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CORNELL UNIVERSITY

THE STATE OF THE USDA INSPECTED RED MEAT HARVEST & PROCESSING INDUSTRY IN NEW YORK & NEW ENGLAND

MacKenzie Waro

Maria Kalaitzandonakes

Michael Baker, PhD

Christian Peters, PhD

Miguel Gómez, PhD

Michael Conard

INTRODUCTION

Between February 2017 and March 2018, New York and New England's USDA (United States Department of Agriculture) red meat harvest plants were interviewed and surveyed for this project. The term 'harvest' is being used throughout this paper instead of the term 'slaughter' or 'butcher' due to the industry standard. This harvest plant survey is part of a larger research project titled "Overcoming Supply Chain Barriers to Expanding Northeast Ruminant Meat Production" which is funded by USDA/NIFA 2016-68006-24744 grant and researched by Tufts University, Cornell University, and Design & Urbanism Architectural LLC.

A USDA harvest facility does not have to harvest and process under USDA inspection; they may harvest and process under Custom Exempt. In order for the plant to have been considered for this study, the plant must have had a USDA harvest component at commencement of the project.

Among producers there is an assumption that there are not enough harvest plants in the region and animals cannot be harvested within a reasonable time frame. While some readers may be asking the same question, the primary focus of the survey was to discover the barriers to livestock harvest for the region of New York and New England. The larger question will be answered at the conclusion of the research project.

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METHODS

The USDA harvest facilities were identified using an approved USDA list. All plants were sent an initial letter with information about the project and requesting an interview, then they were contacted via phone to schedule a time for the survey interview. Year one (Y1, 2017) survey questions were collected in person due to over 100 questions being asked in the survey instrument. In year two (Y2, 2018), we conducted a short follow-up via telephone. Most respondents were plant owners or managers, with a few plants designating an employee to answer the survey questions.

In 2017, there were 62 USDA red meat plants throughout New York and New England. Fifty of these plants participated in Y1, for an 81% response rate. During the second year of the study, there were 62 plants in the region but two plants from the first year were officially closed and two new plants became USDA certified. The total number of USDA plants that participated in Y2 of the study was 52, an 84% response rate.

During Y1 of the survey an average of two hours was spent collecting data with each plant. The second year of the study focused on of follow-up questions, which took an average of 10 minutes. The Y2 questionnaire collected 2017 harvest and processing data and recorded any changes in labor force, the facility, or to the business.

All survey responses were anonymous and no data can be traced back to specific plants.

INDUSTRY BY NUMBERS

KEEPING IT IN-HOUSE

It has been commonly argued that certain plants would want to harvest the animals while having another plant process the carcass. This division was, according to mainstream views, due to facility constraints and the fact that some plants are better equipped for harvesting and other plants are said to be better equipped for processing (i.e. have the ability to smoke product or create a ready-to-eat product).

Surprisingly, the study found that 82% of respondents stated they made the most money processing and fabricating the carcass, but an overwhelming number of respondents (94%) reported they would keep both harvest and processing on site at their plant. Plants said they want to keep both harvesting and processing to maintain convenience for the producer, as well as concerns for food safety and individual HACCP (Hazard Analysis Critical Control Points) plans.

One respondent stated, “In order to keep food safe you need to keep the product at your site at all times. We cannot trust that someone is doing the same things we are, the same exact way.”

Another respondent stated, “It would cost the producer more money if they had to pay for the refrigeration truck for a carcass to go from the harvest plant to a processing plant; producers already complain that harvesting and processing is too expensive.”

Survey Data

FACILITY BASICS



NUMBER OF PRODUCERS

With a range of **15-500**, the average number of producers that use any given facility is **170**. Bear in mind that producers may use more than one harvest plant during the year due to species constraints (i.e. some plants do not or cannot harvest certain species due to facility or labor constraints) or fabrication techniques (some plants do not process under USDA or do not smoke product).



TRAVEL TIME

Respondents reported that producers were traveling anywhere between **15 minutes to 3 hours** to get to their chosen harvest facility; but on average traveling under an **hour-and-a-half**. The wide range in travel time occurs because producers may not be located near plants that provide the specific services they need.

For example, lamb producers may need to travel farther to get to a plant that harvests lambs or a producer who wants a smoked product may travel farther for that service.

SERVICES OFFERED



SMOKING

- **36 plants** offer smoking of product.
- This is a mixture of USDA inspected and custom exempt plants.
- The addition of smoking product **increases constraints** on labor time, cooler capacity, and requires additional protocols in their HACCP.
- More plants would like to offer smoking or ready-to-eat product if there was access to **funding** to assist them.



ORGANIC

- **18 plants** are harvesting and processing using organic procedures.
- Some plants are USDA Organic Certified, while others are not USDA Organic Certified but use the organic practices.
- These plants are performing organic certified harvest **one morning a week**; the request to use organic on a regular basis is minimal and not cost effective to the plant.
- If a producer requests organic procedures, the producer must bear the cost.
- Plants reported that using organic practices **takes additional labor time and paperwork**.



EXOTIC

- **17 plants** have the USDA Exotic license.
- The USDA Exotic license is for animals including **buffalo, bison, rabbit, reindeer, elk, deer, and antelope** and is a **voluntary inspection**.
- The USDA-FSIS inspector must have knowledge about the particular species being harvested and the animal's carcass must physically fit the plant's equipment. Plants that request the voluntary USDA exotic inspection must pay **\$99/hour** for this service.
- Utilizing the exotic license **puts an additional constraint on the plant** due to extra funds needed, potential cooler capacity constraints, and additional HACCP paperwork.

EMPLOYEE DATA

NUMBER OF EMPLOYEES

During data collection, plants reported that there were **over 550 full-time and part-time employees** working in the USDA meat packing industry throughout New York and New England (at the 52 plants who participated in the study); with an **average of 11 employees per plant**.

Though 16% of respondents reported they have gone through formal training programs to fine tune their harvest and cutting skills and 6% stated that they were trained at retail establishments, all respondents stated they were trained on the job through the "school of hard knocks". All of the respondents stated that they train their employees on the job and look for employees with a **willingness to learn** and to take constructive criticism.

WAGES

Employees are paid between **\$9/hour and \$22.50/hour** based on seniority and experience (Figure 1). In the first year of data collection the **average an employee was paid was \$15.00/hour which increased to \$15.10/ hour** during Y2. All of the state's plants had seen a minimum wage increase between Y1 and Y2 of the study.



EMPLOYEE DATA

WORKER'S COMPENSATION

Over 62% of respondents stated that Workers' Compensation places a constraint on their business.

Worker's Compensation insurance, which is a state mandate, is based on job classification. Each class is rated based on risk; more dangerous jobs have a higher rate compared to low risk jobs.

According to the New York Compensation Insurance Rating Board, "Butchering or Slaughtering" and "Packing Houses" pay a rate of approximately \$21 per \$100 of total payroll. Compare this to a low risk job of "Clerical Service" staff at \$0.09/\$100 or a higher risk job of "Logging" at \$45.98/\$100.

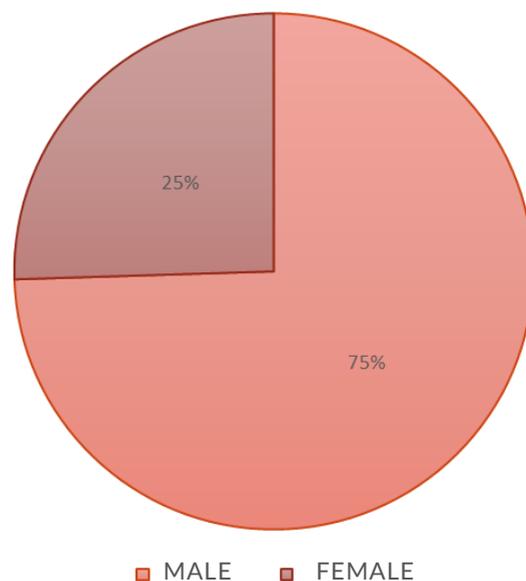
FEMALE WORKERS

There is an **average of three women working at each plant.**

Their tasks include, human resources, office managers, HACCP coordinators, wrappers, reception, and retail. Very few women work on the harvest floor, and during the time period of this study no women were identified as a stunner on the harvest floor.

Figure 2

GENDER RESPONDENTS



HARVEST NUMBERS

Having data that shows the facility's physical capacity compared to harvest capacity allowed the research team to evaluate whether harvesting or processing presents a greater barrier to ruminant production in the Northeast.

HARVEST DAYS

The majority of the plants are **harvesting** two days a week, but are **processing** five days a week. The research team was told by outside sources that the lack of harvest days was due to a lack of USDA inspectors. However, according to the USDA-FSIS when a USDA inspector is requested by a plant and all of the plant's paperwork is approved by USDA, the federal government must provide an inspector because meat inspection is mandatory and is therefore funded by tax dollars. Therefore lack of inspectors was not the cause of fewer harvest days compared to processing, but that it takes fewer labor hours per animal to harvest than it does to process the resulting carcass.

Due to cooler space restrictions, 52% of survey respondents stated that the maximum amount of time available to age beef is 14 days, and for hogs 54% of respondents stated the maximum available hang time was 1-4 days.

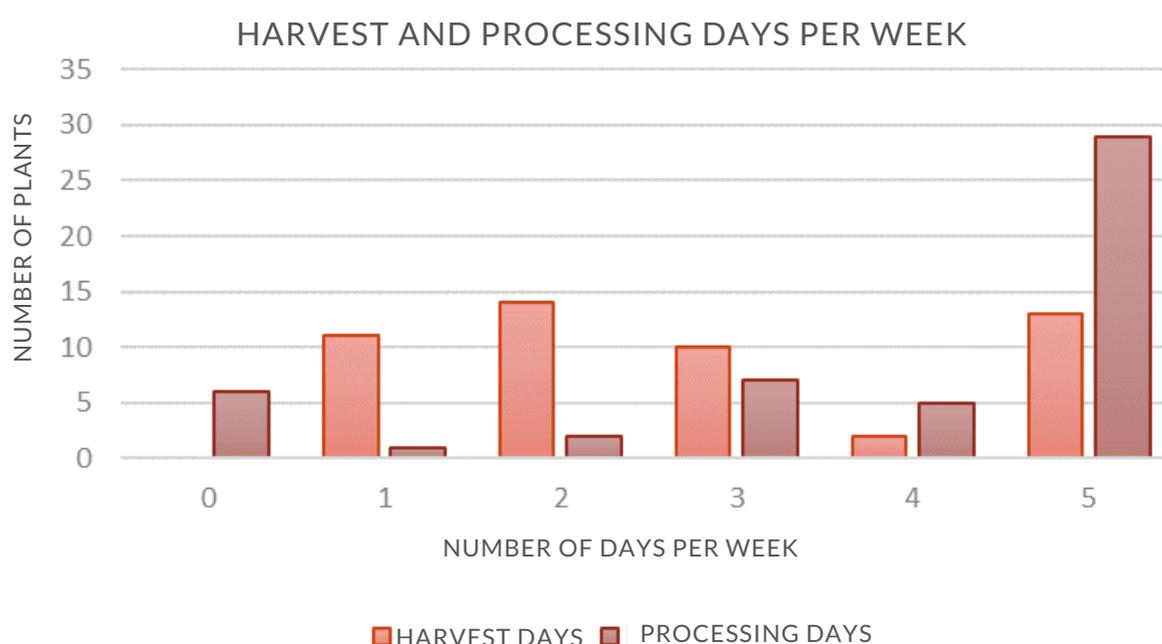
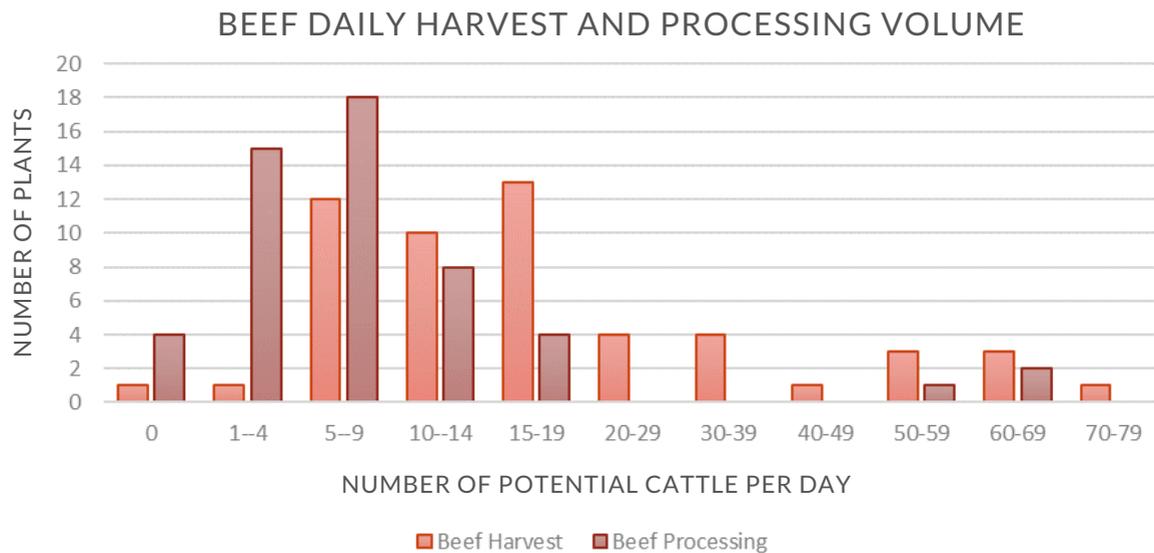


Figure 3

BEEF HARVEST & PROCESSING

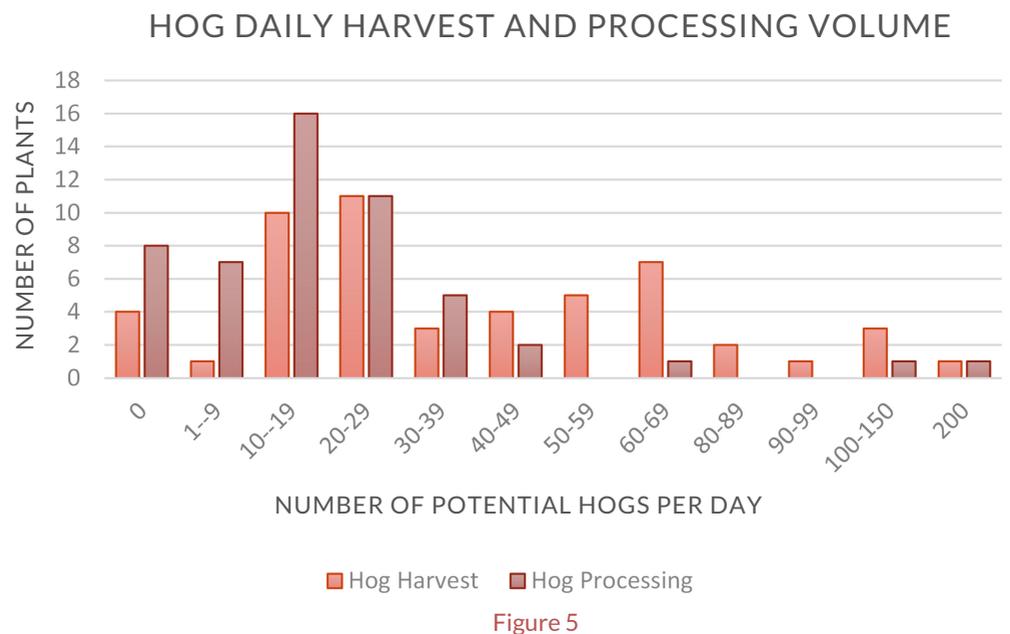
Each plant was asked about the physical capacity of the plant if they were to singularly harvest cattle or lambs or hogs in one day, but not all three species in one day. Physical capacity of the plant does not take labor into consideration, only the physical footprint of the building's harvest floor and cooler capacity.

Figure 4 indicates that the **majority of plants could harvest between 15-19 cattle per day, but can only process 5-9 cattle per day.** Cattle refers to beef and dairy steers, heifers, bulls, and cull cows.



HOG HARVEST & PROCESSING

Hog harvest and processing numbers follow a similar trend to the beef graph above. Figure 5 depicts, plants can harvest **50 or more hogs per day**, but only **process between 10 and 20 a day.** Hog refers to any age pig, male or female.

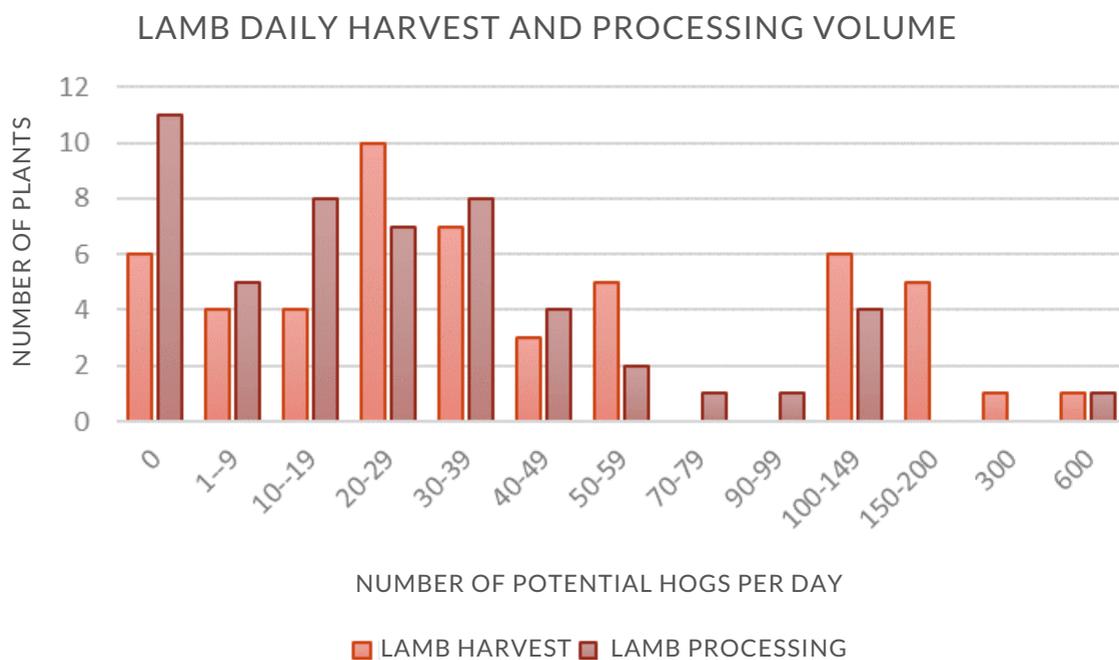


LAMB HARVEST & PROCESSING

The term *lamb* refers to lambs of all weights and gender, mutton of all weights and gender, as well as goats that are either dairy or meat.

Figure 6 suggests that the number of lambs harvested per day can be processed within one day. Many processors stated they would rather not harvest or process lambs due to the lack of numbers to harvest, the intricacy of cuts and fabrication, and that they get more money to process and fabricate other species.

Figure 6



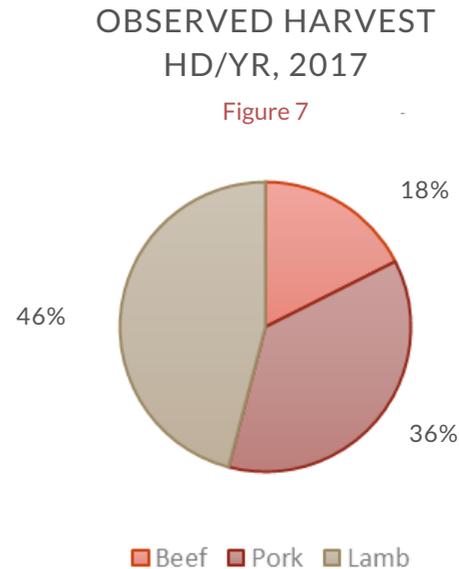
Respondents stated that lambs are **inconsistent to harvest**, and have decreased the harvesting and processing of lambs in order to increase the harvest and processing numbers of other livestock that bring in more revenue.

The survey found that **87.8% of plants would slaughter and process more lamb if the lamb were brought in shorn and clean.**

No **rendering company** that was identified during this study would take lamb hides, as there are no market for lamb hides. Hides must be disposed of as waste, adding an additional cost for the plants.

HARVEST BY NUMBERS & POUNDS

The total animals harvested at the plants who participated in the study is shown in Figure 7. On a per head basis, lambs accounted for the largest **number** of animals harvested, followed by pork and beef. Plant output, however, may be better described by pounds of animal harvested than by number of head harvested.



In Figure 8 below, the following weights were assigned: beef – 1200 lb, pork – 235 lb and lamb – 100 lb. By **weight**, nearly two-thirds of the animals harvested were beef followed by pork, then lamb. This aligns more closely with survey participant’s response that the profit margin in beef and pork was higher than for lamb.

In the plants surveyed, the total number of cattle harvested throughout New York and New England in 2017 was 32,935; hogs harvested were 65,496 and the total lambs harvested was 70,978 (Table 1).

Beef and hog harvest numbers **increased** over the two year period, whereas lamb **decreased**.

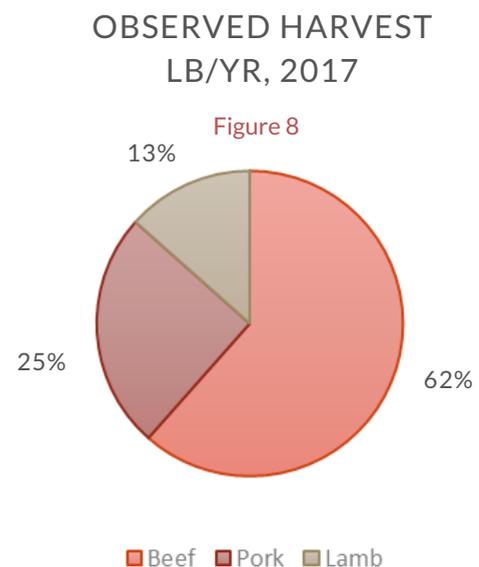


Table 1

Total Harvested/Year	2016	2017	Difference
Beef	32,617	32,935	318
Hog	62,005	65,491	3,491
Lamb	71,827	70,978	-849

PRICING

Beef cattle harvest prices range from \$30-\$130 per animal, with an average of \$77 per animal to harvest with a \$21 standard deviation.

Beef processing range from \$0.35 per pound to \$1.15 per pound. The average price to process beef is \$0.76 per pound, with a standard deviation of \$0.17 per pound.

Hog harvest ranged from \$20-\$100 and **processing** ranged from \$0.40 per pound to \$1.55 per pound. The **average cost to harvest hogs** was \$51 per head +/- \$15 per head. With a standard deviation of \$0.17 per pound, the **average cost to process** pork is \$0.74 per pound.

Unlike beef and pork, there is less consistency in how harvesting and processing of **lamb** is charged by the plant. The break down is shown in Table 2. Plants reported pricing in one of three ways: 1) **harvest by the pound of HCW** (hot carcass weight) and the price of **processing by the head** (32%), 2) **harvest and processing by the head** (27%) or, 3) price of harvest and processing **inclusive** in one price (41%).

Table 2

CHARGING METHOD FOR LAMB HARVEST & PROCESSING

Option	Harvest	Processing	% of Plants
1	\$/lb	\$/hd	32%
2	\$/hd	\$/hd	27%
3	Inclusive	Inclusive	41%

Prices charged to producers are listed in the Table 3 below. There is a **wide range of variation** in the data that was reported by the plants.

Table 3

VALUES CHARGED FOR LAMB HARVEST & PROCESSING

Option	Harvest, \$/lb	Processing, \$/hd
1	0.90±0.18	44±23
2	11±12	43±15
3	95±35	N/A

SCHEDULING

In order to take a closer look at capacity constraints, the survey asked how long a producer needs to call the plant in advance to get a harvest slot. There are **ten federal holidays** throughout the calendar year, with seven federal holidays falling during the months of September through January; months that plants state they are the busiest. Plants may pay their USDA inspector overtime (\$109/hour) to work on holidays, but none of the small plants participating in this study chose this option; though some plants would harvest and process custom exempt on those holidays.

Days to call ahead for a harvest date is shown in the Figure 9. As the graph indicates from **February to May** the majority of plants can get animals in to harvest **within one week of calling**. In contrast, September through December most plants need a **90-120 day lead time** from time of the call, to time of harvest. This is a three to four-month wait from the time a producer calls to schedule a harvest date, to the actual date of harvest.

Most plants suggested that producers call to schedule their harvest date in the spring of the harvest year. Producers may not know when their finish times are or may not have the animal purchased by the time they need to schedule a harvest date. Plants want producers to know that past use does not guarantee a slot is held the following year: **producers need to call every year to schedule**. Plants request that producers show up with the scheduled number of animals because if they show up with more animals than scheduled it puts a constraint on the plant by trying to harvest too many animals in a day. When producers show up with fewer animals the plant is constrained because they need specific number per day to be economical.

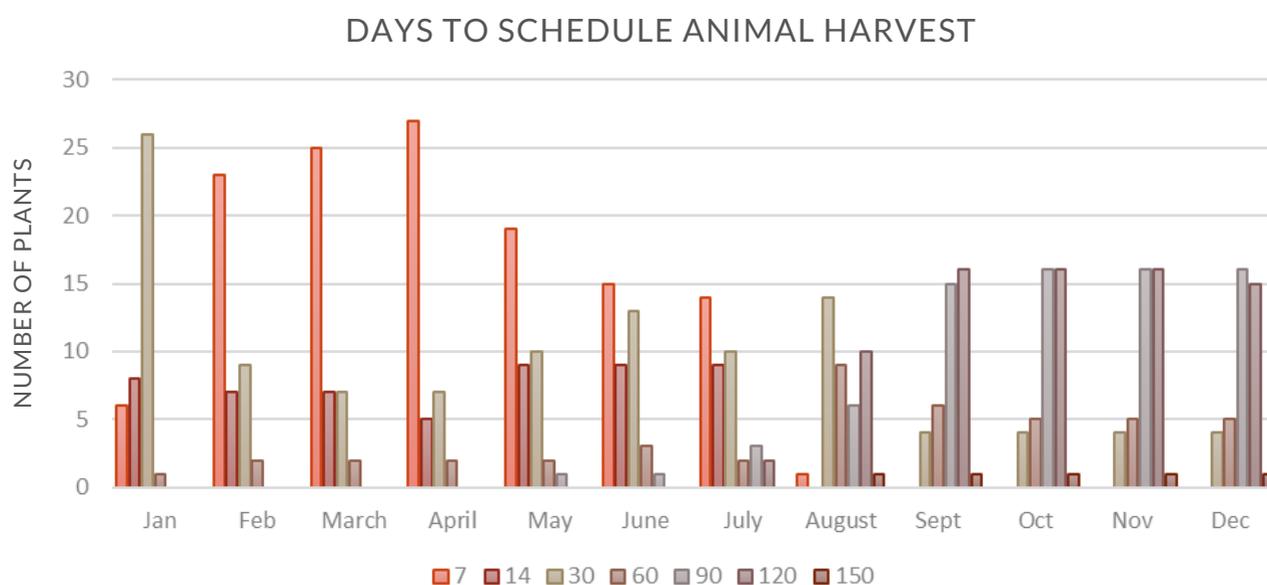


Figure 9

KEY FINDINGS

AVAILABILITY & QUALITY OF LABOR

74% of respondents stated that lack of access to qualified workers is the **biggest constraint to the industry**. 52% stated they want trained employees or employees with some knife work, but can be easily retrained to meet the plant's needs. It is important that these plants find labor that is willing to work, shows up to work, believes in the industry, and understands that they are part of the the national food system.

LIMITS TO COLD STORAGE

68% stated that their cooler size and space **constrains their product throughput**. Respondents want to add additional harvest days, but cannot due to their cooler capacity.

LIMITED ACCESS TO FUNDING

Almost 57% of respondents stated they needed access to funding (access to grants or loans) in order to **grow their business**. Respondents want access to funding to physically expand or update the infrastructure and to update outdated equipment and purchase new equipment. There is outside funding to build a new plant but not to update existing plants. Some plants need to update their floors, coolers, rail system, and would do so if they could get the funding.

SEASONALITY OF LIVESTOCK

Throughout New York and New England, livestock are historically finished in the fall months. This leads to a bottleneck of the majority of livestock needing to be harvested while the plants are already overbooked. If producers start finishing livestock during the slower season (February to May) then existing plants can increase profits. Working together, plants could incentivize producers to provide livestock during their slow times which in turn would help plants keep a year round labor supply. Plants are turning away business in the busy months, due to lack of cooler space and labor constraints. **Plants need business in the off-season to remain viable.**

KEY FINDINGS

THE FUTURE

It is important that our existing plants operate closer to capacity year round to become economical for our livestock industry and to help alleviate barriers for livestock harvest in New York and New England. The New York and New England Red Meat Harvest Industry still require the business in the off season to remain viable. All of the respondents stated that working with producers to finish animals at different times of the year (i.e. different seasons) would help their businesses be successful year round. Plants may have species constraints due to equipment and preference, while some have processing and service constraints (i.e. smoking and organic). It is important to know how many days a plant is harvesting and to see if there is a way we can help to increase their harvest days while making the processing days more economical. Access to funds to increase cooler capacity, help finding a skilled labor force, or adding additional processing options (i.e. smoking) would help grow our region's existing plants. The future of many plants throughout New York and New England is unclear with over 80% of the plants do not have a succession plan, and the average age of owners is 51 years.

The New York and New England livestock producers work hand-in-hand with the meat harvest and processing industry to get meat to consumers, whether this be through the freezer trade program or through commercial and restaurant accounts. It is important that industry stakeholders and policymakers seek strategies to help plants become viable year round through finding labor, providing livestock to harvest year around, and help with funding to update and expand our existing plants.

THE STATE OF THE USDA INSPECTED RED MEAT HARVEST & PROCESSING INDUSTRY IN NEW YORK AND NEW ENGLAND

We would like to thank all of the harvest plants that participated in this study. Because of your time and openness, we were able to gain such valuable and informative information and data. Thank you!

Cornell University

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MacKenzie Waro, M.S. State University College of Environmental Science and Forestry at Syracuse University

Maria Kalaitzandonakes, M.S. candidate in Applied Economics and Management, Cornell University

Michael Baker, PhD, Beef Extension Specialist, Cornell University

Christian Peters, PhD, Associate Professor, Friedman School of Nutrition Science and Policy, Tufts University

Miguel Gómez, PhD, Associate Professor, Dyson School of Applied Economics and Management, Cornell University

Michael Conard, RA NCARB, Senior Founding Principal Design + Urbanism Architectural, LLC

References & links:

NYCIRB current rating values data

Nationwide Insurance workers comp data

USDA grading fees

USDA inspection and grading differences

Comments or questions?

Contact:

MacKenzie Waro

mlw555@gmail.com

Michael Baker

mjb28@cornell.edu

Miguel Gómez

mig7@cornell.edu

Christian Peters

christian.peters@tufts.edu

All interviews were conducted by the research team.

Data details available upon request.

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2019-02	The State of the USDA Inspected Red Meat Harvest & Processing Industry in New York & New England		Waro, M., Kalaitzandonakes, M., Baker, M., Peters, C., Gomez, M. & Conard, M.
2019-01	The State of the Agricultural Workforce in New York		Stup, R., Ifft, J. & Maloney, T.
2018-08	Six Year Trend Analysis New York State Dairy Farms Selected Financial and Production Factors		Karszes, J.
2018-07	Production Agriculture Diversification for Each State in the United States		Tauer, L. W.
2018-06	Dairy Business Summary New York State 2017		Karszes, J., Christman, A., Howlett, A. & Knoblauch, W.
2018-05	Business Summary New York State 2016		Karszes, J., Christman, A., Howlett, A., Windecker, K. & Knoblauch, W.
2018-04	Approaches to Balancing Solar Expansion and Farmland Preservation: A Comparison across Selected States		Grout, T. & Ifft, J.
2018-03	Economic Contributions of the Apple Industry Supply Chain in New York State		Schmit, T.M., Severson, R.M., Strzok, J. & Barros, J.
2018-02	Case Studies of Supermarkets and Food Supply Chains in Low-Income Areas of the Northeast: A Cross Case Comparison of 11 Case Studies		Park, K. S., Gomez, M. & Clancy, K.
2018-01	Six Year Trend Analysis New York State Dairy Farms Selected Financial and Production Factors: Dairy Farm Business Summary New York State Same 138 Farms 2011-2016		Karszes, J. & Windecker, K.
2017-16	Case Studies of Supermarkets and Food Supply Chains in Low-Income Areas of the Northeast: Syracuse Store 2, New York		Park, K. S., Gomez, M. & Clancy, K.
2017-15	Case Studies of Supermarkets and Food Supply Chains in Low-Income Areas of the Northeast: Syracuse Store 1, New York		Park, K. S., Gomez, M. & Clancy, K.

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