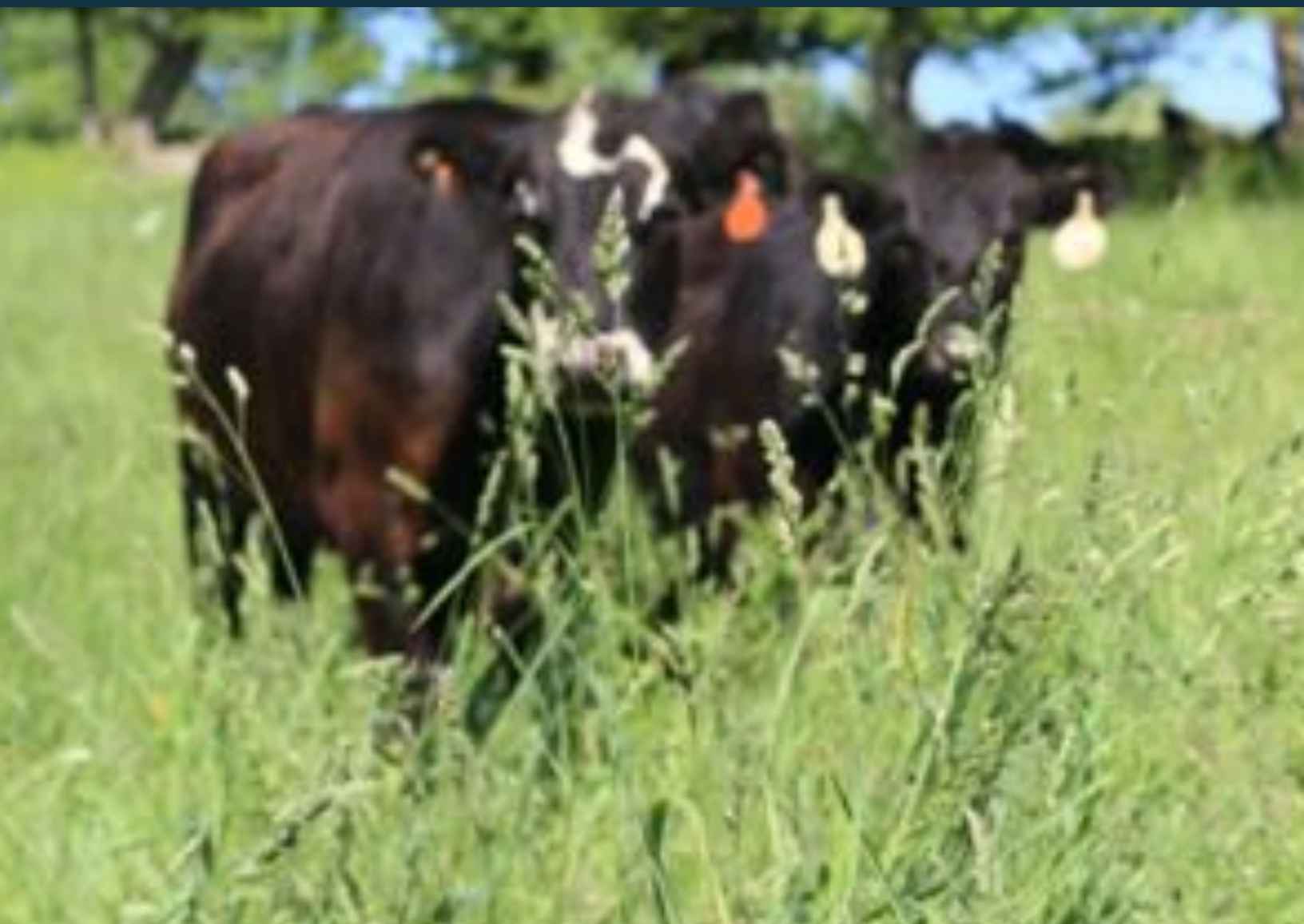


REGIONAL GRASS FED BEEF SUPPLY CHAIN

NEW YORK STATE BEEF CASE STUDY



MARIA KALAITZANDONAKES, AGRICULTURAL AND CONSUMER ECONOMICS, UNIVERSITY OF ILLINOIS;
MIGUEL GOMEZ, CHARLES H. DYSON SCHOOL OF APPLIED ECONOMICS, CORNELL UNIVERSITY;
CHRISTIAN PETERS, GERALD J. AND DOROTHY R. FRIEDMAN SCHOOL OF
NUTRITION SCIENCE AND POLICY, TUFTS UNIVERSITY

It is the Policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

CASE STUDY

SUMMARY

With just 24 paddocks on 90 acres, 84 cows, and his computer Ken Jaffe is starting a regional grass fed beef revolution.

When he started Jaffe knew little about farming. He was practicing family medicine in Brooklyn. In his practice he saw many members of a large food cooperative, Park Slope Food Co-Op. He heard the tinkling chatter of a new, vocal consumer segment. They wanted their food to be healthy, sustainable, and locally produced. Then, when a dairy crisis hit upstate and land values fell, he decided to take up the farming challenge. He bought a hilly farm in the Western Catskills.

In a few short years he grew a herd and created a brand -- Slope Farms. Demand for grass fed, grass finished, local beef continued to grow, and Jaffe realized he would need to include others in his mission. In this hilly, rocky, and often chilly area of Upstate New York, farmers have a difficult time making a living. Jaffe wanted to show his neighbors that grass fed beef offered a simple, and profitable, solution. The area has no shortage of grasses or water, the selected cow breeds did well in the long winters, land values were relatively low, and there was no tilling required. Best of all, they were just a short drive away from a major market.

Jaffe became an important middle man in the grass fed beef supply chain. He contracted with local farmers to buy their cattle, set up dates for them to be taken to be processed, and fulfilled beef orders from buyers across New York that can handle whole or half cows. He managed the relationships with buyers and sellers, minimized the risks for farmers and consumers, and supported the brand through promotion and quality assurance.

As consumer demand for grass fed beef has grown, so has Jaffe's business. This case study explores the upstream and downstream supply chain of Slope Farms, identifies bottlenecks in the system that are preventing expansion, and shows the possibility for growth in regional, grass fed beef markets.





GRASS FED BEEF BACKGROUND

Grass fed beef is not a new concept. Historically, it is the way most beef was raised. Today, it is new again and consumers are clamoring for it. They have a myriad of reasons for purchasing grass fed, including improved human health, animal welfare, environmental protection, climate change mitigation, and taste. And as demand grows, the supply chain must follow.

The U.S. labeled grass fed beef market is about \$1 billion in retail value, or about 1 percent of U.S. beef industry. Unlabeled grass fed beef (which is generally of lower quality than labeled grass fed beef) accounts for about \$3 billion (Back to Grass, p. 5). But demand is growing at speedy rates, especially for high quality, fresh cuts of grass fed beef.

The grass fed beef is made up of many smaller players. There has been some consolidation through branding programs, where many farmers will sell to one buyer who brands and sells the grass fed beef -- similar to the work Jaffe does.

The *Back to Grass* report notes that because the grass fed beef system is fragmented, and at times inefficient, the price premium that consumers pay does not all make it back to producers, as some of the premium goes to paying the additional costs of production and branding all along the supply chain.

“Although consumers may be paying a 70 percent price premium over conventional beef, the grass fed cattle producer only receives a 25 to 30 percent premium when selling his or her animals to a branding program.” (p. 6).

As the grass fed beef industry grows, it will have to tackle the challenges of the supply chain. These challenges include: maintaining a consistent supply and quality throughout all seasons, creating and protecting a firm definition of grass fed beef at the national level, competing with international suppliers, creating efficient systems for processing and distributing grass fed beef, among other things.

CASE STUDY BUSINESS MODEL

> FARMER

- minimizes risk through contracting
- predicable price and volume
- quick payment
- guaranteed a buyer at least one year in advance
- can manage farm mostly independently
- does not need to actively seek out customers
- receives premium on animal
- must adhere to Slope Farm schedule, quality standards, and grass fed protocols
- must have contracts that limit the farmer's and customer's ability to circumvent their role

> SLOPE FARMS

- manages risk
- could have trouble if a large customer was lost because Slope Farms would still have contracted obligations to pay the farmers
- manages relationships
- must have contracts that limit the farmers or customers ability to circumvent their role
- manages brand, including creating consistent high quality product through aggregation from multiple farms.
- acts as third party verifier of quality
- occasionally this means getting rid of farmers if the quality of their product is low

> PROCESSOR

- manages risk by scheduling regular business up to a year in advance with Slope Farms
- does not need to manage relationships between buyers, sellers, and transportation
- never takes possession of animal, just completes the service
- manages specifics of processing consistency week to week

> TRANSPORTATION

- Predictable weekly delivery to mostly the same delivery sites for both live animals and processed products

> CUSTOMER

- minimizes risk through contracting
- predictable high quality only available through aggregation service

WHAT'S THE DIFFERENCE?

Most beef raised in the U.S. is fed on pasture until the finishing stage - where the cows are then fed a mixture of grains and food byproducts.

Grass fed beef, on the other hand, is fed on pasture even during the finishing stage.

Grass fed beef is finished on grasses, sold a little later, and can be sold for a premium.

SUPPLY CHAIN

Below we outline an example of a branded regional grass fed beef supply chain based on Slope Farms' costs. The amounts are calculated in dollars per pound of retail cut meat, using an average number of pounds of retail cut per cow in this supply chain, 450 pounds. We break down the supply chain into six groups: the farmers who raise the cows, transport from the farms to the processor, the processor, and transport from the processor to the customer, the branding program (i.e. Slope Farms), and customers.

	PRICE	Price margins for supply chain members	PERCENT of CUSTOMER'S PRICE
FARM PRICE	\$4.60		30.67%
TRANSPORT (FARM TO PROCESSOR)		+\$0.10	0.67%
PROCESSING		+\$1.50	10.00%
BRANDING PROGRAM		+\$5.50	36.67%
TRANSPORT (PROCESSOR TO CUSTOMER)		+\$0.80	5.33%
CUSTOMER'S PRICE	= \$15.00		16.67%

INPUTS

The inputs for a rotational grazing system are relatively simple, Jaffe said. Below is a breakdown of his essential inputs. It is important to note that regional grass fed beef farms can benefit from economies of scale, as the work of grazing 20 or 100 animals is relatively the same. Also, the farms are relatively capital intensive as the farmer must have land, cows, and machinery. For Jaffe's farm to be profitable, he said, he must finish at least 30 animals per year.

> LAND

Jaffe's land is perennial pasture -- a mix of different grasses and weeds including clover, dandelions, burdock, and others. He does not seed or change the grasses. As his soil has improved and his experience has grown, so has his ability to raise more animals per acre. He now grazes 1 animal per 1 acre. During the winter months grass grows slower. He buys large round bales of hay from local suppliers. So far, he said, he has never had a problem procuring hay, as New York is a hay exporting state.

> COWS

Picking a breed of cows that do well on grass and can handle the New York winters is an important step. Jaffe selected Black Angus and Hereford, although others may do as well in the climate. Buying from a supplier who has experience and good genetics is important, Jaffe said. When he began he paid less for lower quality cattle, thinking he could manage the genetics on his own. "I thought I'd have it figured out in five years," he said. "I was deeply delusional." Jaffe said if he had to do it over again, he would have invested earlier in good genetics.

> EQUIPMENT

Handling equipment is expensive, and new farmers are daunted by the cost, but Jaffe notes that it is essential from both a human health and animal welfare standpoint. Farmers will also need a tractor to move hay bales. Some farmers under the Slope Farms brand grow hay themselves, which requires that they own baling equipment.

> WATER

On his land he has easy access to multiple flowing bodies of water; he also has heated troughs for water during the winter months.

> OTHER

Farmers will also need fencing, vaccinations, medicines (although Slope Farms does not use antibiotics), mineral blocks, etc. Taken all together, the inputs can insure good quality beef in important attributes like size, weight, flavor, and fat.





FARMERS

The Slope Farms brand sources its beef from approximately 20 regional farmers, although about 6 of the farms provide 80 percent of the business, Jaffe said. The farms are located all across the region - from Northern Pennsylvania to the Finger Lakes to the Hudson Valley. All the farms though are within a two hour drive from Jaffe's.

Mallory Mort is one of the farmers that raises cattle under the Slope Farm brand. His farm, based in Ghent, New York began in 1976. Currently the farm has 28 "mama cows", Mort said, and all of his cattle marketed through Slope Farms are "conceived, born and raised here." The farm owns 520 owned acres and leases another 150 acres, most of which is devoted to breeding and raising Thoroughbred horses.

Farmers work with Jaffe because he manages market risk by giving them a forward contract on the cattle.

Jaffe also pays a premium for the grass fed beef and pays quickly. Jaffe gives the contracts to farmers at least a year in advance. Slope Farms pays by hanging weight.

His oversight of the different farms varies, he said. Some farms produce good quality every year and require little oversight and others require more support. Although Slope Farm's consumers understand that the quality will be somewhat variable due to season and across farms, Jaffe protects the brand by ensuring a good quality product every time. Generally, this system works well. Although his margins were squeezed pretty tightly when a large grazing cooperative began and later went bust.

"For me, one of the big things is knowing that Slope Farms markets a high quality, reputable product because that is what I like to produce," Mort said. "I believe that quality and reputation are key to marketing any product. Producing grass fed beef for Slope Farms works because most of my time is spent on our Thoroughbred operation."



PROCESSOR

Slope Farms uses a local meat processor, Steiner Packing, based in Otego, NY. The plant opened in 1950 and has been USDA inspected since 1976. The current owner, Nathaniel Brandon has been working there for about 15 years. The plant has four full time and two part time employees.

"We aren't huge, but we're always busy," Brandon said. "We're slaughtering between 18-20 beef a week, probably anywhere from 6-12 pigs per week, and another 6-12 lambs per week."

The plant serves between 300 and 350 total customers of varying sizes. Jaffe is the plant's largest customer. Brandon said Jaffe's animals have "good marbling, good fat cover" and that "the animals are well taken care of." Slope Farms is an important customer because of its size and reliable, year round schedule.

"The best thing about him is he's year round," Brandon said. "A lot of people want to pile in here in the fall, and we try to make it work but there are only so many spots. Everybody wants October, but there are only so many days."

Brandon said that Slope Farms books their animals with his plant a year ahead of time. He said that's good for Jaffe, good for the farmers, good for the plant. Having animals year round and booking ahead of time makes Slope Farms a great customer to work with.

Jaffe said his own animals provide him with flexibility, if there is a gap in what the farmers are able to get him. Both Brandon and Jaffe would like to see the plant expand capacity. Nathaniel said he hopes in the next few years he can add cold storage space and get into smoking meats. He said the other limiting factor to growth is access to reliable, quality workers.

The contracted trucks pick up Slope Farm's beef at Steiner Packing, so it also serves as an important brick and mortar hub for the Slope Farm's operations, Jaffe said.





CUSTOMERS

Slope Farms began to fill unmet consumer demand. Consumers in New York City and Brooklyn wanted to purchase locally produced, responsibly raised, grass fed beef.

Slope Farms formed relationships with restaurants, food coops, and butchers all across New York State. In the beginning neither Jaffe nor his customers knew much about the grass fed beef business. But overtime his customers have become “very sophisticated,” he said. “They know what they want now and they’re vocal about getting it right.” Customers care about conditions of the animals, quality of the meat, and the size of size of the orders, Jaffe said.

For conditions, they want to see that the cattle are being raised in humane conditions, are being fed and finished on grass, are not given antibiotics, are not put in CAFOs, etc. This occasionally means that the customers want to visit the farm.

The head butcher of one of Jaffe's main customers, Josh Peil, said that visiting the farms is important because it allows him to ask questions of Jaffe and be able to answer inquiries that come from his employees' and customers' in New York City.

For quality, Peil said they want the beef to have good intramuscular marbling and have a carcass weight of 700-800 pounds. Peil said that Jaffe's beef is "excellent."

Importantly, Jaffe only takes on customers who can use whole, half, or quarter animals. This is a bottleneck for expansion.

In a world where most customers buy specific cuts of boxed beef, only a talented few know how to handle whole or partial animals. Buyers must learn how to use the organs and a whole lot of ground beef, in addition to the premium cuts.

Peil does this by being part of a company that includes restaurants which use a lot of ground beef for burgers, by working with chefs on how to push certain cuts, and by tailoring his ordering to how much ground beef he can handle rather than how many prime cuts he thinks he could sell. Chef Patrick Smith, said they also dry age meat to increase the value and their flexibility. Smith also said that they save the most premium cuts for the weekend menus and plan far in advance for holidays and events (for example, his restaurant does lots of weddings).

Up to this point, Jaffe hasn't had to market too much. Most of his customers have come through word of mouth. In the future he may expand his marketing efforts, but doing so would certainly require hiring another person. His brand is highlighted, though, whenever a customer buys his beef through the Slope Farms's label.

Customer demands are ever evolving, and Jaffe does a good job at evolving along with them. Most recently, there has been an increased push within the food industry for traceability, or wanting to know exactly where the food started out. Customers are also requesting certified organic, Peil said.

BOTTLE NECKS

Consistent Quality + Quantity

One of the biggest challenges in grass fed beef is trying to replicate conventional beef's year-round access to high quality and high volume beef. Grass fed beef gain weight more slowly than grain fed ones do. This is especially true in the winter, although proficient farmers do this well.

Maintaining high quality beef from multiple small to medium farms, even throughout the winter is a challenge for Jaffe and the rest of the grass fed beef industry. Additionally, maintaining a steady quantity throughout the year is an importance balancing act. Jaffe has his own animals, partially to fill in if there are "gaps" in his farmers' supplies.

Processing Capacity

Although there are many processing plants spread across the country (Back to Grass), for regional supply chains of grass fed beef these plants may still be too far away or too small in size. Jaffe is lucky to live near a high quality processor, but his processor still has limited capacity.

The New York processor prioritizes Jaffe's products, but his business is still limited by the processing capacity. Limited processing makes the regional grass fed beef supply chain less predictable and more costly.

Processing Cost

The cost of processing at smaller plants raises the final cost of grass fed beef. This occurs in part because larger processors can achieve efficiencies through scale. Larger processing orders are also able to participate in byproduct markets for many of the beef industry's odds and ends, for example hide and tallow (Back to Grass, p. 28).

Customers

One of the most apparent bottlenecks is the limited number of consumers or retailers that can take partial or whole animals. Most customers are used to buying "boxed beef," Jaffe said.

Consumers want to buy certain cuts meat at the times they desire, and they generally don't have use for the less popular cuts or byproducts. Additionally, grass fed ground beef receives a much smaller premium than other grass fed beef cuts. Only a very select group of butchers, restaurants, and consumers are willing and capable to buy beef in this way.

For regional grass fed beef supply chains to grow, this is one major hurdle they must overcome - either by creating a "boxed beef" system or by increasing consumers' demand for partial or whole animals.



CLOSING

Slope Farms coordinates their grass fed beef enterprise across many farmers and customers. They emphasize maintaining relationships and collaborating with all the players along the supply chain to maintain a high quality product. Slope Farms provides regional beef with a different, but effective, supply chain model that minimizes risk for small farmers, effectively utilizes regional processing capacity, and keeps customers happy through quality control and transparency of farming methods (including farm visits).

This case study underscores the importance of fostering

and maintaining relationships in regional, niche markets and provides a blueprint for branding programs learning to manage quality across farms and seasons. Slope Farms' experience suggests there is tremendous opportunity in regional, grass fed beef branding programs, especially in areas with easy access to large, urban customer bases.

This case study also found that there is room to improve these systems by increasing research on regional supply chains and farmer involvement, giving processors access to funds to retrofit older plants, and increasing customer capacity to use whole or partial animals.



CITATIONS & FOOTNOTES

INTERVIEWS

Interviews conducted by Maria Kalaitzandonakes

Ken Jaffe: June 11, 2018, June 18, 2018, in-person

Josh Peil: June 18, 2018, in-person

Nathaniel Brandon: November 16, 2018, telephone

Malory Mort: December 7, 2018, telephone and email

PHOTOS

Photos of Slope Farms' animals and land were taken by Maria Kalaitzandonakes on June 11, 2018 and June 18, 2018.

Other images:

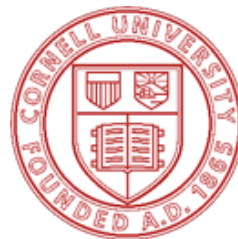
NYC Taxi Photo, Canva free media.

LITERATURE

Cheung, R. and McMahon, P. (2017). "Back to Grass: The Market Potential for US Grassfed Beef"

King, R., Hand, M., and Gomez, M. (2014). "Growing Local: Case Studies on Local Food Supply Chains." University of Nebraska Press.

Stake, R. (1995). *Art of case study research*. SAGE.



OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2020-02	Cost of Establishment and Production of Cold Hardy Grapes in the Chautauque Region of New York - 2019		Davis, T., Gómez, M., Moss, R., Martin, K., and Walter-Peterson, H.
2020-01	Cost of Establishment and Production of V. Vinifera Grapes in the Finger Lakes Region of New York - 2019		Davis, T., Gómez, M., Moss, R., Walter-Peterson, H.
2020-01	Regional Grass Fed Beef Supply Chain		Kalaitzandonakes, M., Gómez, M., and Peters, C.
2019-06	Adapting Your Labor Strategies to New York's Revised Farm Employment Laws		Eiholzer, L., III, J., Karszes, J., and Stup, R.
2019-05	Assessing the Barriers to Increasing Customer Participation and Farm Sales at Farmers Markets: Implications for Marketing Strategy		Schmit T.M., Severson, R.M. & Sawaura, E.
2019-04	Crop Budgets and Cost & Return Studies for Organic Grain in Western New York		Li, J., Gómez, M. & Murphy, J.
2019-03	2018 New York State Berry Market Analysis: Pricing Information of Local Berries		Davis, T., Gomez, M. & Pritts, M.
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., III, 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.

Paper copies are being replaced by electronic Portable Document Files (PDF's). To request PDF's of AEM publications, write to (be sure to include your e-mail address): Publications, Department of Applied Economics and Management, Warren Hall, Cornell University, Ithaca, NY 14853-7901. If a fee is indicated, please include a check or money order made payable to Cornell University for the amount of your purchase. Visit our Web site (<http://tyson.cornell.edu/outreach/bulletins/>) for a more complete list of recent bulletins.