilling, and cultivation
- 40 - 70 HP – Versatile for diversified farms, livestock operations, and hay producers covering 10 - 25 acres. Handles heavier implements like plows, discs, planters, seed drills, hay conditioners, square balers, or post-hole augers.
- 70 HP+ – Best for farms with more than 25 acres, heavy field tillage, large-scale hay production, loader/backhoe work, or implements that demand high lift or pull (category 2 or 3 hitch).

It is worth noting that higher horsepower machines use more fuel, often need heavier implements, and may be harder to maneuver in tighter farmyards or around high tunnels. Bigger is not always better. Fit the machine to the tasks as well as the farm scale and infrastructure.

Some additional sizing considerations:

- If you'll use a front-end loader frequently, ensure lift capacity matches the weight of materials you'll move.
- Terrain matters – 4WD and good traction are important if you have slopes, mud, snow, or uneven ground. These also help with tillage.
- Storage and maneuvering space – Make sure your farmyard or structures can accommodate the size.
- Future implements – Consider planned growth but avoid oversizing for tasks you may never adopt.

These same principles were emphasized repeatedly during the workshop. As participants practiced on multiple tractor models, they saw firsthand how horsepower and weight affect stability, traction, and safe implement use. Another participant, Ricardo Orellana, shared, "In my opinion it was a great course for building good habits and practices. It was really useful to know more about tractor safety and selecting the right implements for your tractor and your farm."

Key Features to Look For

Whether new or used, selecting a tractor with the right features is crucial to long-term usability and safety. For many beginning or transitioning farmers, buying used may be financially more realistic, but features still matter. For a comprehensive guide to tractor terminology, visit TYR tractor's guide (at tym.world/en/all-how-tos-checklists/tractor-terminology). The more you understand tractor functions and common terms, the better equipped you will be to make your decision.

The following is a list of essentials, once understood, that will help you judge the value of a new or used tractor:

1. Live hydraulics and live PTO
2. Three-point hitch (Category 1 for many small farm



Cassandra Garling (left), farmer-veteran and a participant in the Cornell Small Farms Program's tractor training, practices safe tractor operation with guidance from instructor Ethan Tilebein, field assistant, Thompson Vegetable Research Farm.

- implements)
3. Diesel engine
 4. Two sets of hydraulic outlets
 5. Front-end loader
 6. Rollover protective structure (ROPS) and seatbelt
 7. 4WD
 8. Moderate hours on used equipment
 9. Good service/parts network

Many of these safety features were highlighted during the event, especially ROPS use, safe loader operation, and the importance of understanding how PTO and hydraulics behave under load. If you end up with an older tractor that does not have a ROPS or a seatbelt, you should immediately have them installed prior to farm use. There is a national rebate program for the installation of ROPS at ropsr4u.org.

Choosing Implements That Add Real Value

A tractor is only as useful as its implements. Before you buy, list your most time-intensive tasks and choose implements or attachments that address those first.

Common starter implements:

- Front-end loader
- Rotary cutter or mower
- Plow or disc harrow
- Rear blade or box scraper
- Pallet forks or bale spear

During the workshop, hands-on time with implements helped participants understand how these tools interact with the soil, what makes an implement safe or unsafe to attach, and how implements influence overall farm efficiency. Joe Habecker, an active-duty soldier in the U.S. Army, noted how the experience helped him feel more equipped to select the right tools as he works toward starting his own farm.

New vs. Used vs. Leasing/Renting

This is a pivotal decision. Each option has trade-offs relating to cost, reliability, maintenance, features, and long-term flexibility.

New equipment often comes with a warranty, updated safety features, and strong dealer support, though the upfront cost is higher. Used equipment can be far more economical, but its condition varies widely and usually requires a careful inspection to uncover wear, hidden mechanical issues, or deferred maintenance.

Service for older machines may also mean relying on independent mechanics or sourcing hard-to-find parts. Leasing or renting can be a smart option for seasonal needs or for testing what size or style of tractor fits your farm while also shifting most maintenance responsibilities back to the dealer.

Cost of ownership goes well beyond the sticker price. Fuel consumption, scheduled maintenance, unexpected repairs, replacement parts, tire wear, and insurance all add up over time. Downtime is another hidden cost, since a tractor that sits waiting for parts or repairs disrupts workflow and may require renting equipment at short notice. Participants at the workshop talked through these real-world considerations with instructors while practicing maintenance routines, checking fluids, and troubleshooting common issues, helping them understand how long-term operating costs shape a smart purchasing decision.

One instructor shared that the best money he had spent in the previous year was for a shed to protect his tractor so he would have less maintenance costs and downtime.

Service, Maintenance & Local Support

Even reliable tractors require upkeep. Before purchasing, research dealership support, parts availability, and

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New & Emerging Farmers Gravitate Toward Collaboration in NYS

The Cornell Small Farms Program's Futuro en Ag project supports Spanish-speaking and bilingual new and emerging farmers. We have observed these farmers come together to create collaborative agricultural ventures that begin rooted in pre-existing trust.

By Mildred Alvarado

New York State agriculture is in the midst of a demographic transformation that is not only redefining who works the land, but also who is launching viable farm businesses. This shift reveals a growing population of new farmers and ag workers ready to transition to independent production, driven by generational knowledge from their countries of origin or skills developed through their current farm-based work.

Through our experience supporting Spanish-speaking and bilingual new and emerging farmers in the Futuro en Ag Project of the Cornell Small Farms Program, based at



This group of Hudson Valley growers is exploring ways to work together.

Mildred Alvarado / Cornell Small Farms Program

Cornell University, we have seen that these agricultural ventures tend to begin rooted in pre-existing trust. Rather than through theoretical structures, these collaborations spring up organically in conversations among coworkers, friends, and in families who started working the land during their free time, sharing tips about market access, sustaining production, and serving initial customers.

Around 91% of Spanish-speaking population in the state lives in urban and periurban communities, with high concentrations in counties such as Bronx (51.7%), Queens (26.8%), Westchester (22.6%), Orange (18.4%), Suffolk (17.7%), Kings (Brooklyn) (16.8%), Nassau (15.6%), and Rockland (15%), confirming that Spanish is a social and

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repair services.

A typical maintenance checklist includes:

- Engine oil and filters
- Hydraulic fluid and coolant
- Tire pressure
- Grease fittings
- Belts, hoses, seals
- Loader cylinders and linkages
- PTO and hitch function

LaBrake emphasized daily safety checks and routine maintenance during the

classroom sessions, reinforcing the idea that good habits prevent downtime and accidents. "If you make safety checks part of your daily rhythm, everything else falls into place. A few minutes spent looking over your machine can save you hours of trouble later, and it keeps everyone on the farm safer," he said.

Planning for Future Growth

Your farm equipment needs will evolve over time. Choose a tractor with enough capacity to grow a bit but not so much that

you overspend on unused features.

Growth planning tips:

- Buy slightly above current needs
- Avoid paying for far-future features
- Build implement collections gradually
- Consider resale value
- Keep maintenance records

Participants in the training spent time exploring how long-term planning influences smart equipment decisions, and how those decisions, in turn, shape the trajectory of their farms. Instructors encouraged them to think beyond immediate tasks and consider how tractor weight, tire choices, and implement selection affect soil health through compaction, residue management, and field preparation.

They also discussed how the right equipment can streamline labor and create safer, more efficient workflows during the busiest parts of the season. These conversations helped workshop attendees see that choosing a tractor is not a one-time purchase but a decision that guides future infrastructure, cropping plans, and the overall direction of a farm as it grows.

A Thoughtful Investment

Buying a tractor is more than purchasing a piece of equipment. It is selecting a productivity partner. When you take time to assess your needs, match machine and implements to your tasks, and plan for service and growth, you empower your farm for years of success.

The tractor workshop demonstrated how powerful hands-on instruction can be in supporting those decisions. With bilingual teaching, real-time coaching, and a chance to operate multiple machines, the event helped farmers build both skill and confidence. Hands-on time gave participants a chance to start tractors, navigate practice courses, and troubleshoot common issues, all with steady coaching. Many described the experience as empowering and transformative.

Habecker reflected, "I have learned so much about tractor safety and operations. I now feel 100% more equipped than I was two days ago when it comes to iden-



Ricardo Orellana (left), a participant in the Cornell Small Farms Program's tractor training held this year at the Homer C. Tompson Research Farm, practices safe tractor operation with guidance from instructor Shane LaBrake.

Kacey Deamer / Cornell Small Farms Program

tifying the appropriate tractor implements and then using the tractor implements as I'm looking to start my own farm in the next two years."

For learning more about specific models of tractor you may be considering, the resources at TractorData.com are comprehensive.

If you're looking for a used tractor or implements, Tractor House (tractorhouse.com) and Fast Line (fastline.com) are useful websites for exploring your options.

Sections of this article were inspired by the writings of Rich Tabor, grazing and ag economic development specialist with CCE Chenango, and Shane LaBrake, ag educator. Any links provided do not imply explicit endorsement by the Cornell Small Farms Program or Cornell University.

Rich Mattingly is a Marine Corps veteran and is dedicated to building community through sustainable agriculture. He lives in Dryden, NY, and is an aspiring farmer, with the goal of growing healthy food for local food sovereignty initiatives. He is passionate about helping veterans achieve their farming goals and strengthen their connection to the land and loves supporting the Farm Ops project's mission.



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cultural component at the state level.

Public data tell us where Spanish is spoken, but the true significance for the state's agriculture lies in what the data represent: a wide range of practitioners with hands-on experience in crop and livestock production, local distribution logistics, and opening local markets who now aspire to formalize independent ag businesses without sacrificing economic stability. This represents a translation of lived experience into entrepreneurship, balanced with informed decision-making around land access, startup capital, markets, and legally accessible business models such as the LLC and other governance structures – when they are economically viable and socially coherent for sustaining families and community participation.

Regardless of the legal starting point, the farmers we have worked with tend to agree on a key principle: building a business collaboratively to share resources, knowledge, labor, and responsibilities, allowing co-owners and operators to access opportunities that would be nearly impossible to reach alone. Collaborative initiatives help reduce risks, extend the life of farm equipment through sharing, rotate responsibilities so that one absence does not impede progress, and develop leadership in practice.

In a land-constrained state with high capital barriers and geographically dispersed farms, collaboration is not a trend – it is a strategic response based on sound business logic for sustaining what is already growing and expanding where demand already exists.

Collaborative Agriculture in New York: Recent Experiences of the Futuro Ag Team

What I present here is not based on a formal academic concept but rather on what I have observed and learned through my direct work with the groups I currently support. These reflections arise from real experiences in the field, in spaces where farmers create their own forms of collaboration and mutual support.

• Long Island

A group of new farmers began working together because they already knew each other and shared a common vision: growing flowers and vegetables on small plots of land, often on farmland temporarily provided by local organizations or private landowners. Their primary jobs were outside of independent farming – they worked in cleaning services, as delivery drivers, or in greenhouse operations.

The partners could only work the land in the evenings and on weekends, yet they still managed to hold a spot at weekly farmers markets. They intentionally rotated their labor and responsibilities, supporting each other so that one absence would not cause them to lose opportunities they had developed as a team.

For nearly three years, the group also underwent an extended learning process, navigating production challenges, startup capital, business administration, and transitioning into more formalized markets. Their biggest challenge was not how to grow their crops – they knew how to do that. It was learning to manage a business collectively and make decisions based on real data and ongoing dialogue.

The group reached an important milestone when they accessed stable community farmland supported by a Community Land Tenure model, structured under a Community Land Trust (CLT). This achievement enabled deeper formalization, business growth, and long-term participation without fully sacrificing family or job stability during the early stages of their agricultural transition.

• New York City

In NYC, our collaborative agriculture efforts emerge from shared green spaces rather than large farms. Collaboration begins in gardens, parks, and community green areas where farmers grow healthy food and also nurture deep human roots: shared wellbeing, community health, working relationships, and entrepreneurial spirit.

Within these initiatives, some groups have chosen to operate under agricultural co-operatives; others function as nonprofits. Some have formalized their work under an LLC, among a variety of collaborative organizing structures.

• Western New York

Another group in Western New York also supported by Futuro en Ag is moving into a more formal planning stage. Their conversations have evolved into developing a future-focused strategy, with the goal of forming farm businesses that build generational pathways and strengthen rural economies.

These teams are primarily composed of ag workers who have gotten to know each other in their workplaces and through family ties. This was the foundation for members of the group to meet after work and on weekends to plan operations, mobilize shared resources, co-open markets, and explore business models that sustain independent production while still protecting family and job stability.

They are now designing a business plan, identifying market opportunities, prioritizing areas of production, and have already begun a collaborative land search process with support from allied networks and trusted landowners. Their shared vision centers on informed decision-making, continuous dialogue, market evaluation, and the social and economic impact they want to create for their families and communities.

• Hudson Valley

Another experience worth sharing comes from the Hudson Valley, where collabora-

tion has entered an important phase of scaling up. These farmers already have land under cultivation, steady weekly sales, reliable markets, and loyal customers who count on their products.

Collaboration here moves at the pace the market demands: the farmers have identified the common needs of cold storage, logistics around fresh produce, transportation planning, and infrastructure investment that strengthen both independent farmers and teams built on shared trust and experience.

This stage has revealed a key lesson: the market also organizes us. When demand is high, collaboration requires new discipline, rapid coordination, clear leadership roles, and decision-making with team-based strategy rather than informal organizing.

Lessons Learned

Collaborative agriculture reaches scale only when grounded in trust, viable markets, and economic feasibility, creating incentives that strengthen – rather than compromise – family wellbeing and generational futures.

Organizing collaborative agriculture requires intentional investment in shared understanding: personal relationships, defined roles, hard conversations, real market validation, and feasible business models that are strong both socially and economically. For many farmers, financial viability is not secondary – it determines whether collaboration becomes a sustainable opportunity or an unbearable weight.

When an initiative is social or educational but lacks economic feasibility, collaborative agriculture slows – not for lack of dreams, but because families still need to prioritize their basic needs and must generate income to live today. Collaboration must uplift life, not compete against it.

We have also seen collaborations shift or break – not as abandonment, but as reorganization. Some groups have restructured themselves so that collaboration could be tried again, with more clarity and



In a Western New York group, farmers are teaming up on a beef cattle project and are pictured here visiting a beef farm.

stronger governance, giving the collaboration a better chance of success.

We have seen initiatives dissolve for lack of communication – not for lack of hope. I have seen work teams realign – not to separate permanently, but to do it better next time.

Collaborative agriculture for new and emerging farmers is human, iterative, imperfect – and adaptive, just like agriculture itself. It evolves through trial and error, redefinition, and renewed effort until both relational and economic sustainability align.

The field has been a classroom where farmers learn both the technical and the relational sides of running farm businesses. Collaboration is not easy, but it is possible when born from shared purpose, necessity, strategy, patience, honest conversation, and leadership that inquires rather than imposes.

Puede leer este artículo en español a smallfarms.cornell.edu/quarterly.

Mildred Alvarado is the leader of Equitable Farm Futures Initiative and Futuro en Ag project for the Cornell Small Farms Program. Her work is focused on building bridges to facilitate knowledge and help farmers to overcome linguistic, cultural, and technical barriers to promote inclusive and profitable businesses. Coming from a farm facing the challenges that many still face, the program's mission is close to home for her. The soil of her Honduran farm taught her how to survive, fueled her body, and her dreams, which have brought her to the Cornell Small Farms Program team.

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Cornell Creates Transformative Tech for Wine Industry

Cornell research led by Gavin Sacks is helping E&J Gallo Winery in Modesto, CA, examine large amounts of grape samples during harvest for potential contaminants that affect the flavor and aroma of wines.

By Caitlin Hayes

Every day during harvest season, E&J Gallo Winery, based in Modesto, CA, collects up to 300 grape samples for screening – to make sure the resulting wine doesn’t contain harmful toxins or taste like grass or mushrooms or wildfire smoke.

But even with machines running around the clock, testing that many samples takes days and requires staff oversight – it’s been a bottleneck and a struggle for years, said Nick Dokoozlian, vice president of viticulture, chemistry and enology for Gallo, the largest exporter of California wines and one of the largest global producers of wine by volume.

After 10 years of collaboration and work on the problem, Gavin Sacks, professor of food science in the College of Agriculture & Life Sciences, has delivered a solution: a high-throughput analytical platform that slashes screening time from 30 or 40 minutes per sample to just three or four minutes. The system, called SP-MESH-DART, was deployed in Modesto for the first time in October.

“We were really struggling. We knew



Doctoral student Zoë Scott (L) runs a demonstration of SP-MESH-DART, a high-throughput analytical platform that screens grape samples, for Gavin Sacks (center), professor of food science, and Nick Dokoozlian (R), VP of viticulture, chemistry and enology for E&J Gallo Winery.

what we needed, but we had no solution in mind, nor did we even really have a vision for how we get there,” said Dokoozlian, who has served as longtime liaison between Gallo and Cornell, recruiting hundreds of students and shepherding projects and investments in analytics, grape genetics and genomics, plant physiology, remote monitoring of grapevine health, and more.

“The fundamental work that it took for Gavin to envision and develop the application of SP-MESH-DART is not some-

thing that we in industry could do, and no university in the United States is better qualified to do this kind of work for the grape and wine industry than Cornell,” Dokoozlian said. “Fundamental work is very, very important for advancing our disciplines and our industry, and without it, innovation ceases to exist.”

Dokoozlian said the new platform will reduce the complexity of Gallo’s operations and allow staff to redirect their energies to more strategic and important tasks.

“As we begin to use the platform on a large scale, we’re very excited about the future,” he said.

Part of the research challenge was that Gallo, and the industry at large, needed to detect compounds at very low concentrations, at parts per million or billion, in samples with a lot of “chemical noise,” Sacks said. His team was able to streamline the process of extracting the compounds by adjusting the chemical makeup of the samples and using a laser-etched polymer sheet. The sheet, sandwiched between two metal plates, is placed over the samples, where it can absorb the volatile compounds, which can then be measured and identified using established methods. The team designed the sheet so that 24 samples can be screened at once.

Gallo and Sacks’s team worked with German instrumentation company Bruker to integrate the new process with existing machines.

“These are challenges for the industry, and Gallo has been very open in talking about them, and to investing in solving problems that will bring everybody forward,” Sacks said. “Where we ended up with SP-MESH-DART is not at all where I thought we were going, but it was all of these modest improvements and new ideas over time, a collaborative effort of small suggestions and changes that add up to something really effective.”

“Every time we’ve run into an obstacle, a challenge, a brick wall, Gavin has been able to pivot and work around it,” Dokoozlian said. “The bottom line is that Gallo is using the methodologies that he’s developed, and this particular platform is

going to be commercialized so that other wineries, food companies, even folks in other industries will be able to use it in the future.”

Gallo is currently using the technology to detect compounds that impact flavor and aroma, but Sacks’s team, with Gallo’s help, is seeking approval from federal regulatory agencies to use the technology to screen for harmful toxins as well.

Sacks said the collaboration with Gallo, and the industry, provides his students with real research questions and real constraints, giving his group greater impact.

The collaboration also provides opportunities for students to experience the industry and has often been a pipeline for employment. Cornellians hold multiple leadership and research positions at Gallo, and the company recruits at least half a dozen Cornell student interns every year.

“Our students will very likely be joining the food industry in some role, whether in an academic position, regulatory position, [or] government position, so it doesn’t make sense not to think about industry,” Sacks said. “Food science as a field serves its purpose by providing people with a safe, high-quality, nutritious food supply – so to decouple food science departments from industry is to make food science irrelevant.”

Sacks said the partnership with Gallo, the largest family-owned winery in the U.S., is special because of a set of shared values that includes this support and development of students.

“That’s where our journey at Cornell started – with recruiting the best and brightest talent,” Dokoozlian said.

In addition to supporting faculty and graduate students, Gallo has contributed to establishing the National Grape Improvement Center at Cornell AgriTech and provides funding for Cornell’s annual conferences for the New York and international grape and wine industries. Gallo has also supported the Efficient Vineyard and Hi-Res Vineyard Nutrition projects.

“Between the students and the expertise you have on campus, Cornell has a national and international footprint in the grape and wine industry,” Dokoozlian said. “You have a college of agriculture embedded in an Ivy League university, and we’re able to leverage the critical mass of expertise here – there’s really nothing else like it.”

This article originally appeared in the Cornell Chronicle.

Caitlin Hayes is a staff writer for the Cornell Chronicle, focusing on stories related to impact and sustainability.

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E&J Gallo Winery has recruited hundreds of Cornell students to intern and work at the company. Here, students from CALS harvest grapes at the Cornell Orchards in Lansing, NY.

Jason Koski / Cornell University

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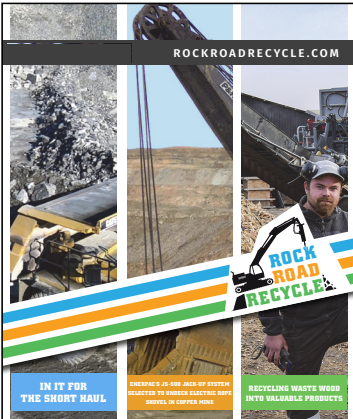
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