May 2021

FARM TO FORK

2021 AND BEYOND

MULTI-CLIENT REPORT ON DIRECT-TO-CONSUMER TRENDS

Iowa State University

AGRICULTURAL ENTREPRENEURSHIP INITIATIVE

Introduction

This semester's domestic travel course was project-based, the Farm to Fork Project. Twelve students explored the frontiers of entrepreneurial opportunity for direct-to-consumer agricultural businesses. They met a range of agri-food entrepreneurs and went through a multi-faceted process of opportunity analysis. This document is their written summary of what they learned, observed and concluded.

Conducting a travel course during a pandemic was interesting for any number of reasons. We are deeply appreciative of the entrepreneurs who were willing to host us during our trip through Kansas, Oklahoma and Texas in January. We are also thankful for the many guests who shared their stories and ideas with us either on campus or via Zoom over the course of the semester.

The students were able to see the impact of pandemic-induced consumer buying changes. They also gained perspective that much of what has changed in 2020 and 2021 is only accelerating trends that will shape a very different future in agriculture and the food industry. And these students will, over the course of their careers, enable that future.

Thank you most of all to the twelve Iowa State University students who engaged over the course of the semester.

Kevin Kimle
Rastetter Chair of Agricultural Entrepreneurship

Dave Krog
Entrepreneur-in-Residence

Contents

January 2021 Travel Takeaways

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Juniper Hill Farms and Sunflower Provisions

Lawrence, KS

USDA Organic Vegetables

Scott Thellman

Established in 2006, this agricultural operation focuses on post-harvest handling of local food systems. Juniper Hill Farms is the production side of the business, while Sunflower Provisions distributes product directly to customer's homes

Take-Aways:

1. Vertically integrate toward more direct relationship with consumers
2. Improve ease of shopping experience for customers

COVID Impact → Hiring dependable farm labor was more difficult and the business(es) had to pivot to different delivery methods

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Enterprise Grain Co. / Enid Brewing Co.

Enid, OK

Feed, Seed, & Brewing

Brady is a jack of all trades! He operates at least eight businesses. Enid Brewing Co. is a ‘grain to glass’ brewery and eatery that encompasses Brady’s strategy. ‘Beer, bread and beef.'

Brady Sidwell

Take-Aways:

1. Sell ingredients, not commodities
2. Enter consolidated industries where incumbents don’t serve niches effectively

COVID Impact → Brewery customer limitations and the cost of commodities

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Texas Fungus

Arlington, TX

Artisanal Mushroom Farm

Adam Cohen

Texas Fungus produces a variety of mushrooms in their 2,000 sq ft facility. Texas Fungus got their start in 2018 when Adam stumbled upon a Facebook group for mushroom growing enthusiasts where he first connected with his business partner. Texas Fungus produces more than 500 lbs. mushrooms/week.

Take-Aways:

1. Need to have a unique product in your market for premium pricing
2. If you have the 'right' price, 20 percent of people will think it's too high

COVID Impact → Smaller farmers markets and loss of restaurants ordering translated into tripling of consumer-direct business

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Solaro Estate Winery

Dripping Springs, TX

Vineyard & Winery

Robert Fritz & Family

Solaro Estate Winery creates award-winning handcrafted wines from Texas grapes. Guests can enjoy their wine while looking out over the vineyards or join a wine club.

Take-Aways:

1. Learn from other businesses in your industry
2. Insist on distinctive, high quality products and experiences

COVID Impact → Limited events/tastings at the winery created need to pivot to online platforms

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Texas Hill Country Olive Company

Dripping Springs, TX

Olive Oil Producer & Venue

Cara and John Gambini

Texas Hill Country Olive Company is a family-owned business. The olive orchard features an Italian olive press and large tasting room. There is also space for events and tours are offered in a variety of forms

Take-Aways:

1. Pioneering a new industry is challenging, but rewarding
2. Work constantly to improve unit economics – both price and yields

COVID Impact → Storefront and bistro sales were dramatically slowed so e-sales became more important

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Indoor Seas Seafood Company, LLC

Austin, TX

Aquaculture RAS Facility

Steve Barron

Steelhead trout are traditionally sourced outside the U.S. However, at Indoor Seas, Steve is looking to raise these trout locally using RAS technology. His business looks to ensure consistent supplies of high-quality fish produced sustainably

Take-Away(s):

1. Conduct extensive diligence with new technologies
2. Create a culture around your brand

COVID Impact → Facility building process has slowed

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Fieldcraft Inc.

Online Platform

Ingredient Marketplace

Fieldcraft is a B2B ingredient marketplace that offers a platform for companies source unique products from farmers. Products include flours, powders, oils, purees, concentrates, and more.

Michael Chapman
Kristy Flynn

Take-Away(s):

1. Transparency is a driving trend (origin stories, purpose buying)
2. Move fast/break things - Zuckerberg theme => Stupid!

COVID Impact → Availability of products being sold changed, and transportation impacted

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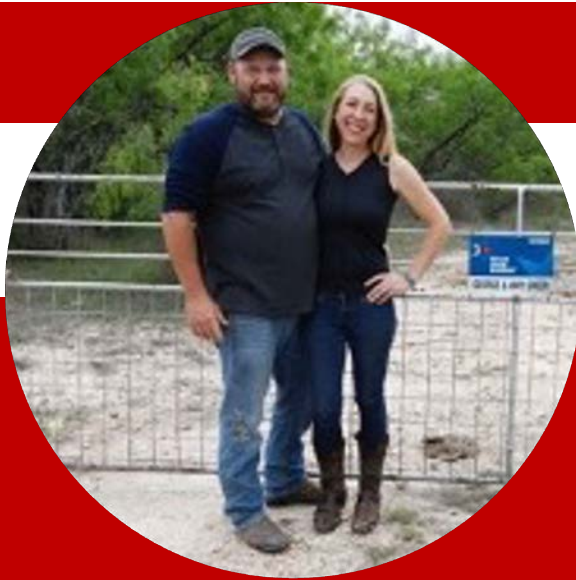
Winters Family Beef

Brady, TX

Wagyu Beef



George Winters
Amy Winters

Winters Family Beef offers Wagyu beef products that are well marbled and dry aged thirty days. They market it at farmers markets

Take-Away(s):

1. Find a niche that’s not common and develop it
2. With a unique product, 90 percent of customer job is education

COVID Impact → Lack of operating farmers markets and harvesting appointments.

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Studebaker Farms

Fredericksburg, TX

Peaches

Studebaker Farms is a family farm specializing in fresh peach production. While they are a small operation, Studebaker Farms works with state and national horticulturist to improve production with high tunnels, rootstock development, and more

Russ Studebaker

Take-Away(s):

1. Business model insight – Grow a product that people come back to buy
2. Find ways to use technology to improve production – high tunnels

COVID Impact → Less seasonal tourist, governmental regulations for industry ramped up

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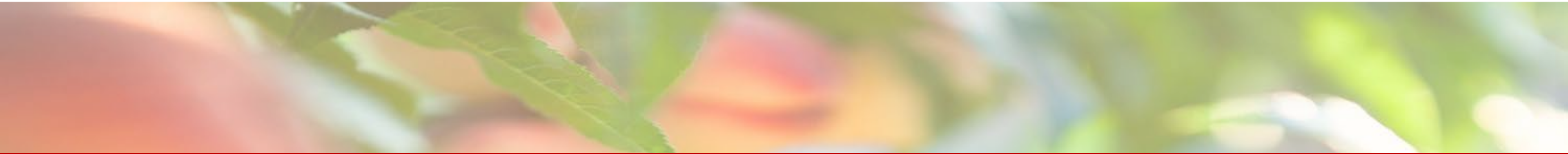
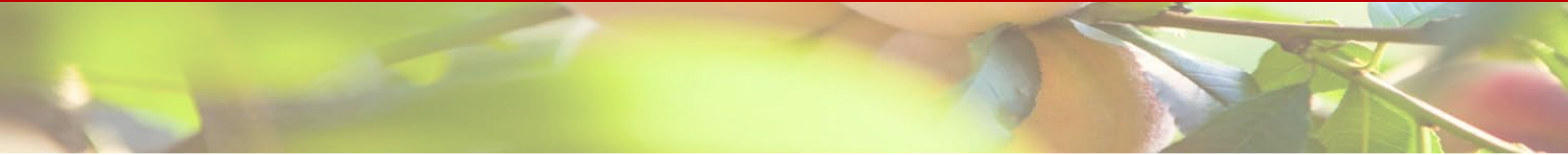
Case Studies



Each student wrote one farm-to-fork case study. After sharing the case studies, similarities in farm-to-fork businesses became more apparent. The following section highlights common themes and categorizes the case studies in ways that compare the entrepreneurs' challenges and successes.



Start small, diversify, expand

Twin Oaks Vineyard and Winery

Wine, catering, event space

- Andy Hudson returned home to start a vineyard with his family despite not having prior experience
- Three years after planting grape vines, wine production began
- Hudson took advantage of waiting period to create a dynamic business plan
- Diversified the business by selling vine cuttings, building event spaces and welcoming guests for many occasions

Farmington, Missouri

(573) 756-6500

info@twinoaksvineyard.com

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Start small, diversify, expand

Griffieon Family Farm

Meat products

- LaVon Griffieon's son began raising pasture poultry to save money for a four-wheeler
- Began grinding his own non-GMO feed and raising chickens to be antibiotic-free
- Griffieon Family Farm expanded to grass-fed sheep and non-GMO beef and swine — all produced without hormones and antibiotics
- Griffieon's advice is to develop a target market and diversify a business in a way that attracts specific customers

Ankeny, Iowa

(515) 946-0876

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Find your niche

Grand View Beef

100% Grass-fed beef

- Knute and Amanda Severson realized consumers looking for "natural" products; "No added hormones," "Non-GMO," etc.
- Decided to raise 100% grass-fed hereford cattle to appeal to health-conscious consumers
- Grand View Beef is found at local farmers markets, grocery stores and restaurants
- Customers can also arrange a farm pick-up, and order meat online for direct-to-you-door delivery

Clarion, Iowa

(515) 344-2353

info@grandviewbeef.com

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Find your niche

Oak Barn Beef

Chi-Angus beef

- Owner Hannah Esch sells individual cuts, specialty items, beef bundles and subscription boxes all over the country
- Oak Barn Beef products come from Chi-Angus cross cattle and genetically tests, selecting for marbling and tenderness
- Esch also outsources meat from local producers, but these cattle must also be DNA tested and approved by the business
- Oak Barn Beef products are dry-aged, adding another unique quality attribute to the beef

West Point, Nebraska

(402) 269-0036

hannah@oakbarnbeef.com

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Explore different niches

Craver's Little Red Barn

Produce, meat, candles, soap

- Jill Craver began growing vegetables in a small garden and then began selling at farmers markets
- Craver started making 100% soy wax candles and scented goat's milk soap
- Diversifying their business reduced risk of unprofitable seasons due to challenging produce growing conditions
- Craver says it is important to try new things and learn from unsuccessful attempts

Taylor Ridge, Illinois

(309) 373-0151

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Create agritourism experiences

Charleston Tea Garden

Tea and agritourism

- Bill Hall is a third generation tea taster receiving formal training in England and completing many apprenticeships
- In 1987, he bought an experimental tea garden owned by Lipton and later partnered with Bigelow
- Charleston Tea Garden is made of 158 acres, approximately 50 acres of tea plants
- Tea is processed on-site and more than 80,000 guests visit the plantation per year for tours, events and more, driving a significant portion of the economics of the business

Wadmalaw Island, South Carolina

(843) 559-0383

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Create agritourism experiences

[Cinnamon Ridge Dairy]

Dairy farm tours

- Joan and John Maxwell's operation is ranked No. 1 in the nation for milk production
- Milk jersey cattle using robots and make on-site dairy products such as cheese and ice cream
- Offer tours for students, families and even industry professionals and international farmers
- In addition to on-site tours, Cinnamon Ridge Dairy products can be found in local grocery stores and restaurants

Donahue, Iowa

(563) 843-2376

TourMyFarm@gmail.com

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Create agritourism experiences

Aldrich Tree Farm

Christmas trees

- Lee Aldrich owns 20 acres of land dedicated to White Fir and Fir Christmas Trees
- Customers can cut down their own trees, then employees shake it, bag it and tie it to their vehicles for transporting home
- Aldrich's Tree Farm also drills holes for easy-to-use tree stands made and sold on-site
- Other products and services on the farm such as Christmas wreaths and craft shows

Belmond, Iowa

(515) 571-3286

Mitigate production risks

Taylor’s Market

Fruits, vegetables, flowers

- George and Janice Taylor shifted from farming row crops to fruit, vegetable and flower gardening
- Produce from Taylor’s farm and other local producers are sold at two roadside stores
- Challenges with soil and water, unpredictable weather and obtaining specialty crop insurance
- Seeking new opportunities, including growing more pumpkins

Muscatine, Iowa

(563) 264-1393

taylorsmarket@hotmail.com

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Mitigate production risks

Red Granite Farm

Fruits, vegetables, flowers

- Nicole and Steve Jonas grow flowers and produce to sell at their home garden center
- Having a home garden center combats added labor of hauling plants to and from external selling locations
- Nicole buys plugs and bare roots and replants them, as well as purchasing ready-to-sell shrubs, succulents, annuals and perennials
- The couple also has high tunnels for produce to avoid adverse weather conditions and encourage early plant growth

Boone, Iowa

(515) 432-5966

redgranitefarm@hotmail.com

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Find creative ways to market products

Healthy Harvest Initiative of North Iowa

Local food marketing

- Non-profit organization formed by farmers to market and distribute fresh produce
- Educate producers to be more effective in making connections and marketing products
- Educate consumers to buy local and support farm-to-table opportunities
- Promotion efforts span across grocery stores, local restaurants and agritourism events

Hampton, Iowa

(515) 337-2445

info@healthyharvestni.com

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Enabling Technologies

Enabling Technologies Definition

Enabling technology is an invention or new innovation that can be applied to drive change in the capabilities of a user or culture. These are fast developing technologies that range in various fields. In Layman's terms – enabling technologies are created to advance society

Question:

How can farm to fork business utilize enabling technologies?

http://www.enablingtechnology.eu/what-is-enabling-technology-and-how-has-it-changed-us/

https://www.google.com/url?sa=i&url=http%3A%2F%2Fsimpleicon.com%2Fgear-9.html&psig=AOvVaw14ltL22EXewWPD8UiSGQac&ust=1618328512751000&source=images&cd=vfe&ved=0CAIQjRxqFwoTCLDM16qG-e8CFQAAAAAdAAAAABAD

Two Types of Farm to Fork Businesses

Direct Meat & Fresh Produce Companies

- Two highly prevalent Farm to Fork business models are meat and fresh produce companies
- There are enabling technologies that benefit both models

“Uberization” of Delivery

Delivery and shipping can be a challenge for Farm to Fork businesses. Farm-to-Fork businesses could benefit by utilizing emerging delivery services

UberEats, Grubhub, DoorDash and analogous services are beginning to provide direct to consumer delivery for farm-to-fork producers

- Many people have become more comfortable with delivery systems since the onset of COVID-19

Picture source: https://www.odtap.com/wp-content/uploads/2019/03/Ubereats-Business-model.jpg

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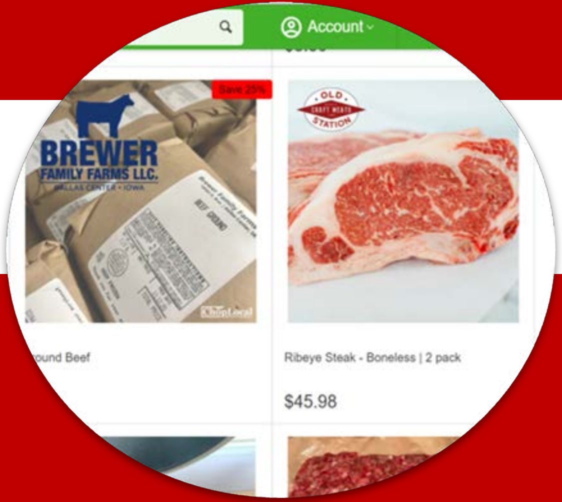
Online Marketplaces

Online marketplaces can enable new connections between farmers and consumers. Several programs have been developed to allow for consumers to order online

- Shopify
  - Self-service marketplace technology
- ChopLocal
  - Buy local meat from family farmers and small butcher shops online and have it delivered to your doorstep
- Farmigo
  - Software that allows farmers to manage CSAs and Food Hubs



Picture from ChopLocal

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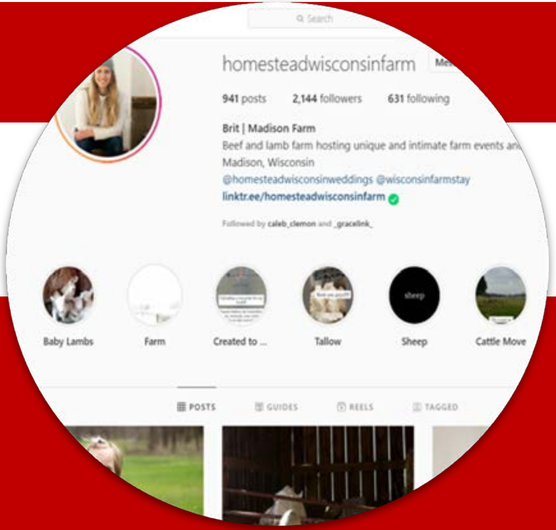
Social Media Enabled Marketing

Social media and easy-to-use website creation tools allow for cheap, simple marketing for Farm-To-Fork businesses



Picture from @homesteadwisconsin on Instagram.

Benefits of Social Media and Website marketing for Farm-To-Fork businesses

- Increased connection - can give insight for consumers into individual farm stories
- Social media, such as Facebook, can allow for easy, affordable advertising
- Using social media can increase interest in the operation and allow for greater connection with producers

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Traceability – QR codes

Several of these technologies apply to both produce and meat production. QR codes fall under both categories- especially in the Farmer's Market environment

- Producers can include a QR code on their stand, on their packaging, or insert one one that is linked to a recipe in a package
- The QR code could be linked to recipes, other booths that sell complementary goods, information about their farm, or where else they sell

Scan this to make your own QR code!

Due to COVID-19, many people are now more aware of QR codes and there are less barriers to using the technology. Restaurants have begun using the technology to provide menus for their customers

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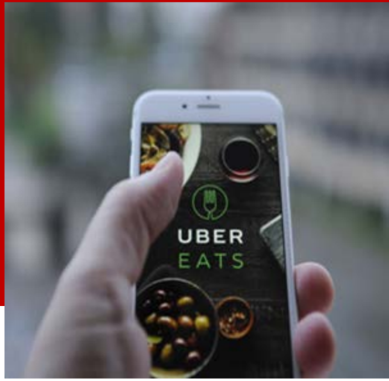
Supply Chain Economics

Fragmenting Food Purchasing Methods - Examples

Pandemic Impact

A survey from Acosta found that 75% of shoppers plan to stick to at least some of their new shopping habits post-COVID

- Farmers Markets
  - A popular way for producers to meet consumers for a common exchange of goods that most are comfortable and familiar with
- Direct-to-Consumer/Home Delivery Model
  - It is estimated that direct to consumer meat purchases grew to more than $4 billion in the U.S. in 2020
  - This capitalizes on convenience and health for the consumer



Last Mile Delivery

Some of the most popular sources used to reach the final consumer include taking advantage of already existing business models like Uber Eats and other food delivery services – the space is evolving very rapidly

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What Scale?

Supply Chain Management Question

What scale of business is required to be successful? In the past, successful food brands required national or international scale.

- Technologies, fragmenting consumer tastes and other issues combine to reduce the scale necessary to create a successful food brand
- Brand awareness plays a huge role in the success of a supply chain.
- Developing a good brand entails…
    - Creating or growing a premium product worthy of a premium price
    - Creating a logo that represents your story
    - Translating your goals and story on to a social media platform to gain brand awareness
    - Developing an user friendly website that helps consumers reach your product
- Key question – Where will creative destruction in supply chains occur in agriculture and food?

Many of the farm-to-fork businesses we met lacked a significant marketing budget and brand awareness, but aim to develop it further while also improving last-mile delivery economics

Data and Statistics

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Local Market Trends

- The number of farmers markets in the United States has grown, from just under 2,000 in 1994 to more than 8,600 markets currently registered in the USDA Farmers Market Directory.
- In that same time period, the number of regional food hubs has increased dramatically as well
- The number of schools that do farm-direct purchasing has grown by more than 5x

Grocery Shopping Trends Online

- Fewer people have been standing in line to pay at the grocery store
- The pandemic hastened the world's pivot to online shopping by three to five years, says David Nolen, vice president of shopper insights at the Hershey Company
- A survey found that 61 percent of consumers are doing more grocery shopping online now than before the Covid-19 pandemic

What is the Economic Impact of Local Foods?

Swenson (2009) aimed to measure the total Economic impact of locally produced products:

- Measured the economic impact of adding 22 fruits and vegetables to the local economy is SE Iowa
- Economic impact was found to add 11.6 jobs and $475,870 in wages
- If local meat and egg production were added to the local economy, there is potential to add 50 to 75 total jobs
- Large scale production is an issue, as 528 acres of produce could produce 25% of the total produce in a region of 100,000 people

In conclusion, the future of local foods depend on

- Sustainable profits for local producers
- Regional market consistency
- Consumer preference for a premium product

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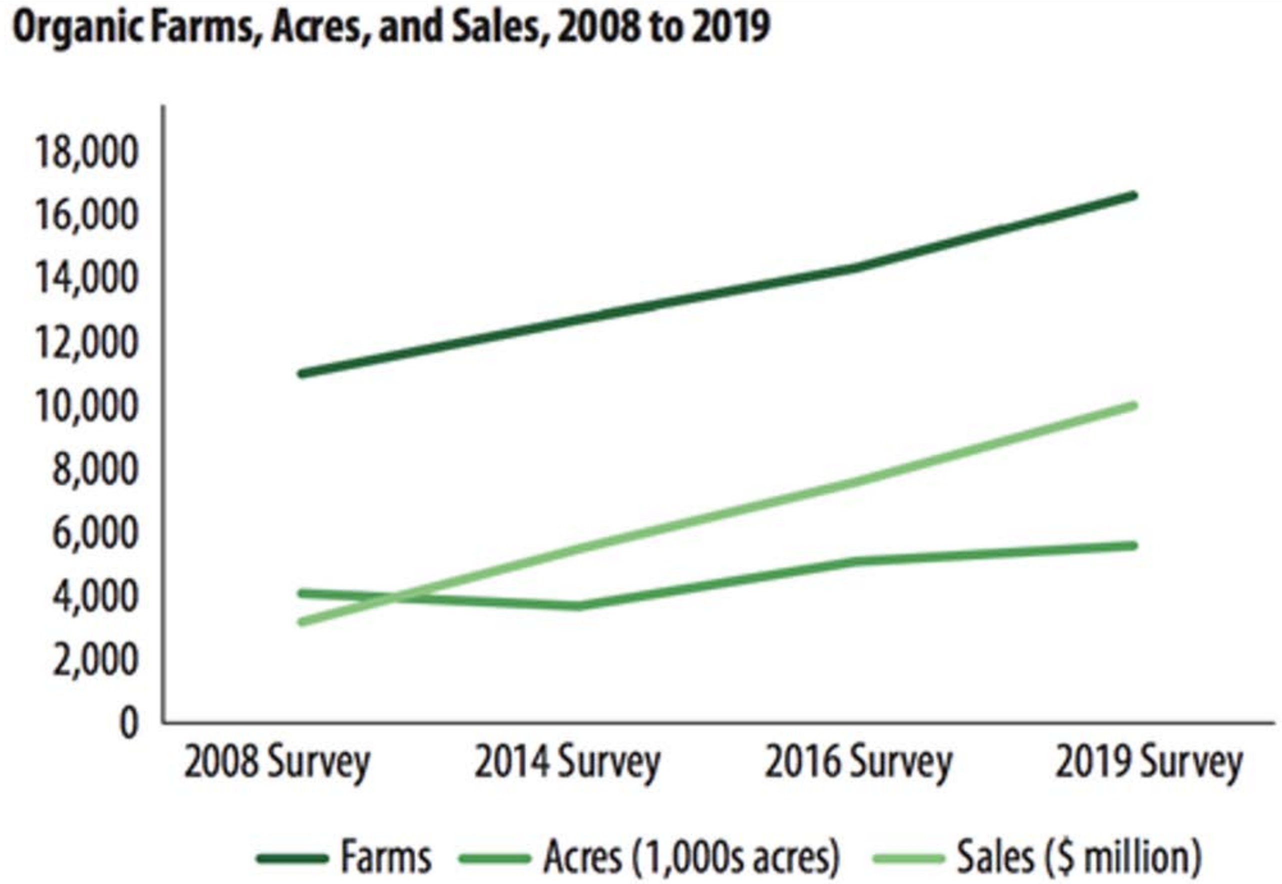
How Has Organic Production Changed?

One method to track farm-to-fork production in the United States is through Organic production, which can be used as a proxy for farm-to-fork products

- According to the 2019 USDA Organic producer survey, U.S organic sales attributed from the farm were $9.9 billion, an increase from $7.6 billion from the 2016 survey. The total consumer organic market was $50.07 in 2019
- Total organic production acres increased as well, with 5.5 million acres in 2019, compared to 5 million in 2016
- California produced nearly 36 percent of the United States organic products in 2018
- Over $2 billion of organic products were products sold directly to consumers or local food hubs

Common themes among organic farms

- Younger than the average United States production row crop farmer
- The majority of farms use regenerative farming or sustainable farming practices
- Some of the most produced organic products include lettuce, strawberries, & grapes



Source: USDA 2019 Organic Survey

Dr. Dermot Hayes, the Ever Changing Market

Dr. Dermot Hayes is an economics professor at Iowa State, he provided some interesting viewpoints on farm-to-fork markets

- We can take a lot of the trends from Europe and apply them to the United States, as Europe is ahead of the U.S. in many ways in regards to local foods
- Estimates of own price elasticity of organic foods range from 1.06 - 3.54, which shows organic products are a luxury good, or an income dependent product (Lin 2008)
- The EU initiated the "Farm-to-Fork" strategy which aims to provide support for local foods, with a goal to make our food system more environmentally friendly and easily accessible

What specifically is Europe doing?

- Building a supply chain that includes transportation and distribution. This will benefit local producers, as it reduces the need for them to vertically integrate their farm
- Legislation to support farm-to-fork practices when negotiating trade deals

Effect of COVID, Cambridge Model

Cambridge has one of the first estimates of the COVID effects of farm to fork consumers. They studied FRESHFARM markets in the D.C. & measured the difference between 2019 and 2020 sales comparisons

- They saw a 49% year over year increase in winter sales, while spring 2019 sales vs. spring 2020 sales were down 20%. Total sales remained relatively stable, due to these two cancelling each other out
- While being careful not to extrapolate this data to the entire country, it is beneficial to see that the demand for locally sourced products in the D.C area increase. There could potentially be the same trend in other places as well
- This is a 2020 study, while a study for 2021 will be more useful to potentially see an overall consumer behavior shift

While it shows a positive effect on these direct-to-consumer markets, there are possible explanations explained on the next slide

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Explanation for Cambridge Model

Possible explanations of why we saw an increase in consumer demand include:

- Supply shortages resulted in consumer demand that is not sustained when regular supply returns
- Social distancing could create short term consumer demand
- Meat and seafood saw big demand increases but many plant and value added (processed foods) vendors saw huge decreases (33%-60%) in sales year over year
- This was in high population area, while rural area may not be able to respond as quickly to the COVID disruptions

- Biggest emphasis in this paper is that we don't know if it is a sustained increase in demand
- A 2021 study in sales with a regular supply side market could show a more accurate picture of any consumer preference shift

Sources

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- O’Hara, J., Woods, T., Dutton, N., & Stavely, N. (2021). COVID-19’s Impact on Farmers Market Sales in the Washington, D.C., Area. *Journal of Agricultural and Applied Economics, 53*(1), 94-109. doi:10.1017/aae.2020.37
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Primary Research

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Primary Research Introduction

Twelve Iowa State University students taking part in the Spring 2021 ECON 495 class conducted primary research on the farm to fork and direct-to-consumer industry, specifically with beef

The survey sought to help capture and understand factors that influence consumer purchasing decisions related to these products and was circulated via social media, email, and personal connections

The survey gathered data from 349 beef consumers between the ages of 25 and 70 nationwide with a geographic emphasis put on those within a 100-mile radius of Dallas/Fort Worth, TX; Des Moines, IA; New York City, NY; or Madison, WI

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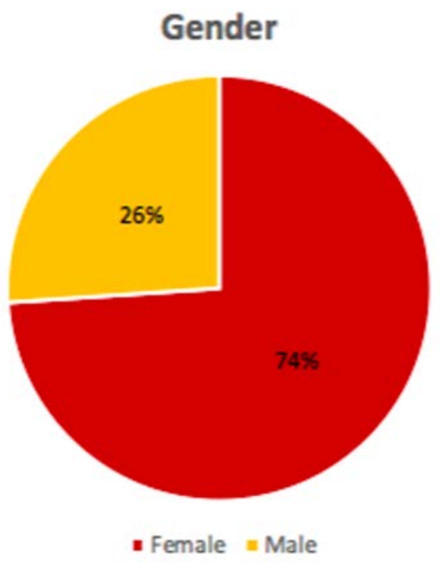
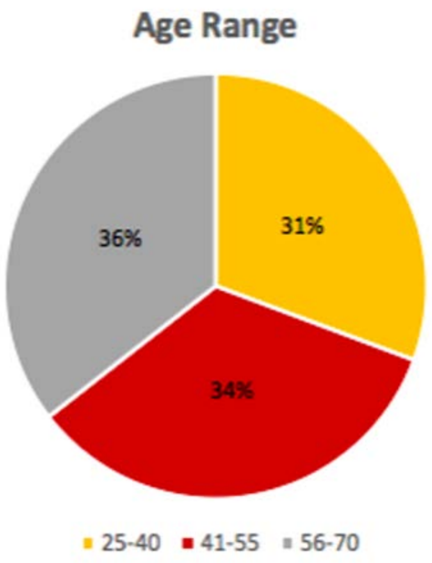
*All survey respondents' households consume beef but do not raise their own

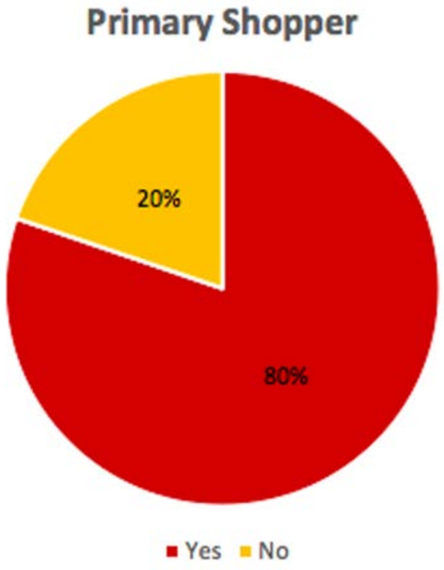
Demographics of the Sample



Almost ¾ of respondents are female

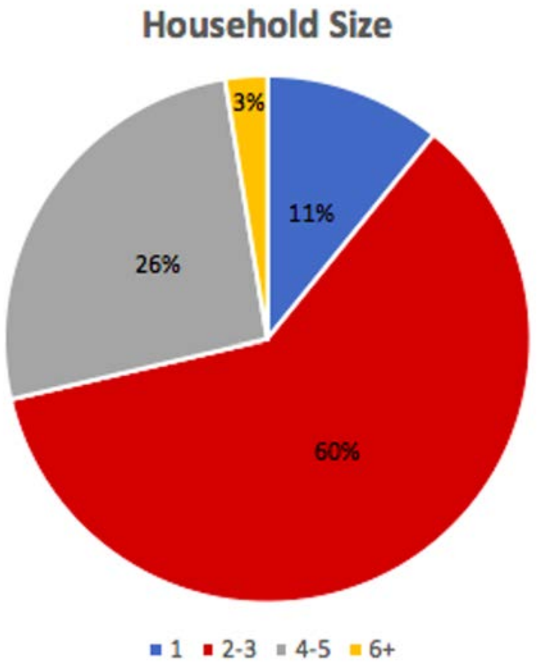


Amount of respondents in each age range are nearly equal

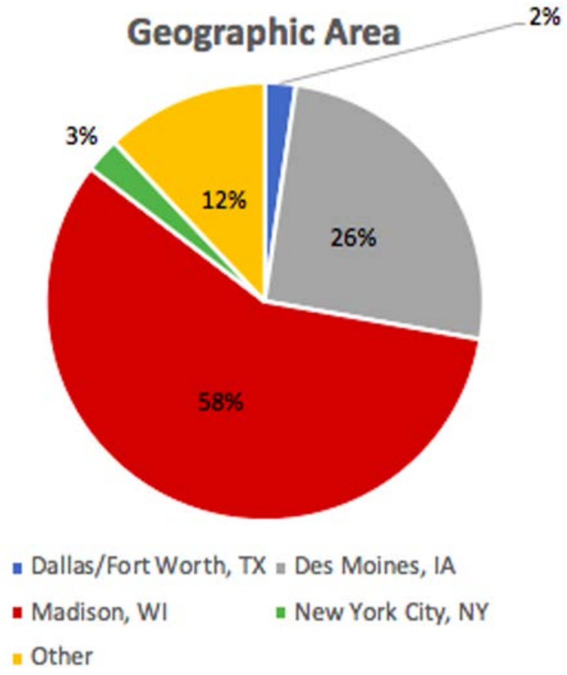


⅘ of respondents are the primary grocery shopper in their household

Demographics of the Sample Continued



⅗ of respondents have 2-3 people in their households and slightly over ¼ have 4-5 people in their household



Over ½ of respondents are within 100 miles of Madison, WI and slightly over ¼ are within 100 miles of Des Moines, IA

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Beef Consumption

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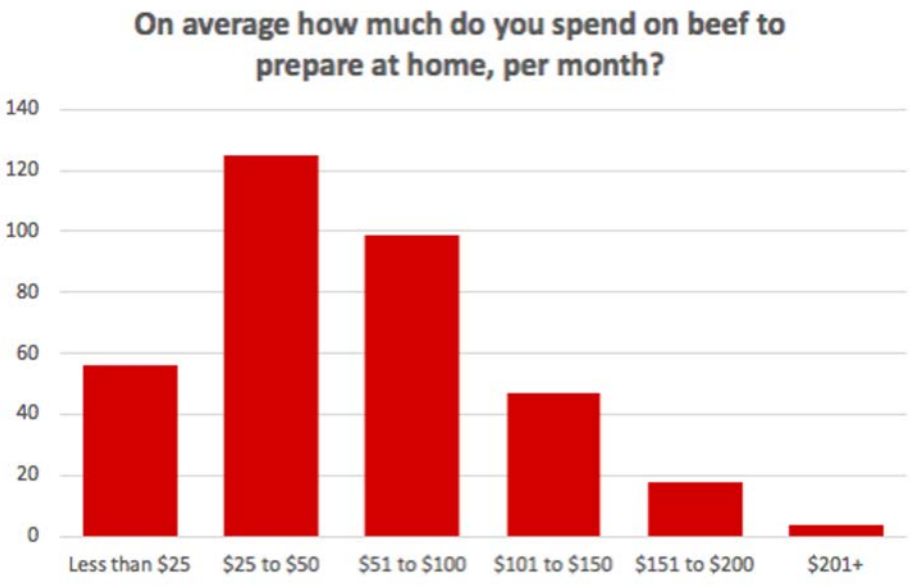
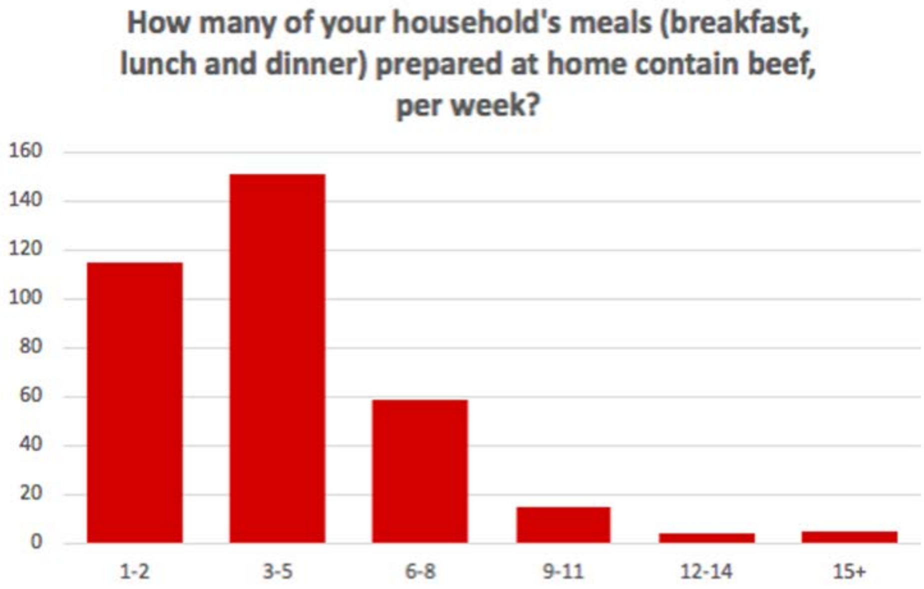
Beef Consumption Spending and Frequency



A majority of respondents spend between $25 to $100 each month on beef.

Most respondents from the New York City area spend over $100 per month on beef.



A majority of respondents utilize beef in 1 to 5 meals per week

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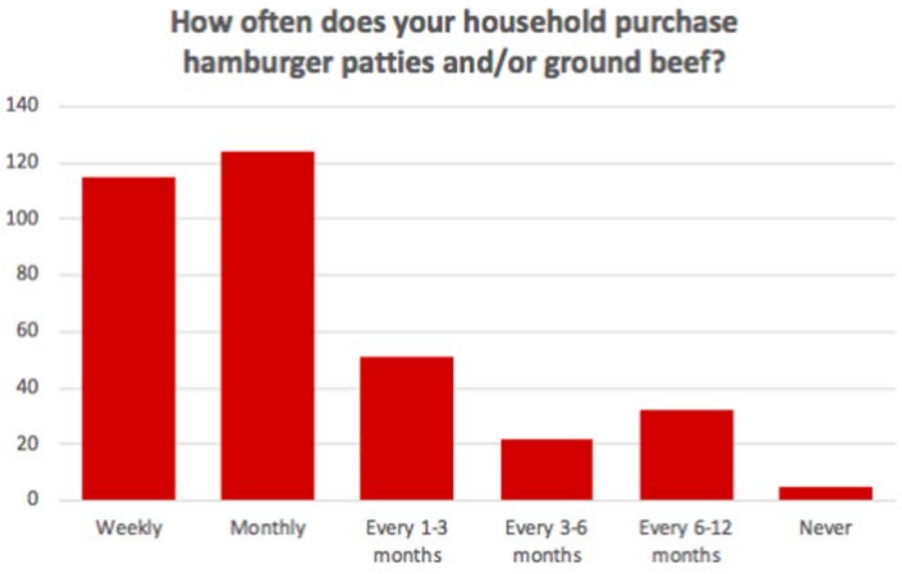
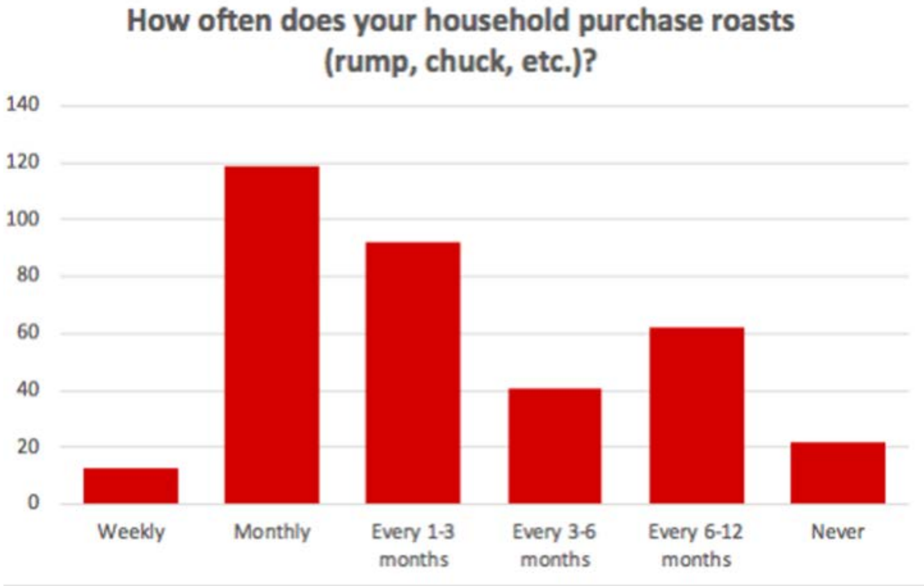
Ground beef is purchased more often than roasts



A majority of respondents purchase hamburger patties and/or ground beef weekly or monthly



Roasts are purchased monthly or every 1-3 months most frequently

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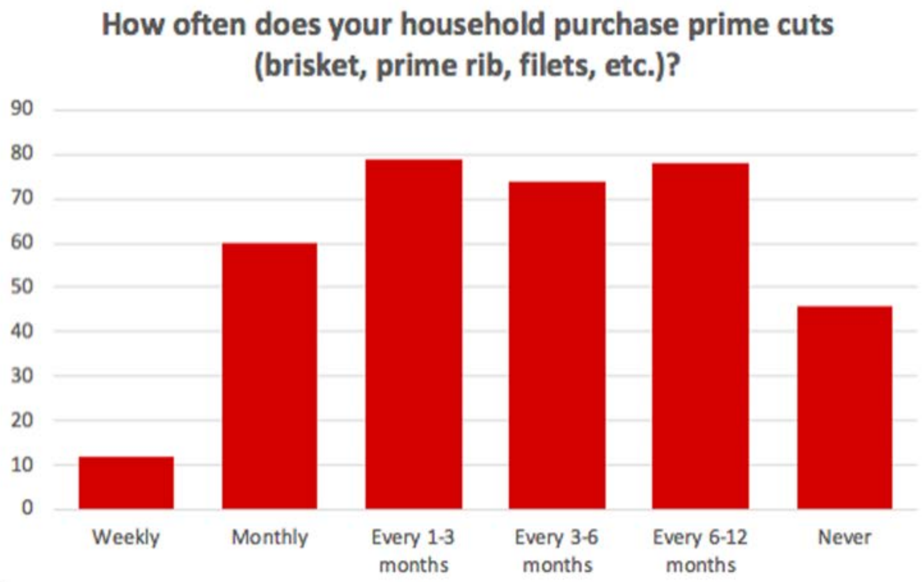
Steaks and roasts are similar, prime cuts' frequency is spread

Steaks' purchasing frequency is similar to that of roasts - monthly and every 1-3 months



Prime cuts are purchased less frequently than other cuts of beef and is pretty equally spread in frequency

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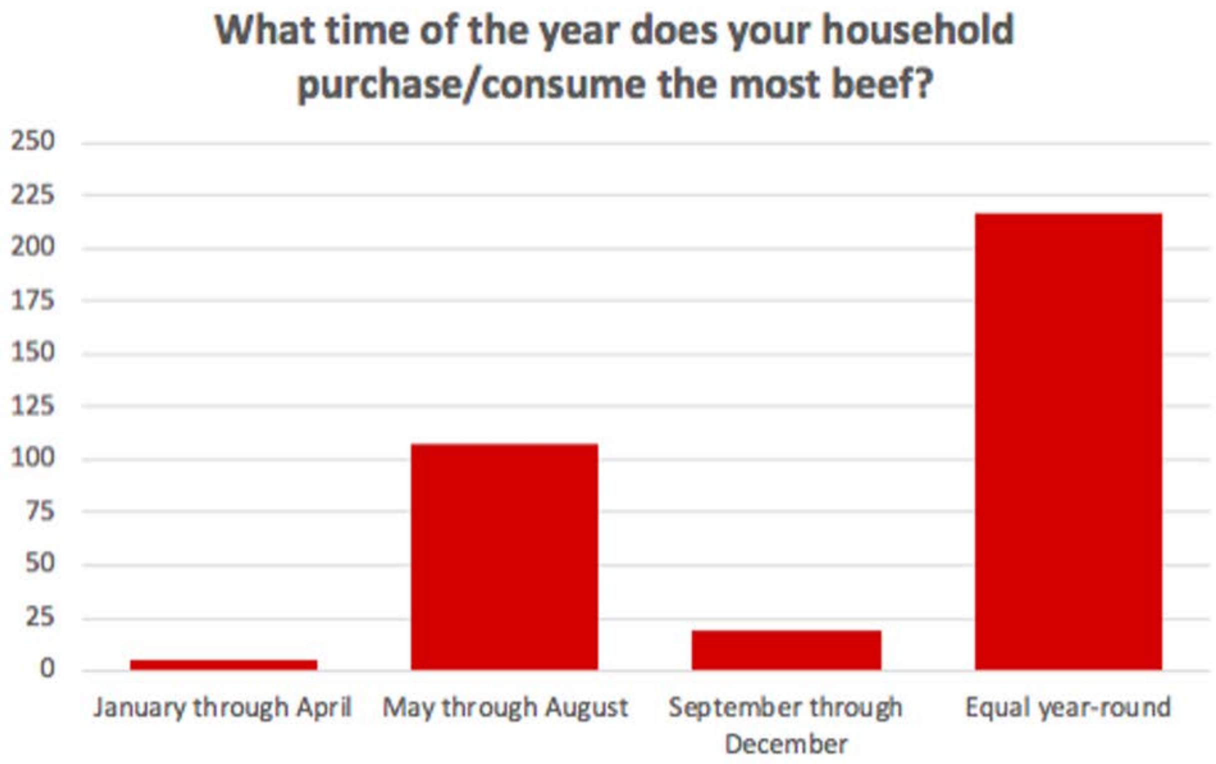
Beef consumption is mostly equal year-round



A majority of respondents consume beef equally year-round

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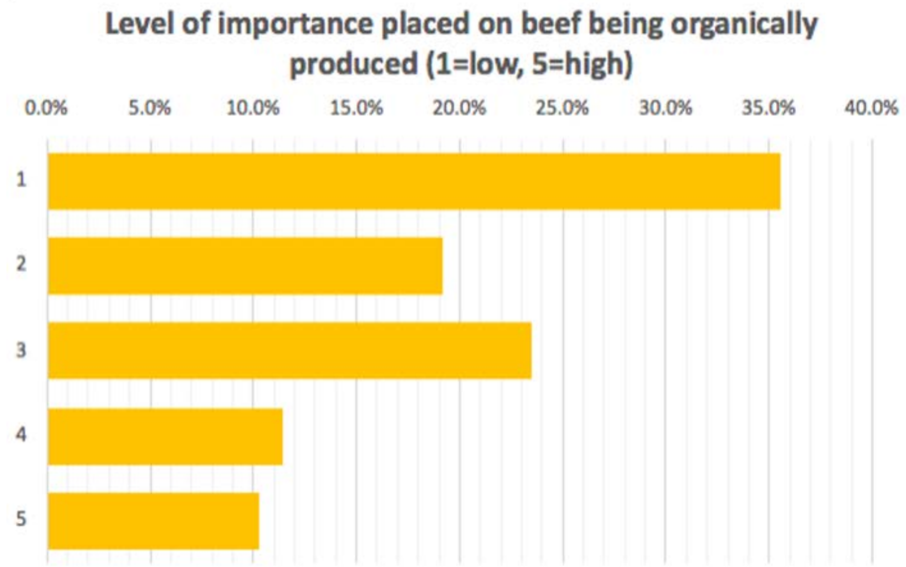
Level of Importance

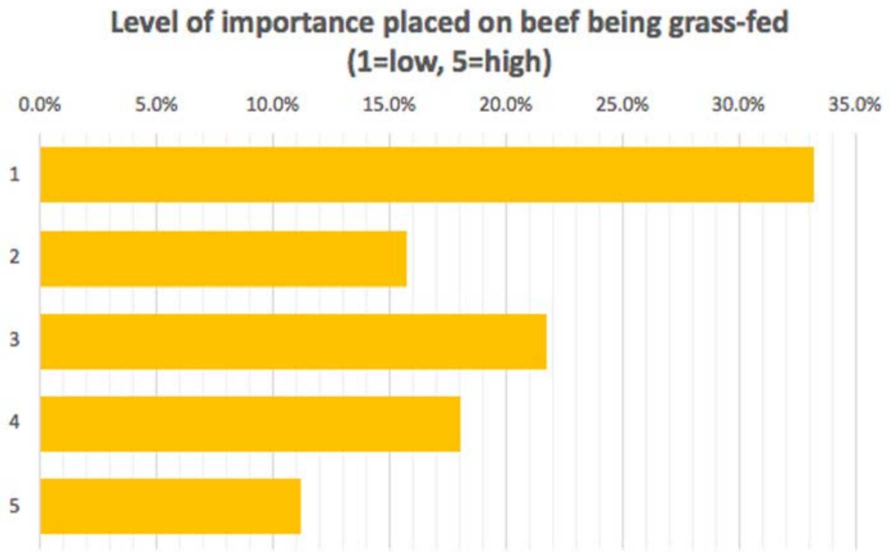
Attributes and Purchasing Format

Level of Importance (Attributes) - Organic and Grass-fed



Most of the total respondents had a low level of importance placed on beef being organically produced.

However, the respondents from New York City are placed a high level of importance on beef being organically produced.



Beef being grass-fed is somewhat important to most of the total respondents.

The New York City respondents placed a high level of importance on beef being grass-fed.

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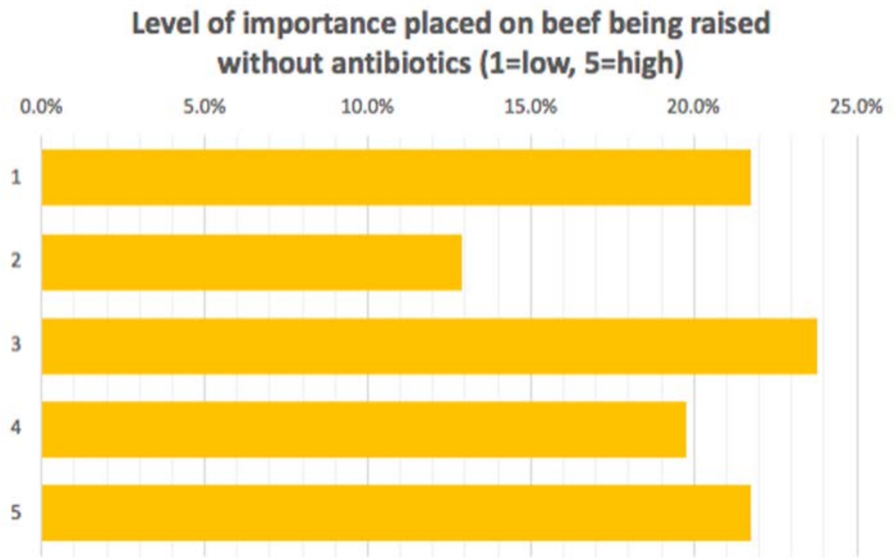
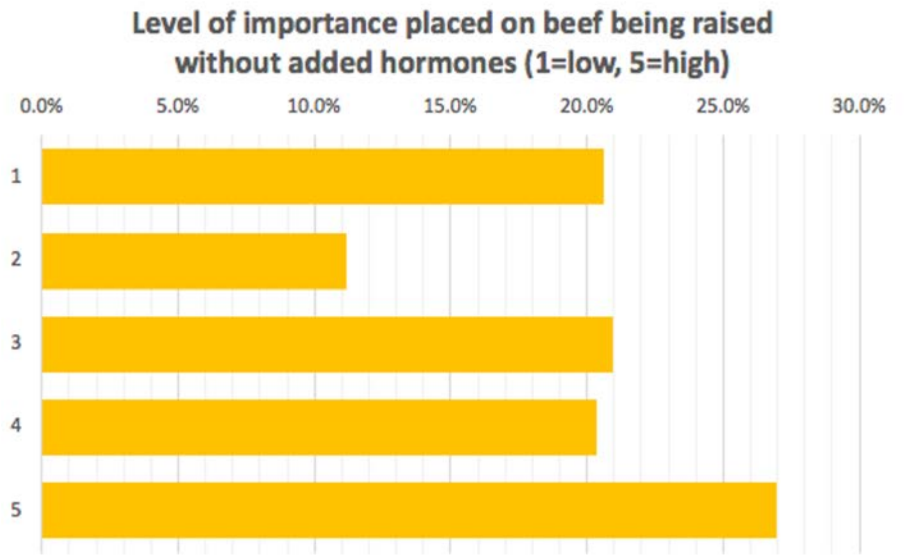
Level of Importance - Attributes 2





Beef being raised without antibiotics was important to most respondents.

Beef being raised without antibiotics was very important to the respondents from the New York City area.

Most respondents prefer beef to be raised without added hormones.

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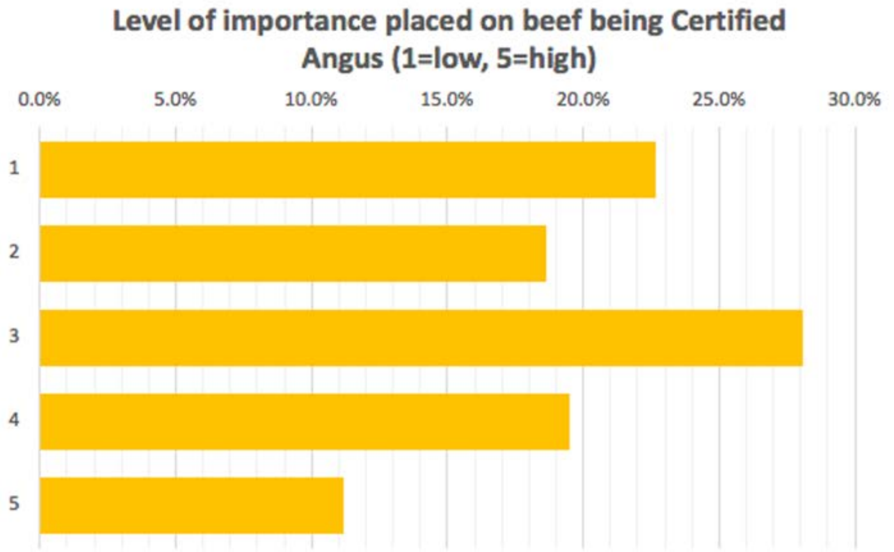
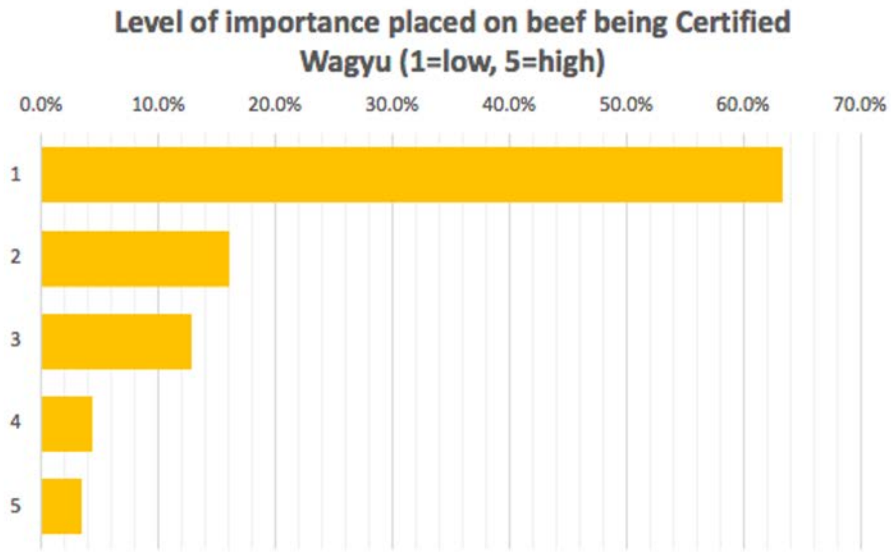
Level of Importance - Attributes 3





Beef being Certified Angus is somewhat important to most of the respondents.

However, beef being Certified Angus was very important to the respondents from the Dallas/Fort Worth area.

A large majority of the total respondents do not prefer beef to be Certified Wagyu.

Respondents from the New York City area placed a higher level of importance on beef being Certified Wagyu.

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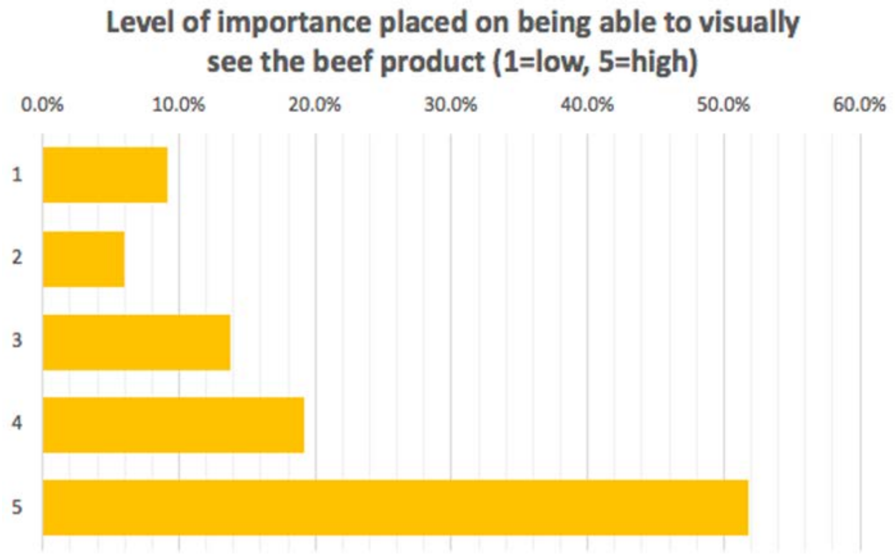
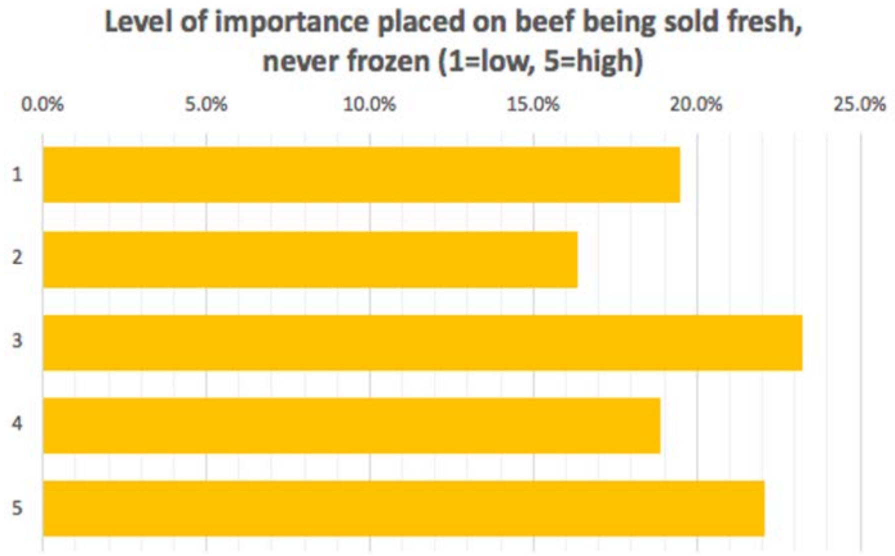
Level of Importance - Attributes 4





Respondents would prefer to visibly see the beef product before purchasing the product.

Beef being sold fresh, never frozen is somewhat important to most of the respondents.

However, the respondents from the New York City area placed a very high level of importance on beef being sold fresh.

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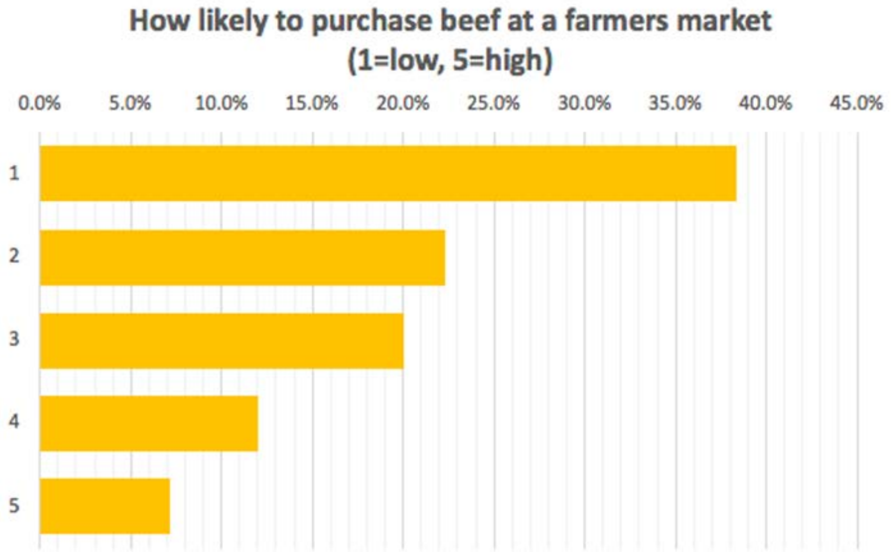
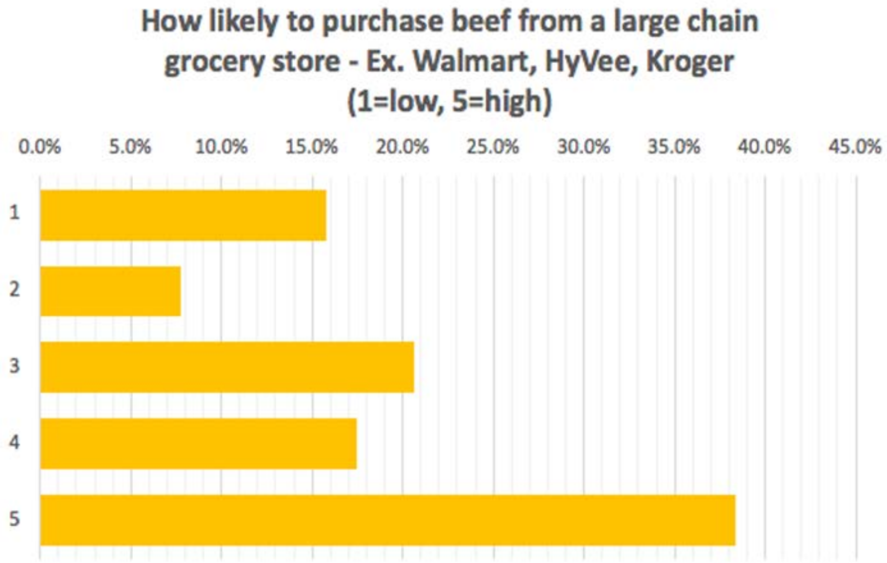
Level of Importance - Purchasing Format 1



Most of the respondents were not willing to buy beef from a farmers market.



A large majority of respondents were somewhat or very willing to buy beef from a large chain grocery store.

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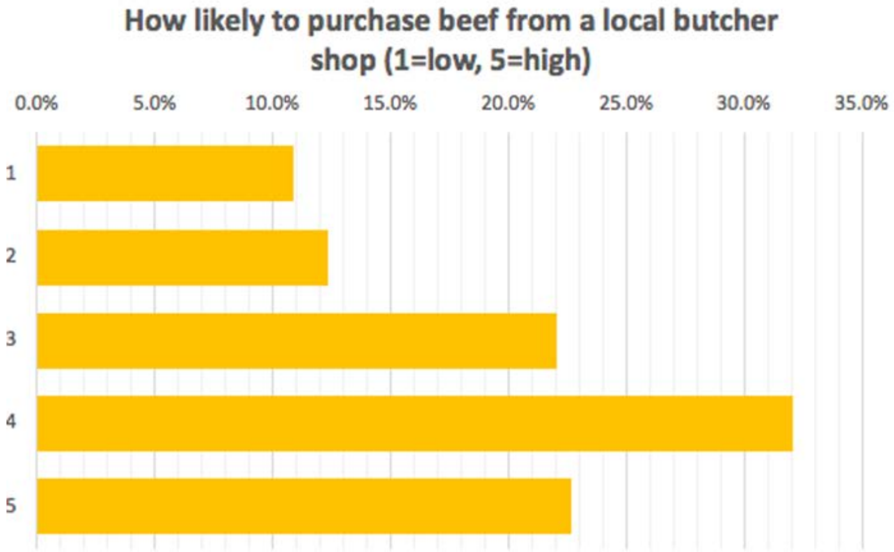
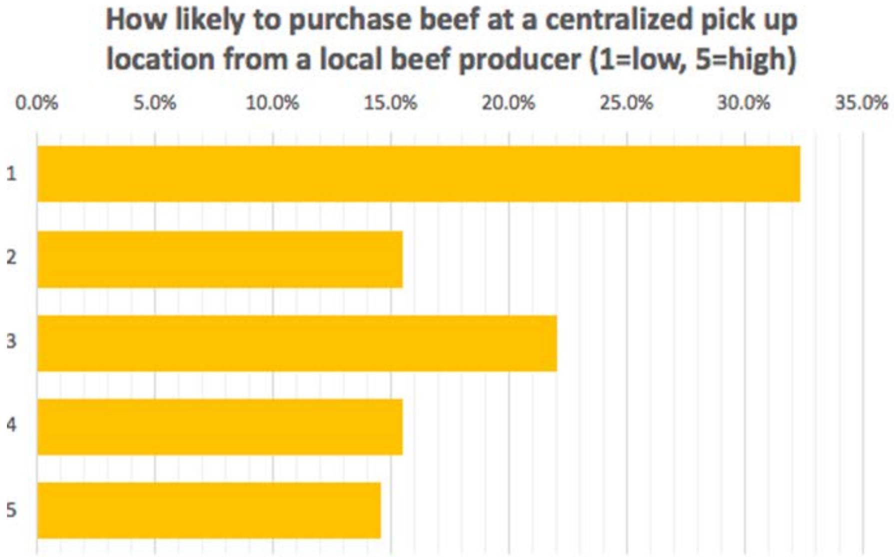
Level of Importance - Purchasing Format 2





Respondents are very likely to purchase from a local butcher shop

Respondents were somewhat likely to purchase beef at a centralized pick up location from a local beef producer.

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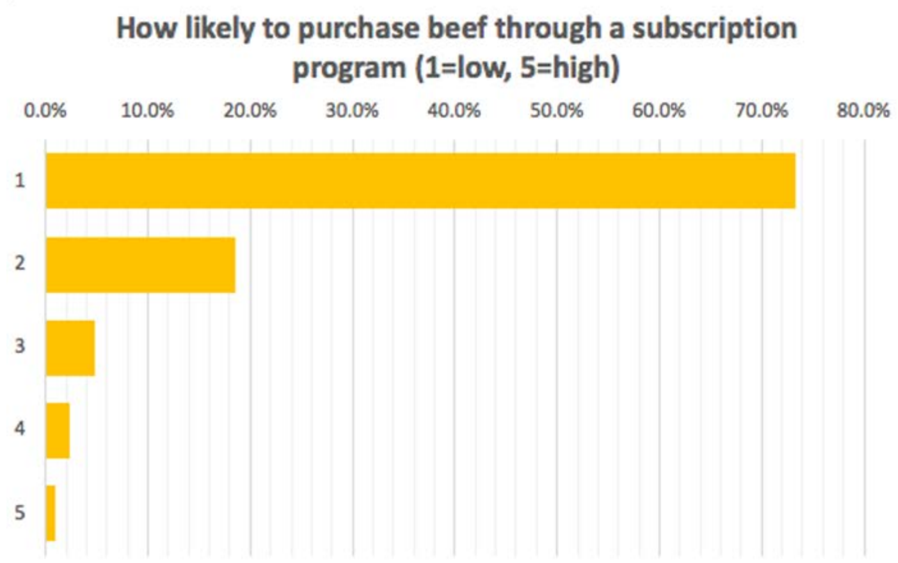
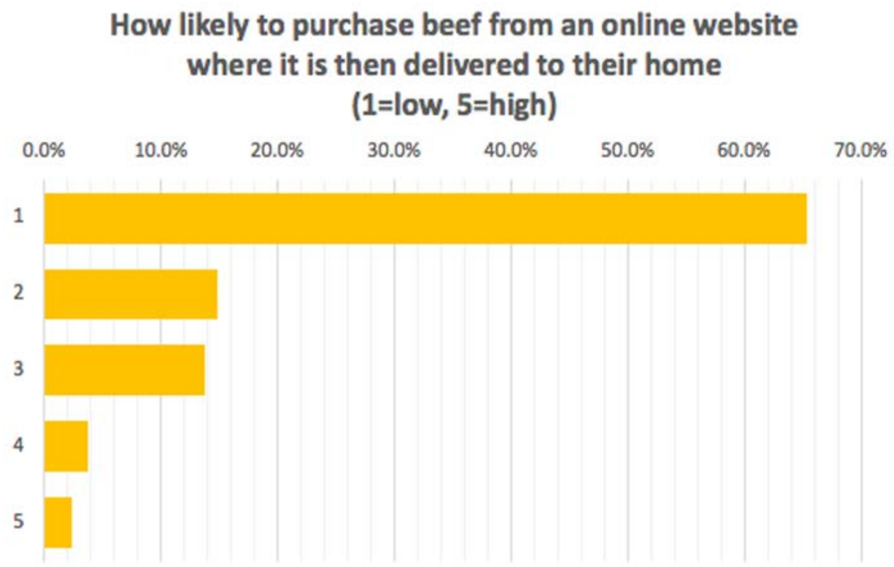
Level of Importance - Purchasing Format 3





A subscription program was not a desired form for purchasing beef.

Most respondents did not want to purchase beef online and then have the beef delivered to their home.

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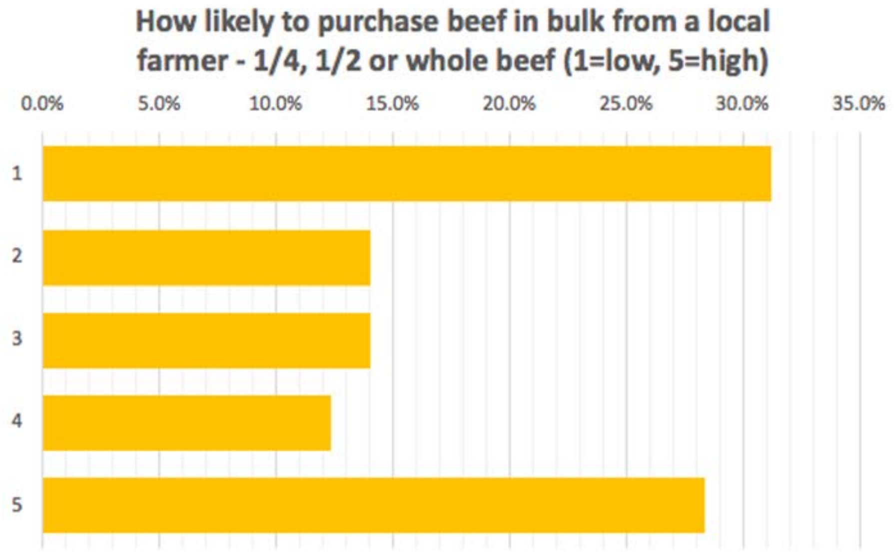
Level of Importance - Purchasing Format 4



Respondents were either very willing to buy beef in bulk from a local farmer or the respondents were not very willing to buy beef in bulk from a local farmer.

Most of the New York City respondents were not very willing to buy beef in bulk.

Most of the respondents from the Des Moines and Madison areas were very willing to buy beef in bulk.

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Likeliness of purchasing formats

	1	2	3	4	5
Large chain grocery store	15.8%	7.7%	20.6%	17.5%	38.4%
Online website then delivered to their home	65.3%	14.9%	13.8%	3.7%	2.3%
Centralized pickup location from a local beef producer	32.4%	15.5%	22.1%	15.5%	14.6%
Farmers Market	38.4%	22.3%	20.1%	12.0%	7.2%
In bulk from a local farmer	31.2%	14.0%	14.0%	12.3%	28.4%
Local butcher shop	10.9%	12.3%	22.1%	32.1%	22.6%
Subscription program	73.4%	18.6%	4.9%	2.3%	0.9%

	1+2	3	4+5
Large chain grocery store	23.5%	20.6%	55.9%
Online website then delivered to their home	80.2%	13.8%	6.0%
Centralized pickup location from a local beef producer	47.9%	22.1%	30.1%
Farmers Market	60.7%	20.1%	19.2%
In bulk from a local farmer	45.3%	14.0%	40.7%
Local butcher shop	23.2%	22.1%	54.7%
Subscription program	92.0%	4.9%	3.2%

- Consumers are **least likely** to purchase beef through a subscription program or online where it is then delivered to their home
- Consumers are **most likely** to purchase beef at a large chain grocery store
- The amount of consumers who are the **highest and least likely** to purchase in bulk from a local farmers are similar

Purchasing format ranking (most to least likely)

1. Large chain grocery store
2. Local butcher shop
3. In bulk from local farmer
4. Centralized pickup from local producer
5. Farmers Market
6. Online website then delivered to their home
7. Subscription program

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Scenarios

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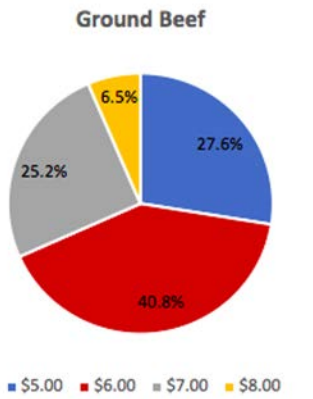
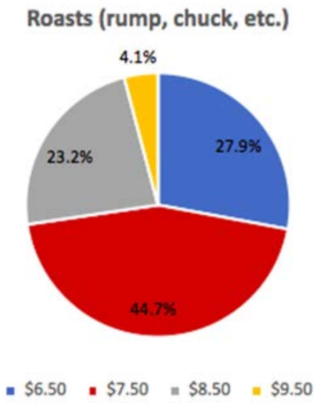
Scenario 1

- A family raises beef on their farm.
- The cattle are **grass-fed then grain-finished**, receiving **no antibiotics or hormones**.
- The beef can be purchased frozen at your **local farmers market.**

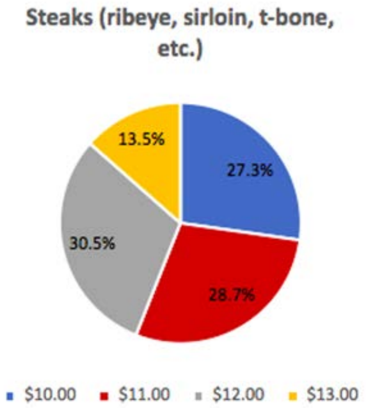
Price (per pound) respondents would be willing to pay for...



Grocery store reference price is $5.00/lb



Grocery store reference price is $6.50/lb



Grocery store reference price is $10.00/lb

- Similar ratios of respondents would only be willing to pay the grocery store reference price for all cuts with these attributes
- Respondents are more likely to roasts are $1.00 more than reference price than ground beef
- Steaks are the most likely to sell at a higher premium for these attributes

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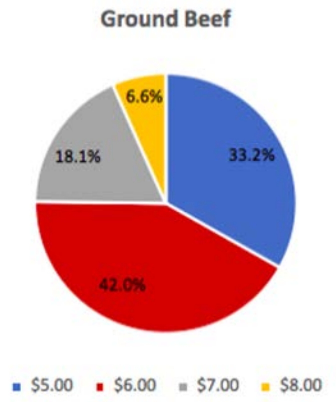
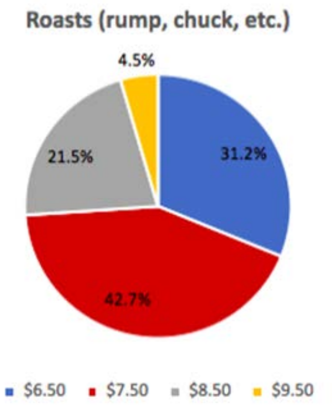
Scenario 2

- A family raises beef on their farm.
- The cattle are **organically raised**.
- The beef can be purchased frozen at your **local farmers market**.

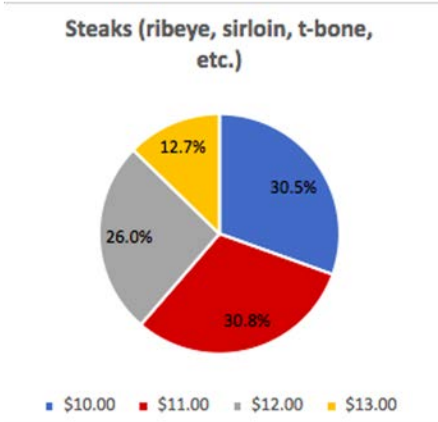
Price (per pound) respondents would be willing to pay for...



Grocery store reference price is $5.00/lb



Grocery store reference price is $6.50/lb



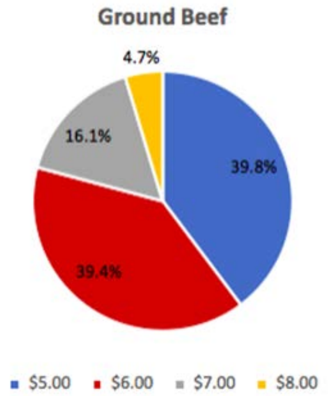
Grocery store reference price is $10.00/lb

- Similar ratios of respondents would only be willing to pay the grocery store reference price for all cuts with these attributes
- More respondents are willing to pay a premium price of $3.00/lb over the reference price for steaks than the other cuts

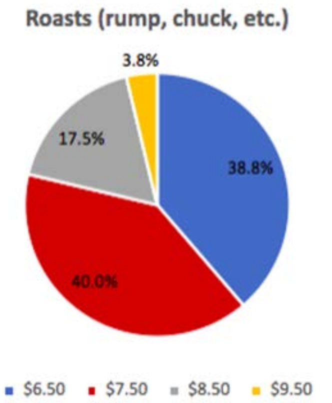
Scenario 3

- A family raises beef on their farm.
- The cattle are **grass-fed then grain-finished**, receiving **no antibiotics or hormones**.
- The beef can be **purchased online** and picked up frozen from a **centralized location**.

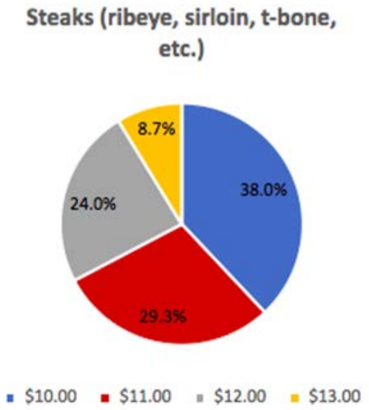
Price (per pound) respondents would be willing to pay for...



Grocery store reference price is $5.00/lb



Grocery store reference price is $6.50/lb



Grocery store reference price is $10.00/lb

- Similar ratios of respondents would only be willing to pay the grocery store reference price for all cuts with these attributes
- Respondents are more willing to pay a premium of $2.00/lb or $3.00/lb for steaks with these attributes than for the other cuts

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Comparing Scenarios

Scenario 1:

- The cattle are **grass-fed then grain-finished**, receiving **no antibiotics or hormones**.
- The beef can be purchased frozen at your **local farmers market**.

Scenario 2:

- The cattle are **organically raised**.
- The beef can be purchased frozen at your **local farmers market**.

Scenario 3:

- The cattle are **grass-fed then grain-finished**, receiving **no antibiotics or hormones**.
- The beef can be **purchased online** and picked up frozen from a **centralized location**.

Ground Beef				
Scenario	$ 5.00	$ 6.00	$ 7.00	$ 8.00
1	27.6%	40.8%	25.2%	6.5%
2	33.2%	42.0%	18.1%	6.6%
3	39.8%	39.4%	16.1%	4.7%

Grocery store reference price is $5.00/lb

Roasts				
Scenario	$ 6.50	$ 7.50	$ 8.50	$ 9.50
1	27.9%	44.7%	23.2%	4.1%
2	31.2%	42.7%	21.5%	4.5%
3	38.8%	40.0%	17.5%	3.8%

Grocery store reference price is $6.50/lb

Steaks				
Scenario	$10.00	$11.00	$12.00	$13.00
1	27.3%	28.7%	30.5%	13.5%
2	30.5%	30.8%	26.0%	12.7%
3	38.0%	29.3%	24.0%	8.7%

Grocery store reference price is $10.00/lb

- Respondents are **least likely** to purchase all beef cuts at a premium with the attributes of Scenario 3.
- Scenarios 1 and 2 saw similar paying willingenesses for all beef cuts, except that respondents are **more likely** to purchase ground beef at a $2.00/lb premium with the attributes of Scenario 1.
- Respondents are **more likely** to purchase steak at a $3.00/lb premium with any of these scenarios' attributes.

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Primary Research Conclusion

Overall Primary Research Learnings

- Consumers buy beef equally year round and spend an average of $25-$100 per month on beef
- Hamburger patties and ground beef are purchased weekly or monthly while other cuts are purchased less frequently
- Consumers prefer to buy beef from a local butcher shop or a large chain grocery store.
- Being able to see the beef product before it is purchased is of significant importance to consumers
- Consumers would prefer beef to be raised without antibiotics or added hormones.
- New York City beef consumers are overall are more willing to spend larger amounts of money on beef
- Level of Importance of attributes mimic how consumers reacted for pricing in each scenario:
  - Beef being raised organically is of less importance to them and they will thus pay less of a premium for that attribute
  - Purchasing formats of farmers markets and purchasing online then picking up frozen from a centralized location are of similar importance to consumers, which their willingness to pay premiums for show by being similar across most cuts

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Survey Limitations

- Does not capture the “why” behind the respondents’ purchasing decisions
- Did not allow respondents to select “would not purchase” for any of the scenarios
- Sample is heaviely weighted toward Midwestern consumers

What Will Farm-to-Fork Look Like in 2030?

We will see an increase in interest in buying local, from small Farm-To-Fork businesses

Growing interest in traceability & healthy eating paired with the effects of COVID-19 will make a shorter supply chain more enticing to consumers

Healthy eating and traceability

- The fewer stops food has to make from Farm-to-Fork, the better.
- Less travel means more local foods
- People feel better eating food grown close to their home by people that they know or can connect with

- COVID-19
  - Proved that our current food supply chain can be very volatile.
  - Encouraged "buying local" which may have encouraged people to try supporting local farmers and to try new products

Ellen Cook
Agricultural Communications

A local food supply is, at best, a supplement for the global food demand, but it allows for greater flexibility for the food supply and increased traceability for consumers

Price will remain as the dominant food purchasing driver

Looking forward to 2030, the main drivers of consumer food purchasing decisions will be price, health, and convenience, respectively

- Price - Without a price consumers can/are willing to pay, food products won't sell no matter how healthy or convenient
- Health - A subset of quality, consumers want to visually see their products, know where they came from, and how they are produced
- Convenience - Consumers are searching for affordable, quality, and local foods but also options that won't add more tasks to their day

Brianna Gorham
Agricultural Business, Economics, and International Agriculture

"Consumers want to help the local economy and see where their food comes from, but they're not going flock to it because price is the main purchase driver in the long run for the majority of consumers"

- John Maxwell, Founder/Owner, Cinnamon Ridge Dairy Farm

Iowa State University

Regenerative farming will regenerate rural economies

Regenerative farming practices require more effort from the farm to the fork, creating more demand for locally sourced inputs

Caleb Clemon
Agricultural Business

- Bring jobs and businesses to rural communities (increase money spent locally)
- Create a healthier community (produce raised regeneratively is higher in nutrient density)
- Improvements in mental health (farming holistically shown to reduce depression)
- Increase in farm income diversity (income diversity in product diversity)
- Rural and urban water improvement (Regenerative practices such as the five soil principles will drastically reduce nutrients pollution in our water)

"You, as a food buyer, have the distinct privilege of proactively participating in shaping the world your children will inherit" - Joel Salatin

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Five Principles of Soil Health

The five principles are designed to create a properly functioning ecosystem that mimics nature as closely as possible

1) **Soil Armor** - Residue on the surface provides: erosion prevention, soil temp. Regulation, increased OM and better water management
2) **Minimal soil disturbance-** Increases soil biological activity which increases soil aggregation.
3) **Diversity-** Plant diversity leads to new root structures feeding different microbial communities.
4) **Continuous live plants/roots-** increase water utilization & transpiration harnessing more carbon
5) **Livestock Integration-** Plants, soil, and animals evolved together. Livestock convert high-carbon material crop material to low carbon materials that feed the soil food web

"If you want to make small changes, change the way you do things. If you want to make big changes, change the way you see things." - Don Campbell

Covid-19 will be felt through changing food buying habits into the future

In March 20’, the USDA’s monthly sales of food figures showed that **money spent on food away from home** (FAFH) **took a 20% decline**, while sales of **food at home (FAH) increased 26%**

- Covid-19 has altered how consumers purchase food and hard good Consumables
  - Online purchasing/ordering has increased due to less travel
  - Less travel to and from grocery stores/restaurants etc.
  - Consumer more in tune to where the products come from/are produced
  - Higher demand for immediate, fresh and healthy products
- Food buying practices outlook because of Covid-19
  - Immediate fulfillment, and instantaneous delivery
  - More localized food products, consumers care more
  - Variety will be less, brands are narrowing down, focusing on quality
  - Frozen food demand is increasing, people are stockpiling product

Grace Link
Agricultural Communications

“Point of sale is no longer in front of the dairy case at the store, it’s in front of their computer,” Arnot added. “Traditional marketing dollars need to change. People make these buying decisions from a whole new place now.”

Iowa State University

Farm-to-Fork models in restaurants will gain customer loyalty

- Being transparent about menu item ingredients gains trust
- People are interested in geographic sources
- Interest also lies in the producers themselves (i.e. who they are, what they do, how they do it)
- Customers excited to support local businesses, and to eat fresh meat and produce
- Eating in-season provides unique dining experiences
- Human interest stories will strengthen relationships between consumers and their favorite restaurants

Amber Friedrichsen
Agricultural Communications

“Shaped by our craftsmen's approach to cooking, the culture of our city, the creativity of our staff and the products from our amazing farmers” - The Odd Duck, Austin, Texas

Iowa State University

Local food distribution will become corporate

- The future of local food comes down to the ability to provide consumers widespread access

- By 2030, a large corporation (such as Amazon or Uber) will figure out the complex Farm-to-Fork distribution problem
- How local foods are delivered to the consumer through what is known as,"The Last Mile Delivery" will play an important role in the future of how local foods are distributed
- Amazon and the future of farm-to-fork
  - In 2017, Amazon purchased Whole Foods & entered them into the grocery market
  - Amazon Fresh has the potential to move into local food

Joe Popp
Agricultural Business

"To remain viable 10 years out or to be a compelling acquisition target for the larger players, regional foodservice distributors have to accommodate the new foodservice landscape"

\- Charles Fallon, President at LIDD

Iowa State University

The Specialist Entrepreneur

The Specialist Entrepreneur has a unique skill set and interest for their specific Farm-to-Fork business

Kaylee Van Maanen
Agricultural Business

- The entrepreneurs that operate Farm-to-Fork businesses are generally specialized
- However, the entrepreneurs may lack certain skills needed to grow and promote their Farm-to-Fork businesses. For example, an entrepreneur may not have the skills necessary to market their products
- Some Farm-to-Fork entrepreneurs may not have a background in the agriculture industry, but they have unique business skills needed to start a Farm-to-Fork business
- The entrepreneurs that start Farm-to-Fork businesses will either develop the skills they are lacking or the entrepreneurs will hire a specialist to assist them

"The entrepreneur is essentially a visualizer and actualizer. He can visualize something, and when he visualizes it he sees exactly how to make it happen." -- *Robert L. Schwartz*

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The diversity of food choices will increase when consumers become more aware of farm to fork options

By 2030, we predict a shift from the dominance that the grocery stores hold to giving consumers more transparent, convenient options

Alyssa Scholz
Ag Communications

- I predict that direct farm to consumer food purchases will be a growing sector giving the American more choices on where to source their food
- Consumers will place a higher priority on knowing where their food comes from
- Farms will become more equipped to brand their story and communicate it to consumers
- Consumers will have a more transparent view of how their food is produced
- This transparency will give them access to all different types of choices of how their food is grown or raised
- With information on how food is raised at their fingertips, consumers will be able to make more informed choices

Brands are built around stories. And stories of identity – who we are, where we've come from – are the most effective stories of all. This storytelling is a powerful way to bring brands to life." - Seth Godin

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Technology in Farm-to-Fork

Technology will have a major role in Farm-to-Fork businesses in 2030

- Production and reducing labor
  - Automated farming of field crops (vegetables)
  - Regulation of greenhouse environments
  - Automated feeding to animals

- Marketing and distribution
  - Producers sharing their story and product on social media
  - Selling to consumers in an online marketplace
  - Reaching more places/consumers due to online options

Kody Koberg
Agricultural Business, Accounting, and International Agriculture

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Risks of Farm-to-Fork Models

The top farm-to-fork model risks vary by the individual sector but below are common factors to consider

- **Supply Chain** → expensive, complex
- **Reliable Labor** → scarce, unpredictable
- **Food Safety & Sanitation** → penalty for violations
- **Low Cash Flow** → decrease in returns
- **Reputation** → time consuming to build, easily tarnished

Danielle Youngblut
Ag Business + Advertising

"Lack of a holistic view and understanding of potential risks can lead to food safety and quality failures, resulting in damage to a company's brand reputation and bottom line"

- Tom McGinnis, Financial Advisory partner at Deloitte & Touche LLP

Iowa State University

New Technologies Allow for Relationship Development Between Consumers and Producers

As technology allows for more openness and transparency, this provides an opportunity for the relationship between consumers and producers to become more localized and personalized

- New forms of advertising allows farmers to have access to easier, more readily available methods of marketing their products
- Greater visibility from farmers allows consumers to learn more about local farming practices
- As consumers become more educated about farming, they will be able to make informed decisions for themselves on where they feel comfortable receiving their produce from
- Consumer trends will be more readily available to farmers which will allow them to better predict demand for their different products

Javier Payne
Agricultural Business

End of Report

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