

Securing the Future of the New York State Livestock Industry

November 2018

By Anu Rangarajan, Erica Frenay, Michael Baker, Tatiana Stanton, Nancy Glazier and Betsy Hodge

A publication of the Cornell Small Farm Program.

Acknowledgements

The March 2017 Livestock Summit would not have been possible without the Cornell Cooperative Extension (CCE) hosts at 8 sites around NYS who facilitated discussion among the farmers and other industry professionals who attended in person:

- Hank Bignell**, Livestock Educator formerly with CCE Albany
- Heather Birdsall**, Livestock Educator with CCE Cortland and the SCNY Ag Team
- Lynn Bliven**, Agricultural Economic Development educator for CCE Allegany
- Brett Chedzoy**, Senior Resource Educator at CCE Schuyler and Forestry Specialist with the SCNY Ag Team
- Jason Detzel**, Livestock Educator with CCE Ulster
- Tom Gallagher**, Agriculture Educator with CCE Albany
- Bill Gibson**, Agriculture Educator, CCE Schoharie-Otsego
- Nancy Glazier**, Small Farms Support Specialist with CCE Yates and the NWNY Dairy, Livestock and Field Crops Team
- Betsy Hodge**, Livestock Educator with CCE St. Lawrence
- Ron Kuck**, Dairy and Livestock Educator with CCE Jefferson
- Rachel Moody**, Dairy, Equine and Livestock Educator with CCE Orange
- Michele (Lipari) Proscia**, Agriculture Educator with CCE Sullivan
- MacKenzie Waro**, Livestock Specialist formerly with Harvest NY

The authors are also grateful to the 450 NYS livestock producers who responded to the survey, and the 160 farmers and other industry professionals to attended the Summit to prioritize needs for the NY livestock sector.

Analyzing the large volume of data generated by the survey and the Summit, and summarizing it in this report, was a daunting task that wouldn't have happened without our co-authors. The Cornell Small Farms Program gratefully acknowledges the contributions to this report by:

- Mike Baker**, Beef Cattle Extension Specialist, Cornell University Dept of Animal Science
- Tatiana Stanton**, Small Ruminant Extension Associate, Cornell University Dept of Animal Science
- Nancy Glazier**, Small Farms Support Specialist, CCE Yates and the NWNY Dairy, Livestock and Field Crops Team
- Betsy Hodge**, Livestock Educator, CCE St. Lawrence

Preferred Citation Format for this Report:

Rangarajan, A., E.J. Frenay, N.I. Glazier, T.L. Stanton, M. J. Baker. 2018. Securing the Future of the New York Livestock Sector. Publication of the Cornell Small Farm Program. <http://smallfarms.cornell.edu/2018/11/15/livestock-report/>

For additional information on this report, please call the Cornell Small Farms Program at: 607-255-9227 or email us at smallfarmsprogram@cornell.edu.

Funding and Support:

This project's coordinators gratefully acknowledge the donation of time and energy by the farmers and the educators who participated in the 2017 NY Small Farm Summit. Partial funding was also provided by the USDA National Institute of Food and Agriculture Smith Lever project number 2016-17-253.



Cornell Cooperative Extension



Livestock production is a vibrant component of the New York agriculture industry with high potential for growth. While dairy could be considered the anchor tenant of the New York livestock sector, the state’s agricultural economy also includes many non-dairy livestock species, such as beef, poultry, small ruminants (fiber, meat and dairy), swine and exotic livestock (e.g. farmed deer, bison, rabbit, alpaca). Although most livestock in New York is raised on small farms, this industry contributes \$893 million in sales to the rural New York economy as well as an extensive and diverse range of products to local and regional markets (Schmit, 2016). The addition of livestock on crop farms helps to diversify farm income and adds marketing opportunities. Raising livestock is often more compatible with holding an off-farm job and part-time farm employment than fruit or vegetable farming. Also, grazing livestock allows land not suitable for crop production to be put to an agricultural use.

“The greatest agricultural resource of New York is its exceptional adaptation for the growth of grass. Yet the hay crop has received little attention and pastures have rarely received any care... It would certainly seem good policy to consider means of increasing the efficiency of our pastures.”

–Dr. G. F. Warren. 1910



New York livestock producers have numerous competitive advantages over other regions of the U.S. that could support the growth of this sector and supply a greater percentage of the meat consumed in New York. These advantages include:

- **Proximity to urban markets:** New York City is the largest city in the US, home to more than 20 million people. When combined with other Eastern seaboard cities, including our upstate cities, we have proximity to over 112 million people.
- **Diverse population:** New York's ethnically, racially and religiously diverse population supports specialty and niche products and markets. For example, sheep and goat sales escalate around religious holidays.
- **Excellent transportation infrastructure:** Good roads and interstate highways support moving products to cities.
- **Emerging marketing cooperatives:** To take advantage of aggregation economies, groups of farmers are innovating new ways to get meat to markets.
- **Support for local meat marketing:** As consumers and restaurants clamor for local food and a connection to farmers, demand for local meat is increasing. Innovative platforms (e.g. MeatSuite.com and the New York Grown and Certified Program at New York State Ag & Markets) and infrastructure (e.g. meat lockers in Ithaca and Corning) foster these connections.
- **Research and education infrastructure:** Cornell University, Cornell Cooperative Extension (CCE), several SUNY schools and the New York State Department of Agriculture and Markets support and educate livestock farmers on best farm and business management practices.
- **Great agricultural infrastructure:** Regionally dispersed auction barns, equipment and feed dealers, hay producers, feed mills, and breweries with spent grains support livestock production. Most producers live within 80 miles of a processing plant (Mike Baker, personal communication). Veterinarians, breed and species associations, and other agriculture organizations foster network connections. New York State Ag and Markets offers herd health support through the New York State Cattle Health Assurance Program (NYSCHAP) and Sheep and Goat Health Assurance Programs (NYSSGHAP).
- **Land suitable to grazing:** It is estimated that there are 2.4 million acres of underutilized land in New York State (Wightman, et al., 2015). Most competitive livestock farms utilize land not suitable for crop production but perfect for pasture and haying. By raising livestock and harvesting hay these farmers keep land in agriculture using sound soil and water conservation practices that fit the topography and conditions. Open farm and forest lands are important as a major source of watershed filtration, groundwater recharge, and providing improved water and air quality in our communities (USDA 2016). If managed properly, pasture grazing can also capture and store carbon (Broocks et al., 2017).
- **Reasonable land costs:** Compared to surrounding states in the Northeast and Appalachia, the value of New York State pasture land is significantly lower (NYS \$1,400 vs Northeast - \$3,420 and Appalachia - \$3,340 (USDA, 2017)).
- **Access to fresh water:** In addition to adequate rainfall, ample surface and groundwater support pasture and animal production.

If New York is to take advantage of its resources to expand the livestock sector, investments in research, education and marketing infrastructure will be needed. The intent of this report is to provide vital information to communities, policy makers and other industry supporters on needed investments to sustain growth of the New York livestock sector.

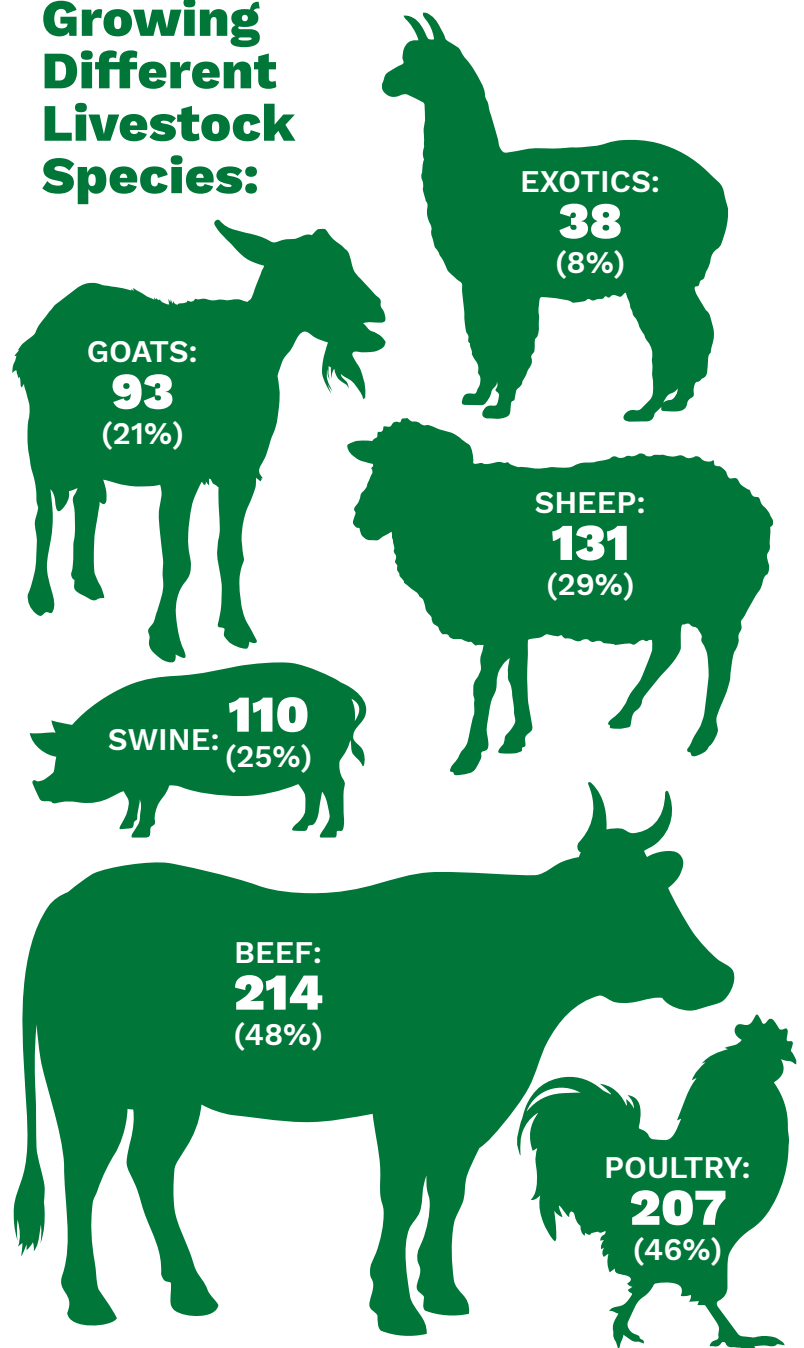
Identifying Priorities to Grow the New York Livestock Sector

Over the past several years, the Cornell Small Farms Program has conducted biennial Small Farm Summits focused on themes identified by farmers. The goal of these Summits is to prioritize research, education or other investments needed to support the viability of small farms in New York. In March 2017, the Summit focused on the needs of the New York livestock industry. The event was hosted by Cornell Cooperative Extension educators in eight CCE offices with over 160 farmers and industry participants. The Summit employed a guided discussion meant to uncover needed investments, debate their relative importance and then rank them as priorities.

To ensure representation of perspectives from a larger segment of the livestock industry, an electronic survey explored the same questions addressed at the Summit. Farmers shared information about their farm, their growth in last 5 years, future visions of the New York livestock sector, and their priorities for research and education for those species they currently manage. Of the 604 surveys completed, 448 were New York farmers. Of these farmers, 51% have only one species of livestock on the farm while the rest raised an average of two species. The most common included beef (48% of farms) and poultry (46% of farms) (see insert). These species varied on the significance of their contribution to overall gross farm income from livestock sales. Most of the New York respondents (51%) have farmed for more than 10 years. These mature farms were more likely than newer farms to be raising beef (57% vs 38%) and sheep (34% vs 23%) and less likely to be raising poultry (40% vs 53%) or exotics (6% vs 11%). Eighty-four percent of farmers were earning up to \$50,000 from sales of livestock products. Together, the Small Farm Summit and New York livestock needs survey engaged over 600 New York farmers. This report summarizes the collective priorities for needed research and education to foster more resilient and viable New York livestock farms.

Number of 448 New York Respondents

Growing Different Livestock Species:



NY Livestock Industry has Potential for Growth

Over 85% of the farmers believe the New York Livestock sector has potential for growth. This optimism was similar regardless of farm maturity, number of species, revenue or growth in the last five years. Common reasons included increasing interest in local foods (164), proximity to markets and consumers (133), growing demand from consumers (111), growth in supply (92), new markets (62), available land (80), and good grazing potential (42). The Summit deliberately did not include processing and meat value chains, since these challenges have been and are being explored through other Northeast projects (Gwin et al., 2013; Consultants, 2015; 2017; Peters et al., 2016).

This optimism is also driving growth of individual farms. Two thirds of responding New York livestock farmers (67%) scaled up their businesses in 2016. Most farms (73%) have seen gross revenue from sales of livestock products increase over the last five years. Newer farms were more aggressively scaling up their farms, with 74% reporting growing their herds/flocks in 2016 compared with 59% mature farms. For those farms that did not report an increase in sales (120 farms or 27%), 29% are at the scale they desire (mostly (70%) mature farms), 23% plan to grow in the future (mostly newer farms), **but the remaining 48% need to overcome production challenges in order to grow their businesses.**

“There is great potential for growth! We are situated close to large cities, with ample supply of water & pasture so we can provide a consistent high-quality product to our consumer base.”

–NY beef producer

Research and Extension Priorities to Grow the New York Livestock Industry

Farmers prioritized specific research and extension needs by species (beef, swine, sheep, goats, poultry and exotics). There were cross-cutting themes that emerged from this data that promise significant impact on the viability of all livestock and animal farms in New York State. These themes include:

- A. Advance grazing and forage systems
- B. Improve herd/flock nutrition, health and biosecurity
- C. Invest in breeding and genetics
- D. Optimize market channels and value-added opportunities
- E. Strengthen production and business management

The importance of each of these themes to the livestock industry is detailed below, along with critical research questions as well as extension or education opportunities.

A. Advance grazing and forage systems

Why it Matters: Well-managed grazing has strong potential to improve farm profitability by reducing stored feed costs, improving animal health and reducing costs of animal housing. New York is particularly well-suited for pasture and hay production given sufficient annual precipitation and mild growing climate. When coupled with increasing consumer demand for grass-finished meats, livestock producers ranked “advancing grazing and forage systems” as the top priority to enhance viability of NY’s livestock sector.

Perennial pasture crops improve soil health, groundwater recharge, and air and water quality by reducing erosion. Well-managed grazing also improves soil stewardship by reducing compaction under conditions of less frequent but more intense rain events, supporting resilience to climate change (USDA, 2016. Grazing Management and Soil Health Report).

“Decisions such as investing in on-farm hay production and renovation of pastures are the greatest costs associated with lamb production and also offer the greatest risk if affordable sources are not found. Understanding all the options and their costs would help alleviate risk.”

–NY sheep producer



Optimizing the contributions of grazing and pastures to the farm requires multiple management strategies, including rest, renovation, and harvesting of the pasture forages as stored feed for off-season feeding. Each of these approaches have trade-offs and economic impacts. Research and extension are needed to better understand the economics of these decisions and help farmers mitigate risks under New York conditions.

Critical Grazing Research Questions

ALL SPECIES:

- What are best grass-finishing strategies?
- How can farms make wise decisions about the best balance of haying vs grazing pastures?
- What are the returns on investments of various pasture management strategies, such as renovation, overseeding, extending the season with annual pasture crops, fertilizing, or purchasing equipment versus hiring custom haying operators?
- Can well-managed grazing operations sequester enough carbon in the soil to produce carbon neutral meat?
- What are the most environmentally sound and economically viable ways to house animals, especially for out-wintering cattle and year-round housing for swine and poultry?

Grazing Extension and Education Opportunities

ALL SPECIES:

- **Invest in regional grazing specialists to advance the practice.** Much information is available through programs and projects in the Northeast, but remains unorganized and disjointed in presentation to livestock producers. Currently, there are several Cornell Cooperative Extension and agency educators who support grazing systems, but cannot fulfill the education and training needs of the more than 20,000 livestock producers in New York State. CCE regional funding for livestock educators is dependent on county-level funding which is very uneven across the state.

“Getting landowners and producers linked and working together helps meet that production growth potential inherently available to us here in the Northeast.”

- NY Extension Educator

- Match landowners and livestock producers to expand grazing lands.** It is estimated New York has 2.4 million acres of vacant land reverting to brush that could accommodate grazing livestock (Welch, 2011; Wightman et al., 2015). The regional grazing specialists, in partnership with other agriculture organizations, could serve a key role in facilitating connections among producers and non-farming landowners. Many non-farming landowners would benefit from education about grazing systems, needed investment and infrastructure, lease structures and expectations for having animal-based production on their land. Long-term leasing of land is ideal for those new or expanding farmers unable to purchase large tracts of land.



- Offer intensive grazing training across New York State.** There is no comprehensive training for farmers seeking to improve profitability and environmental outcomes via grazing. A vetted curriculum could help more farmers understand how to optimize their grazing system to lower feed costs while improving quality of life and soil health.

.....

B. Improve Herd/Flock Nutrition, Health and Biosecurity

Why it Matters: Optimal health of animals is critical to supporting farmer goals for production of meat, milk or fiber. Farmers of all species prioritized nutrition, managing parasites, herd health, veterinary training, and biosecurity.

Improving animal nutrition: The National Research Council (NRC) provides clear recommendations on energy, protein, mineral and vitamin requirements to optimize growth or immune response for different livestock species and products (fiber, milk, meat). Methods for meeting these requirements vary with the production system (e.g., grass finished, grain finished, grain supplemented on pasture). Monogastric (single-stomach) animals, like swine and poultry, require supplemental feed when raised on pasture, which amounts to 65-70% of the total feed cost. Many producers attempt to lower feed costs by utilizing vegetable, dairy, and brewery byproducts, but they lack knowledge on how to evaluate the nutrient and economic value of these feedstuffs. The majority of New York survey respondents who raise pigs considered ration balancing a high priority.

Managing parasites with an emphasis on pasture-based enterprises: Integrated parasite management is important for all livestock grazing programs. Grazing strategies to evade or avoid parasites suggest resting pastures longer than is optimal for forage quality, relying less on pasture, or delaying introduction of animals to pasture until after the spring flush of parasite worms. In pastured swine operations, outdoor production increases risks and decreases profitability with exposure to internal parasites (Strueh 2018). For those following organic practices which require animal access to pastures, limited effective parasite treatments are available.

Strengthening Herd Health Expertise: New York State has a severe shortage of veterinarians with extensive sheep, goat, swine, poultry, and exotics expertise. Many large operations contract with veterinarians outside the state, which is too costly for smaller operations. Anyone raising animals should have core skills to properly care for common ailments they encounter in their herd, but training is sporadically offered and not always accessible. Vaccinations are critical to basic herd health management, but are not uniformly administered, putting the

entire sector at risk. Producers of exotic species face additional challenges, as this category includes a wide range of species, from rabbits to bison, all with different health concerns and veterinary care needs. Vaccinations are not available for some species, which can be an issue for exotic species.

Strengthening Biosecurity Networks. Biosecurity education and notification networks are extremely important to keep disease from spreading from one farm to another. Diseases are transmitted via wildlife and new stock brought to the farm without sufficient quarantine. In confinement systems, disease is controlled by limiting exposure to the outside environment. In outdoor systems, poultry and swine have opportunity to intermingle with wildlife and domestic animals that can carry disease. Of particular concern is trichinosis, which has been nearly eliminated in confinement systems. A minimal investment of resources in biosecurity networks could have rippling positive impacts across the farm community.

“With the ever-increasing speed at which diseases can spread in this very mobile society, we need vigilance to be proactive and aware of possible breaches in biosecurity. Extension educators and veterinarians are the best resources for assistance related to diseases and their spread. The more training that’s available concerning production AND the costs involved will only benefit the farmers and the consumers, producing healthier products and greater profitability.”

–NY poultry producer

Farmers desire to learn and apply biosecurity on their farms. Overall, there were requests for more plan-based education such as increased assessment and procedural efforts on how to improve biosecurity and address flock health concerns. More technical assistance provided to farmers would enable them to see where biosecurity could be tightened. Several farmer respondents thought that biosecurity was only a concern for large farms; this in itself is indicative of a problem, as transmissible diseases do not discriminate based on farm size.

Critical Livestock Health Research Questions:

ALL SPECIES

- What pasture management strategies (rest, renovation, annual plants and/or disruption intervals) are most effective, practical and economically viable for reducing parasite survival?
- Can biological compounds in some forage species with properties that boost the immune system or are antagonistic to parasites be better identified and further studied to determine varietal differences and the feasibility of developing management and cultivation practices to take advantage of these compounds?
- What treatments are most effective for prevention and control of internal parasites in pastured and/or organic livestock?

BEEF

- Is there a difference in performance between breeds of beef cattle due to internal parasites?
- What is the level of de-wormer resistance on New York beef farms?

SHEEP AND GOAT

- Why are some treatment alternatives, such as copper oxide wire particle (COWP) oral dosing to control barber pole worm, effective on some farms but not on others?
- What new biological and chemical parasite treatments might be approved for use under New York conditions?
- How does dosage of specific vitamins and minerals affect immune response to disease, as well as fiber quality and color?

Livestock Health Extension and Education Opportunities:

ALL SPECIES

- Create comprehensive, whole-farm biosecurity training programs
- Collect, catalogue and verify farmer strategies to disrupt parasite survival on pasture
- Include veterinarians in alternative parasite management training
- Strengthen herd health expertise for veterinarians and producers
- Develop basic disease diagnosis and necropsy materials and distribute them to all livestock producers online, via trainings and one-on-one contact.
- Establish online biosecurity networks. Cornell University already has active channels to share information with small ruminant, beef, and pork producers and small farmers in general. Similar lists are needed for producers of poultry and exotic species. A designated facilitator is needed to share important biosecurity information when needed.

**“We need vets that
KNOW GOATS &
SHEEP..., OR more
farmer training so we
can do more ourselves.”**

–NY sheep and goat producer

BEEF

- Promote veterinarian participation in the New York State Cattle Health Assurance Program (NYSCHAP) (<https://ahdc.vet.cornell.edu/programs/NYSCHAP/index.cfm>). A certificate program linked to Farm Service Agency borrower credits could provide incentives for participation.
- Promote participation in Beef Quality Assurance (<https://www.nybeef.org/farmers-fencepost/beef-quality-assurance-certification>).

SWINE

- Create decision-support tools for procurement of alternative feed sources and integration into rations.

SHEEP and GOAT

- Promote veterinarian participation in the New York State Sheep and Goat Health Assurance Program (<https://ahdc.vet.cornell.edu/programs/nyschap/modules/smallruminant/index.cfm>).

POULTRY

- Train area veterinarians to help diagnose poultry disease and prevent spreading throughout the region.

EXOTICS

- Offer virtual workshops/trainings on health management of exotics species.
- Develop factsheets on health management



C. Invest in Breeding and Genetics

Why it Matters: To be successful at any scale and with any species, a livestock farmer must be able to produce uniform, high-quality animals in a timely way. Choosing the correct animal type that is adaptable to a farm and its end market is based on genetics. Given the importance of grazing systems to New York livestock producers, there is a need to better understand the factors that affect growth rate, carcass quality and feed efficiency for ruminants finished on grass. Local markets are interested in specialty and heritage breeds of poultry and swine that are not widely available. The heritability of parasite resistance in goats and sheep is similar to that of milk yield. Participation in the National Sheep Improvement Program evaluating goat and sheep genetics for parasite resistance could potentially help farmers select for breeding stock better able to cope with internal parasites.

“Genetics provides the most immediate return on investment after a farm is established.”

“Improving genetics will increase productivity and margins for producers.”

–NY beef producers

Understand performance of hybrids and heritage breeds on pasture. For swine and poultry, heritage breeds tend to be in higher demand for outdoor production due to their hardiness and meat flavor, but little work has been done to improve their genetics for performance on pasture. The absence of a hardy poultry broiler breed that forages well and produces a 4-lb carcass in less than 10 weeks in a pastured setting is a barrier to the ability of New York farmers to supply consumer demand for local chicken. Many swine producers who seek to finish pigs outdoors can only afford animals of an unknown combination of heritage and production genetics. Purebred heritage pigs, which are highly desirable in the market, are available in NY, but at a high initial cost that is not practical for those without a farrowing operation.

Adapt reproductive tools used in genetic improvement to small farms. Artificial insemination (AI), embryo transfer, herd performance evaluations, effective culling, and heat promotion/synchronization treatments are important tools for genetic improvement. However, the effectiveness of these tools varies between individual farms. For example, AI is not widely practiced in sheep but could assist in introducing overseas genetics or in more accurate genetic proving of sires for traits such as parasite resistance in breeding stock farms enrolled in the National Sheep Improvement Program’s Genetic Evaluations.

Critical Breeding and Genetics Research Questions:

BEEF

- How can finishing time to reach low Choice for 100% grass-finished cattle be reduced?
- What are the factors that affect quality grade in grass finished cattle?





SWINE AND POULTRY

- What swine and poultry breeds are optimal for hardiness and rapid growth in pasture-based systems?
- What is the expected weight gain, reproductive efficiency, number of animals successfully weaned, and relative parasite loads of hybrid and heritage breeds in pasture-based systems?
- What are preferable traits and metrics for evaluation for farmer selection of heritage crosses adapted to pasture-based systems?

SHEEP AND GOATS

- Can the effectiveness of practices such as AI and heat promotion/synchronization be improved to be more practical for goat and sheep farms to use in genetic improvement programs or for out of season or accelerated breeding? What farm management factors influence the success of these practices?
- What reproductive strategies (e.g. nutritional flushing, etc.) are most applicable to achieve optimum kidding/lambing intervals, litter sizes, ages at first birthing, or seasons of breeding for different types and scales of enterprises?

“Genetics, feed, and internal parasites can hinder ideal growth, and in the end cost the producer if not dealt with before, or at inception.”

–NY swine producer

Breeding and Genetics Extension and Education Opportunities:

ALL SPECIES

- **Expand education on the impact of genetics on herd development and meat quality.** Many producers understand the broad concept that better genetics supports desirable animals, but most do not understand how to apply available tools that can increase the quality of the herd more quickly and help them select better replacements. Extension educators can play an integral role in teaching how genetics fit into different production models and demonstrating that quality genetics are well worth the investment.

SWINE AND POULTRY

- **Create a mechanism for farmers to share experiences and discuss different breeding strategies.** Engaging farmers more actively in selection of animals will support farmer selection of well-adapted genetics and may provide more information to research programs interested in improving adaptation to different production systems. Producers are interested a defined set of preferable outdoor traits, how to measure these traits, and how to effectively select for them. Support expansion of heritage breed production. Market interest in specialty breeds suggests an opportunity for entrepreneurs skilled at breeding these valued animals.

BEEF, SHEEP AND GOATS, EXOTICS

- **Expand training and decision support on various reproductive and genetic selection technologies.** Explaining strategies and terms, such as expected progeny differences (EPD), will help growers consider investments in various strategies.

“We need breeders to improve genetic lines of heritage birds to take advantage of “heritage” marketability and select for the traits lost in “commercial” breeds.”

-NY poultry producer

D. Optimize Market Channels and Value-Added Opportunities

Why it Matters: Optimizing market channels and strategies, networking with buyers, and adding value on-farm are keys to profitability. The marketing landscape, however, is ever-changing and the available options vary depending on the scale of production.

Optimize Market Channels: Many new producers enter the livestock industry without having adequate market information or an understanding of the best strategy for their scale, goals and location. Market channels include conventional, value added, direct to consumer, natural and grass finished, or some combination of these.

Adding Value On-Farm: While there are many ways livestock farmers can add value to their products to increase profit, a strong interest in two specific areas emerged from survey responses: 1) small ruminant dairy and 2) on-farm poultry processing. New York ranks 7th in the nation for dairy goat numbers and is home to both some of the largest and also longest continuously running goat and sheep dairies in the U.S. Many dairy goat

“Marketing to the consumer takes lots of time, and many farmers are not good marketers. Being able to market locally grown lamb, goat, and milk products to large wholesalers that will distribute to many different supermarkets and restaurants could help farmers develop a reliable income stream.”

-NY sheep and goat producer



farmers want to expand marketing of their milk or dairy products, but the large capital investment and regulatory requirements make the decision risky. For many poultry producers, unlike other livestock producers, there are few nearby state-licensed (5-A) or federal-inspected (USDA) poultry processing facilities, so on-farm slaughter is the only viable option. These producers must stay under the New York State 1,000-bird exemption as an uninspected facility, which limits their scale, profitability, and ability to obtain insurance. Alternatively, they could build their own on-farm 5-A processing facility as a major investment.

Critical Marketing Research Questions:

ALL SPECIES:

- Expansion of existing and development of additional decision aids in determining which market channel optimizes return
- What new market channels could be profitable for New York livestock producers?
- What contributes to success and failure of efforts to aggregate products from many livestock farms? What are best practices for producers wanting to work together to sell product into larger market channels?

SHEEP AND GOAT:

- How profitable and sustainable are different sizes and types of small ruminant dairy enterprises?
- How can the New York forage base and/or grain byproducts best be leveraged to support optimal milk yields in small ruminants?
- What scale and locations are feasible for small ruminant dairy processors who will buy from New York farms and develop this aspect of the sheep and goat dairy market?
- Which fiber market channels are most profitable including labor invested
- What market changes would be needed to make U.S. wool profitable?

“We need a better wool market for lower quality wool. VT is pioneering a way to use wool as insulation and get a good price for wool. Why not here?”

–NY sheep producer

Marketing Extension and Education Opportunities:

ALL SPECIES:

- Develop material explaining the pros and cons of different market channels
- Host networking events among producers and buyers to connect producers with restaurants, institutions and consumers interested in New York meat products.
- Create local directories to profile buyer interests and unique farm products to support new marketing relationships.
- Develop and expand existing tools to help producers understand the customs, holidays and market demands of specific ethnic groups.

BEEF

- Develop materials from research that documents factors that affect the price paid for feeder cattle
- Develop aggregation protocols for all classes of cattle that target specific markets

“Markets change constantly, so any sort of updates on markets or teaching us how to find, develop and improve markets is helpful.”

–NY goat producer

SHEEP AND GOAT:

- Develop decision-support tools and models on the economics of goat and sheep dairy production and marketing.
- Identify wholesale markets for fluid goat or sheep milk

POULTRY:

- Develop decision-support tools and models on the economics of on-farm (5-A) poultry slaughter
- Collaborate with New York State Department of Agriculture and Markets to develop materials clearly explaining the procedure and estimated costs for designing and building an on-farm 5-A poultry processing plant

“There seems to be little or nothing being done to help develop potential for small ruminant dairy production. The demand is GREAT but educational/governing agencies seem uninterested or oblivious to this potential.”

–NY goat dairy producer

E. Strengthen Production and Business Management

Why it Matters: Continuous and robust production and financial analysis will secure the future growth potential for the New York livestock sector. Farmers need to take a holistic approach to their operations, whether new or experienced. Farm profitability is dependent on sound record keeping and business analysis, environmentally sound production practices and marketing skills.

Critical Business Management Research Questions:

ALL SPECIES:

- What is the New York State cost of production (COP) for various livestock enterprises? If farmers are to have access to more capital, then benchmarks are necessary.
- What are the factors that have the greatest effect on the COP? This information will provide benchmarks that producers can use to identify areas of strength and weakness.
- What is the cost of producing dry hay or baleage versus purchasing forage?

BEEF

- Using historical New York State price data from previous research, evaluate the following scenarios: 1) Sell at weaning, 2) Background and market in spring, and 3) Background, graze and sell after pasture season.
- What is the effect of changing calving season on profitability?

SHEEP AND GOAT

- What are the growth rates and returns on investment for different methods of artificially rearing kids and lambs?
- What are the optimal birthing intervals, litter sizes, ages at first birthing, seasons of birthing and culling rates in terms of return on investment for grass-fed versus conventional goat and sheep enterprises, and for part time versus full time operations?
- What payoffs can farmers expect from implementing health programs to attempt to eradicate these specific diseases from their farms?



Farm Management Extension and Education Opportunities:

ALL SPECIES:

- **Create livestock business summaries to support benchmarking.** Benchmarks help farmers analyze their businesses, and help lenders make informed decisions about loan requests. Educators can work with farmers to gather the data to inform research and create benchmarks.
- **Create basic classroom and hands-on training for new farmers across all species of livestock.** There is a tremendous interest among beginning farmers in livestock production. Most enter agriculture from other fields, bringing with them a wide range of life experiences, but minimal knowledge in agriculture. If profitability is business objective, then emphasis in those practices that support profitability is paramount. Enterprise analysis software is available, but there is not a sufficient number of trained staff to help producers with identifying strengths and weaknesses of enterprises.
- **Support farm business management training.** Farmers of all experience levels need better decision-making support financial and business management. Cost-of-production training would improve profitability of livestock enterprises by helping producers make decisions about how their production practices impact their finances. One example is the timing of birthing, which has far-reaching impacts on labor costs and marketing, especially if scheduling animals for slaughter has been a challenge.
- **Support for environmentally sound production practices.** Properly managed pastures, woodlots, and waterways reduce the risks of erosion and water contamination. Keeping the soil covered is key to climate resiliency. Producers need better awareness of the agencies that provide this consulting and financial support for sound practices.

“Most new businesses and farms fail, so if there was more education up front so the new entrepreneur or farmer isn’t going in blind as to what it really takes or costs to start and run a farm.”

–NY poultry producer

“Training in these topics supports an across-the-board uplift for the livestock industry in NY State.”

–NY livestock producer

Summary and Conclusions

Over 600 New York farmers identified the following five priority areas to grow the livestock industry: A) Advance Grazing Systems, B) Improve Health, Nutrition and Biosecurity, C) Invest in Genetics, D) Optimize Market Channels and E) Strengthen Production and Business Management. Livestock processing and value chains are also perceived as barriers to industry growth. While this report did not address the specific challenges of processing, other ongoing research will shed light on innovative strategies to meet the expanded needs of a growing livestock industry (Peters et al., 2016)

Advancing all of these priorities requires a coordinated research and extension effort to leverage our New York assets to drive further development of the livestock industry. Several efforts are needed:

□ **Recruit additional staff dedicated to research and extension in grazing, livestock production, health care and farm financial management**

Across the state, a handful of researchers and extension professionals work hard to address constraints to growth and provide training and timely response to livestock farmers' questions. But the demand for these services is growing while the number of professionals has been decreasing. The state's livestock industry is short on both researchers with responsibility to address constraints to growth as well as extension professionals who can provide training and timely response to farmers' questions.

This trend needs to be reversed if we are to leverage our many NY livestock assets. A strategic plan that invests in additional professionals as well as engages expertise across our many education institutions is a critical first step to securing the future of the NY livestock industry. This plan will spread expertise across institutions to multiply benefits as well as improve ability to attract large federal competitive grants that require multi-institutional collaboration.

A shortage also exists of veterinarians with experience in non-dairy livestock, especially for small ruminants, swine, poultry and exotics. Since health care was identified as a critical need by livestock producers across the state, an expanded network of knowledgeable veterinarians is a key component to expanding and securing a supply of New York livestock products.

- **Formalize livestock farmer education programs** - Farmers demand the same rigorous training that supports other entrepreneurs to excel in their businesses. Successful livestock education programs for beef, sheep and goats have been led by Cornell and CCE. Supporting more cohesive and accessible curriculum in production, marketing, and business management across all species of livestock will improve farmer efficiency and profitability and provide business benchmarks for the industry as a whole. Additionally, these programs would provide access to market opportunities like New York Grown and Certified, along with and supporting biosecurity and health.
- **Increase support to commodity-based groups** - Robust farmer organizations can advocate for the specific needs of their industry. Increasing participation from livestock producers on the boards of New York agriculture organizations, such as the New York Farm Bureau and New York Farm Viability Institute will help ensure their needs are understood and funding directed to answer pressing questions.
- **Foster aggregation of livestock and products to improve access of our small farms to value added markets.** - Standardized health and animal management protocols can support pooling of livestock product, stabilize supply and secure markets. Food hubs or other marketing strategies can help aggregate and move products into urban markets, particularly for smaller farms that have labor and volume limitations. Successful models of aggregation are needed to inspire new collaborations to move NY livestock products into emerging retail and wholesale values chains, including the rapidly growing farm-to-school sector.

These strategic investments and creative collaborations could help secure the New York State livestock industry as a vibrant and growing contributor to rural economies in the state. New York has the natural assets to support an expanding livestock industry. With directed action, these assets could be better leveraged to meet the demand for locally-sourced livestock products for our citizens.

References

2017. Pastured Protein: Ecological, Humane and Healthy Meat from the Hudson Valley.
- Broocks, A., E. Andreini, M. Rolf, and S. Place. 2017. Beef Production and Carbon Sequestration OSU Extension Fact Sheets. Oklahoma Cooperative Extension Service.
- Consultants, K. T. 2015. Southern Tier West Livestock and Processing Study.
- Gwin, L., A. Thiboumery, and R. Stillman. 2013. Local Meat and Poultry Processing: The Importance of Business Commitments for Long-Term Viability No. 150. USDA - ERS.
- Peters, C. J., M. J. Baker, M. Carnard, and M. I. Gomez. 2016. Overcoming Supply Chain Barriers to Expanding Northeast Ruminant Meat Production. National Institute of Food and Agriculture, Tufts University.
- Schmit, T. M. 2016. The Economic Contributions of Agriculture in New York State (2014). In: C. University (ed.), Dyson School of Applied Economics and Management.
- Strueh, K. 2018. Parasites in Swine. <https://www.extension.purdue.edu/pork/health/kurtstrueh.html> (Accessed April 18 2018).
- USDA. 2012. Census of Agriculture.
- USDA. 2016. Grazing Management and Soil Health: Keys to Better Soil, Plant, Animal, and Financial Health. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd621806.pdf
- USDA. 2017. Land Values 2017 Summary (August 2017)