State of Grass Fed Industry

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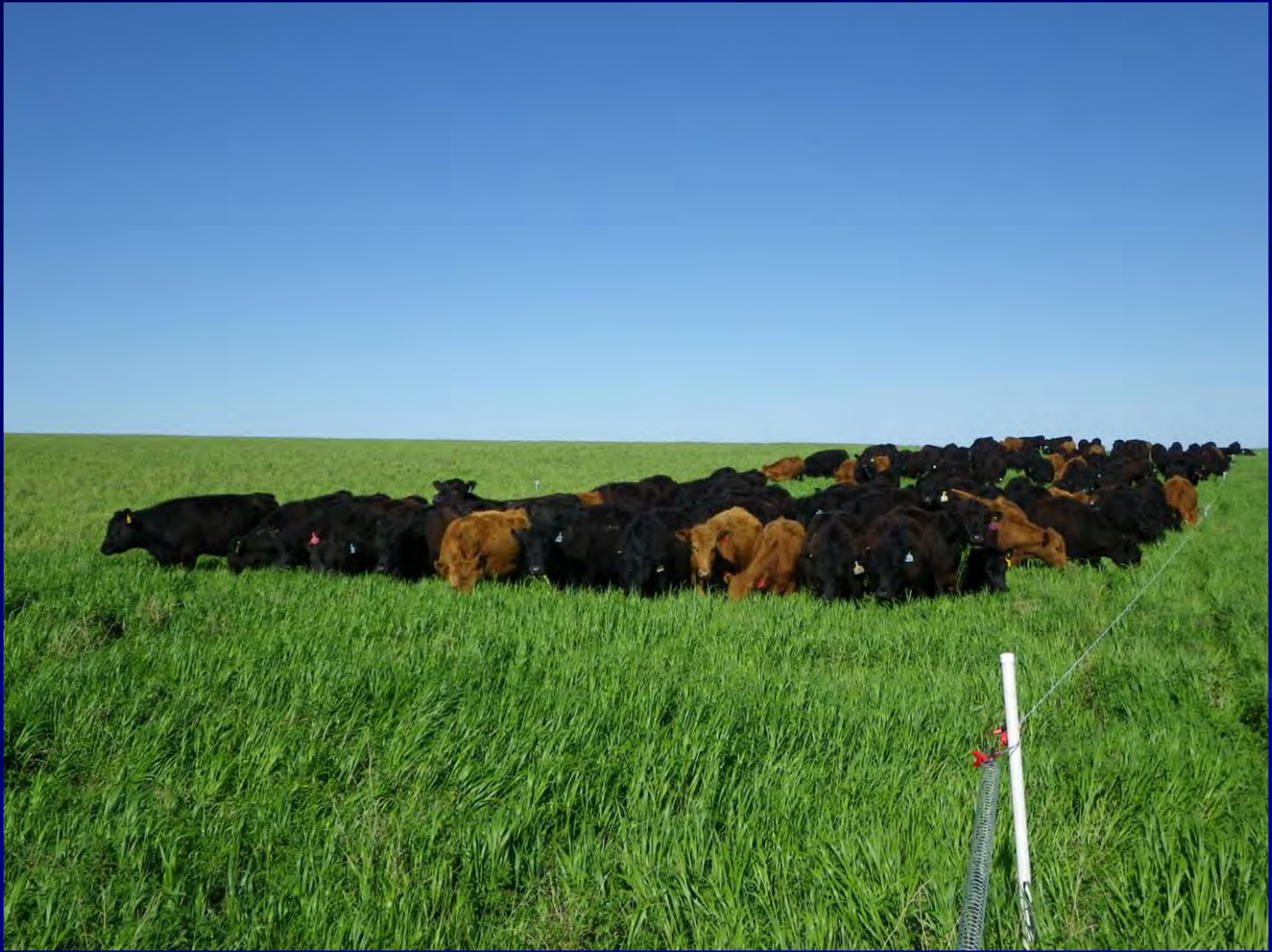
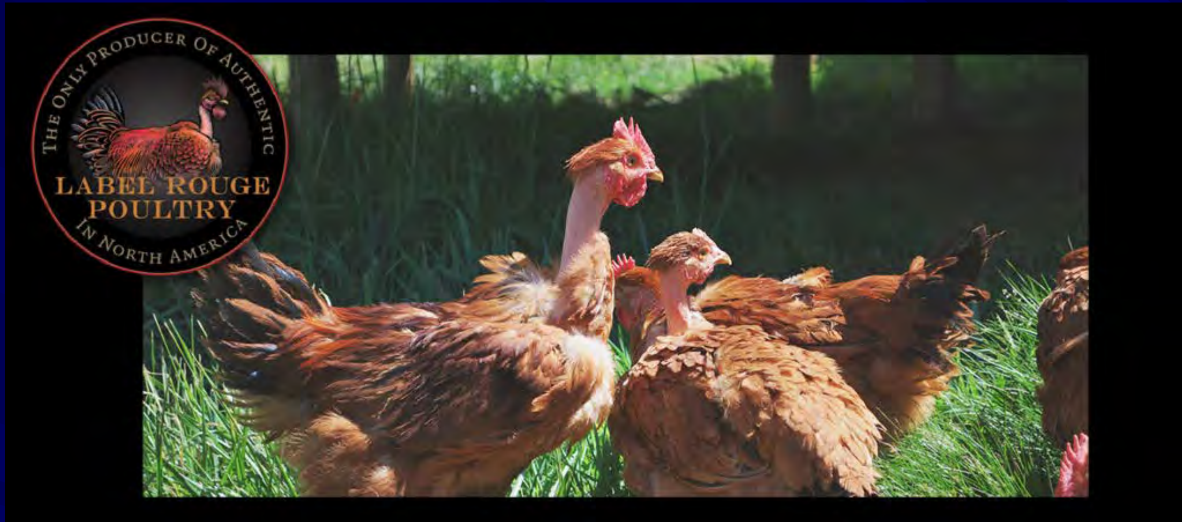
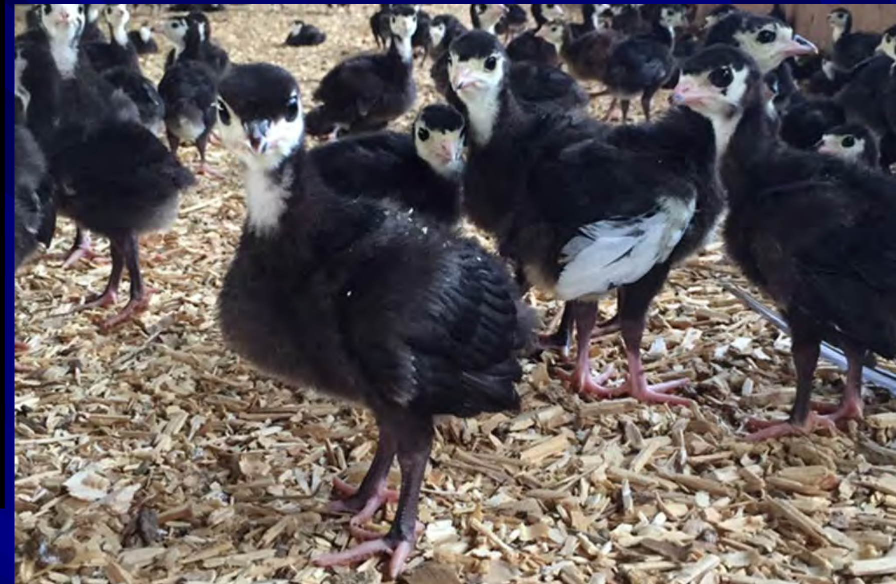
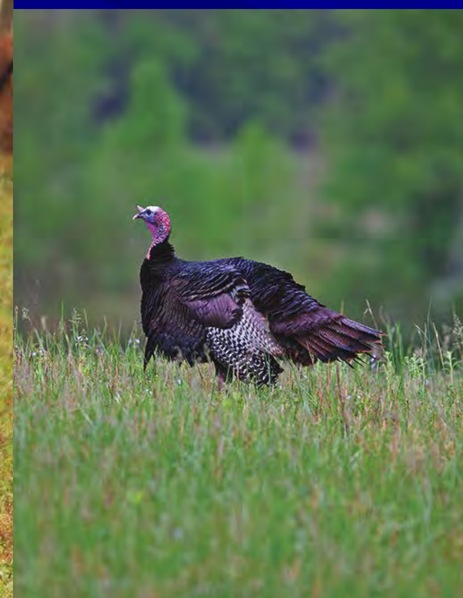
Grass Fed Sector

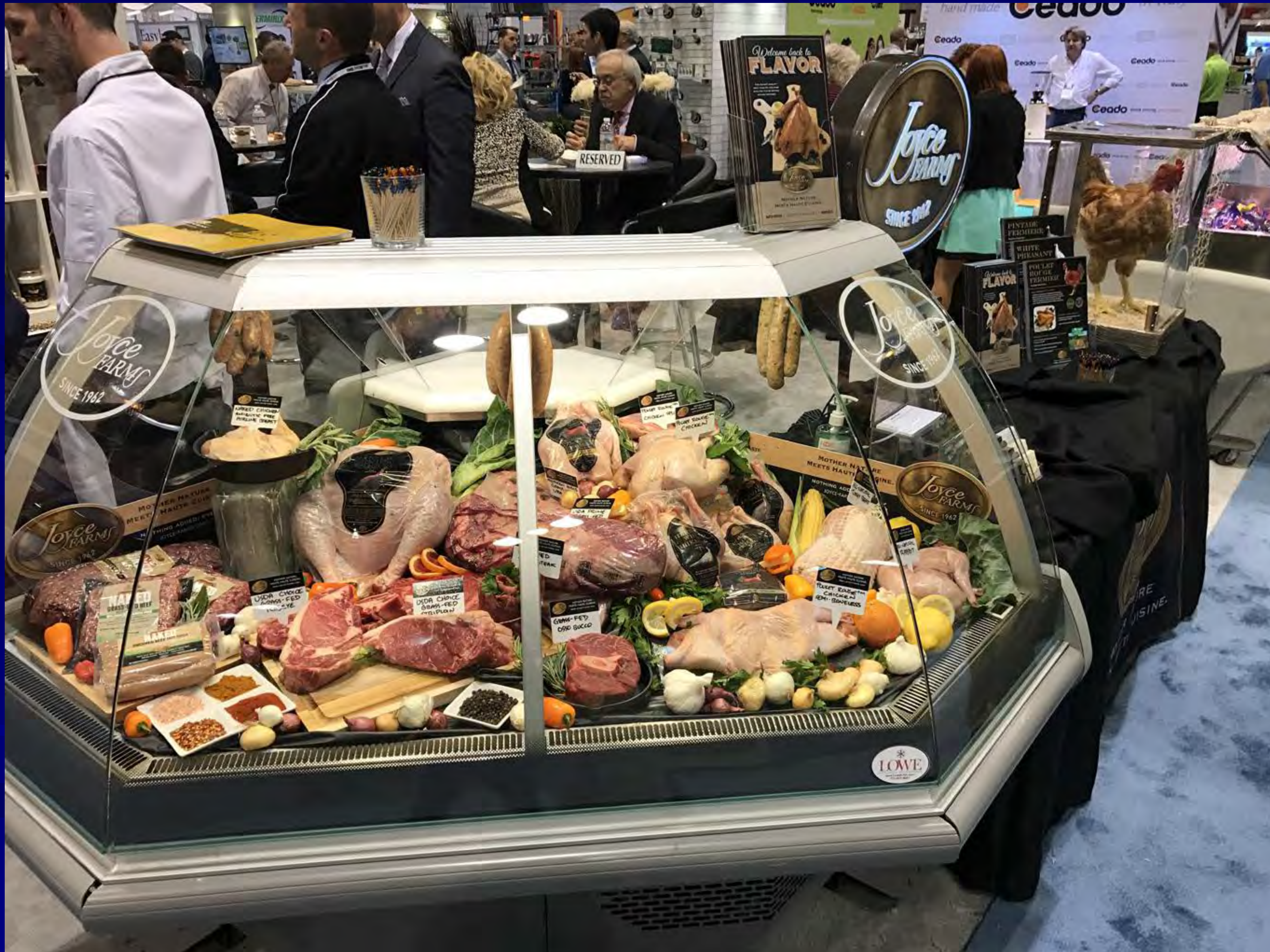


Meat & Poultry Company

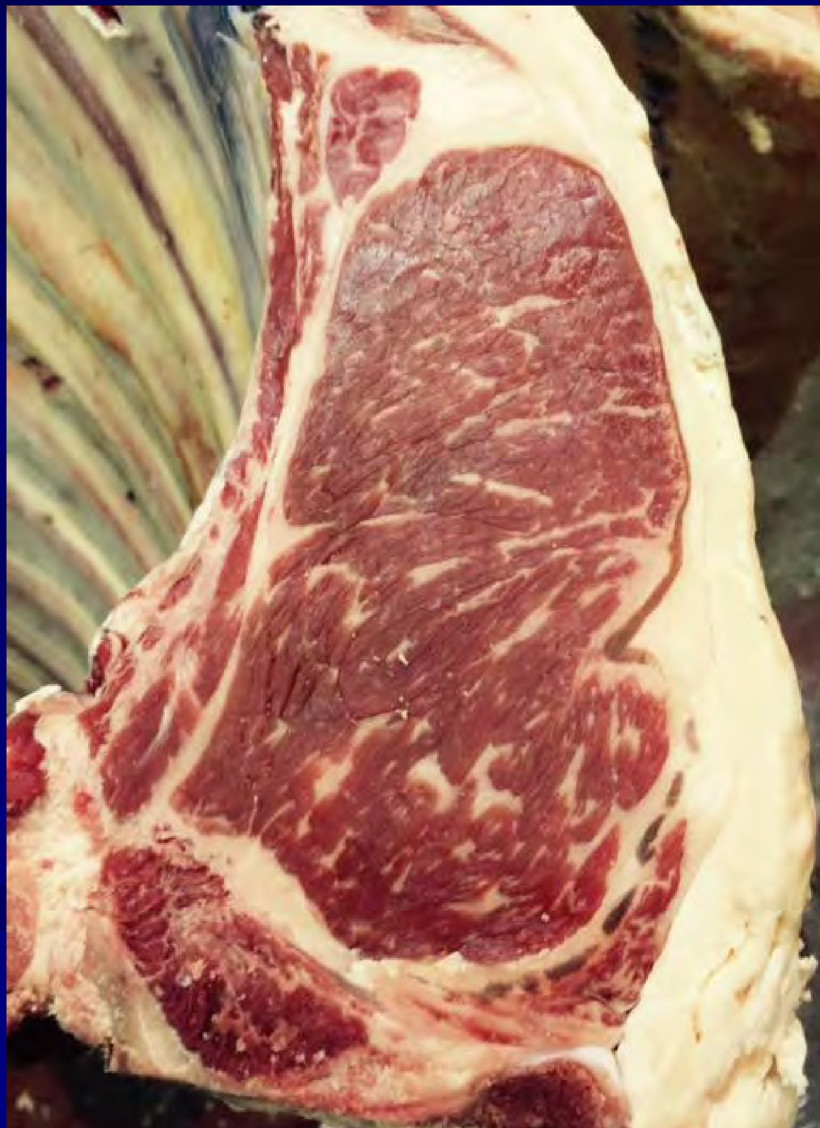

THE ONLY PRODUCER OF AUTHENTIC
LABEL ROUGE
POULTRY
IN NORTH AMERICA

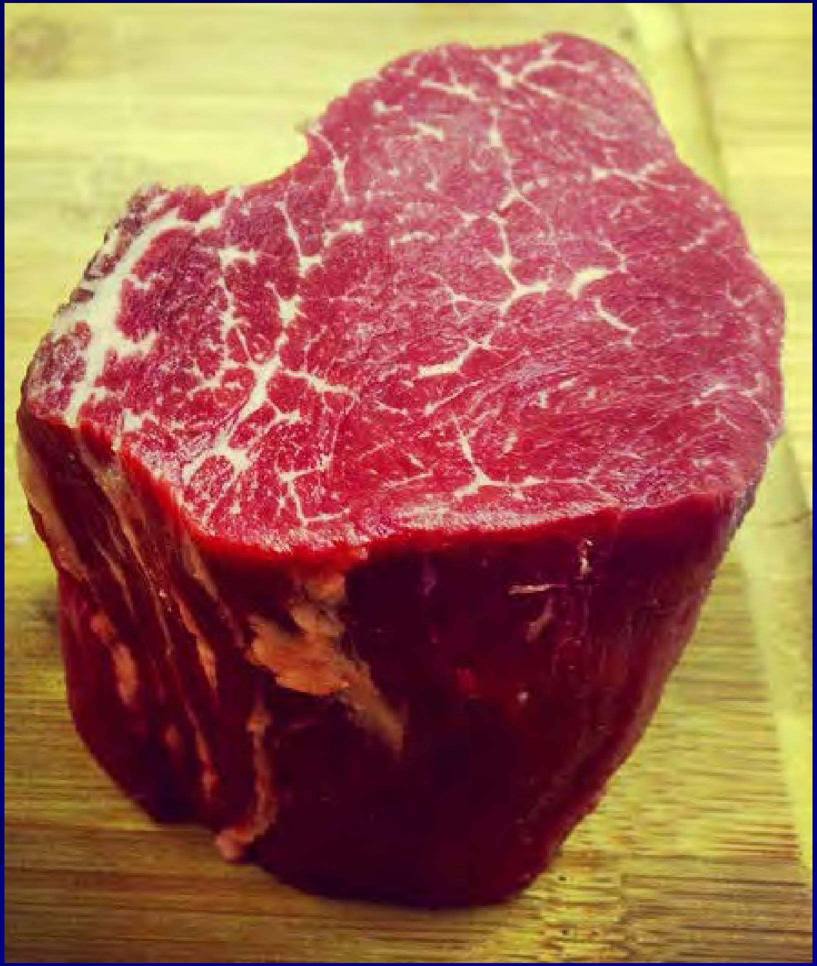


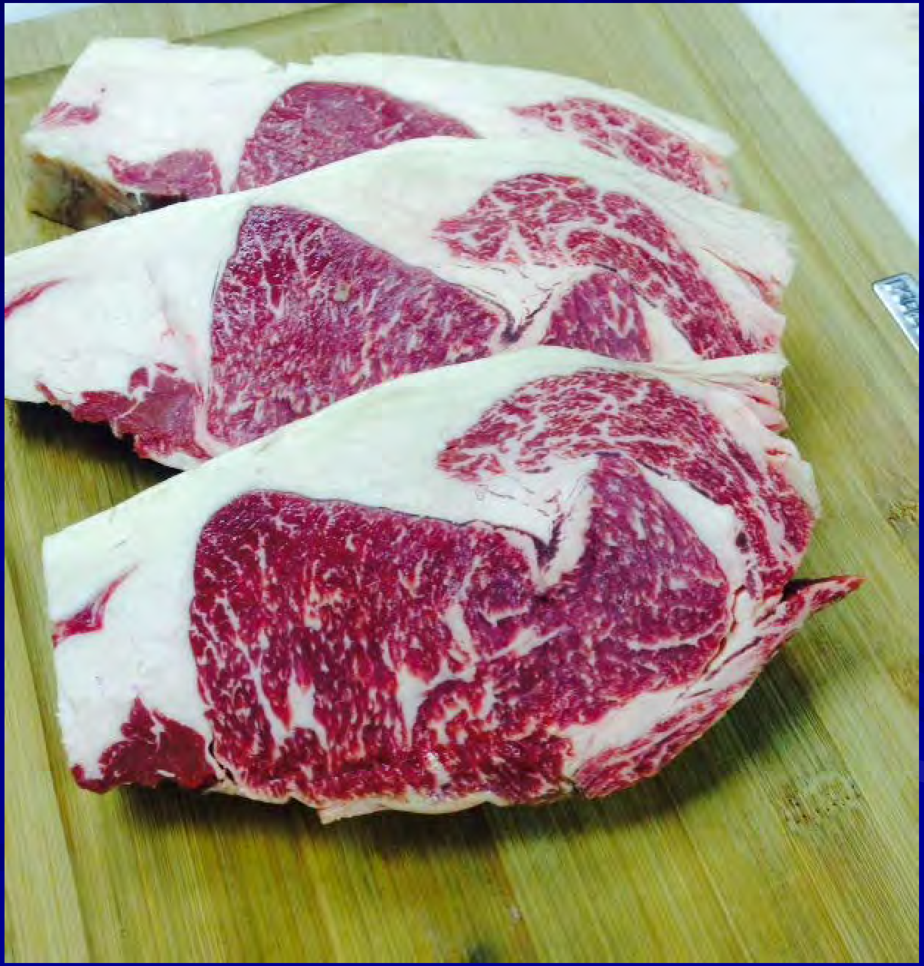


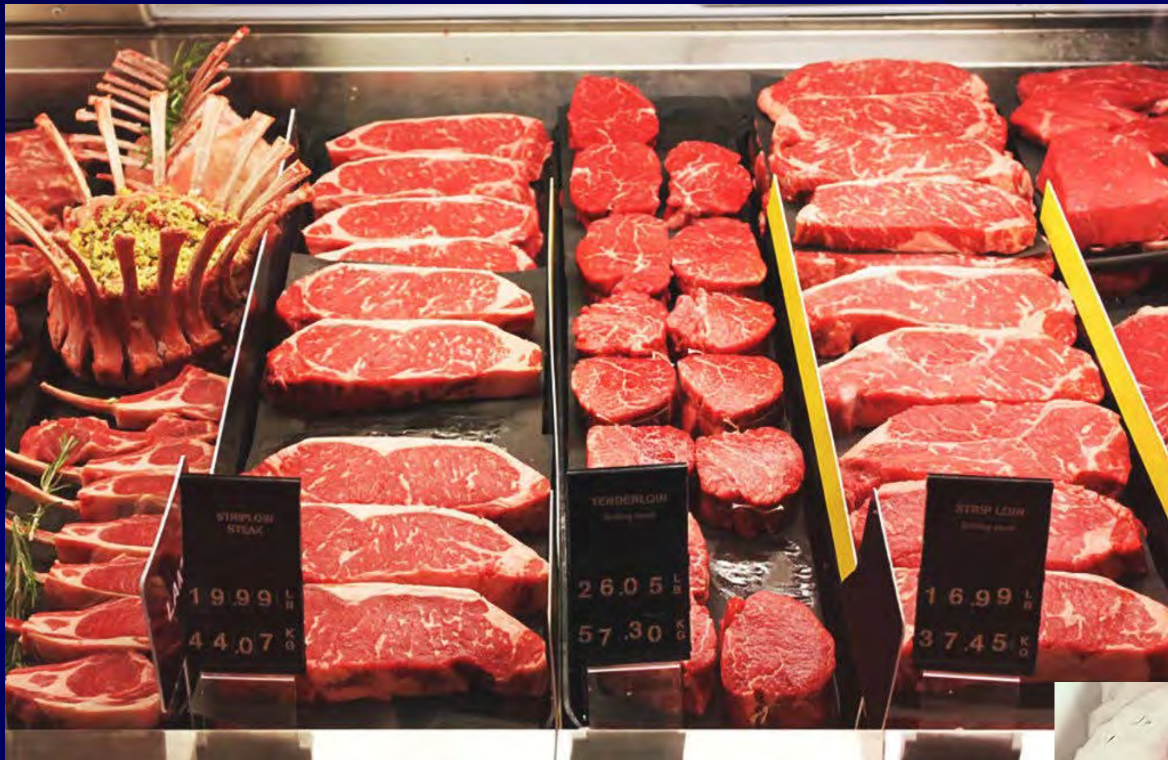

Welcome back to
FLAVOR
Joyce FARMS
SINCE 1962
RESERVED
Ceado
MOTHER NATURE
MEETS HAUTE CUISINE.
NAKED
LOWE

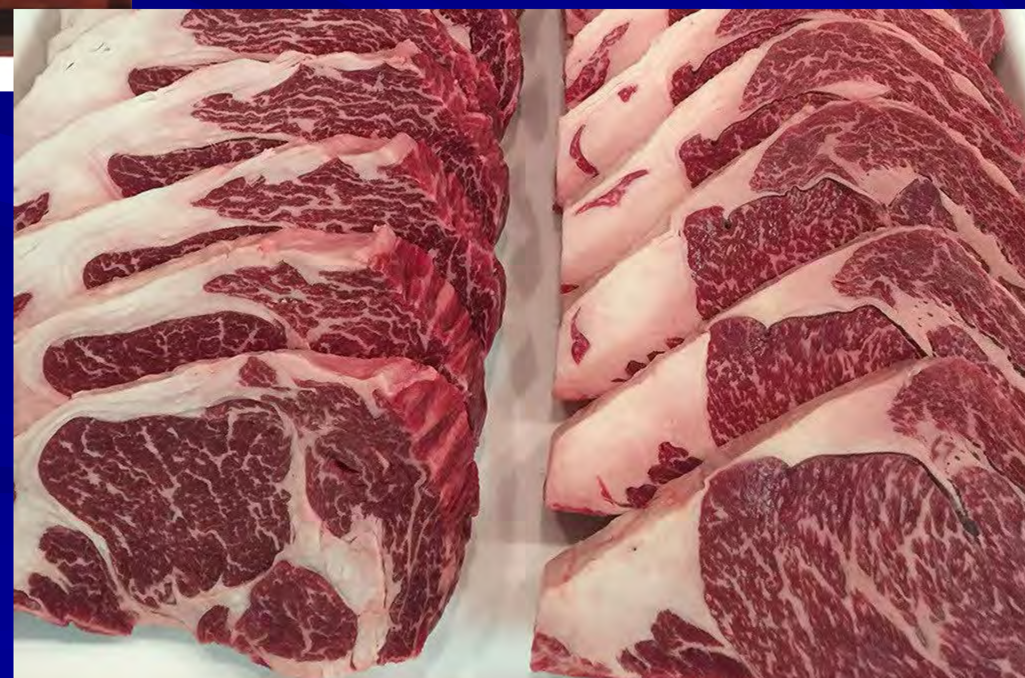
Grass Fed Potential



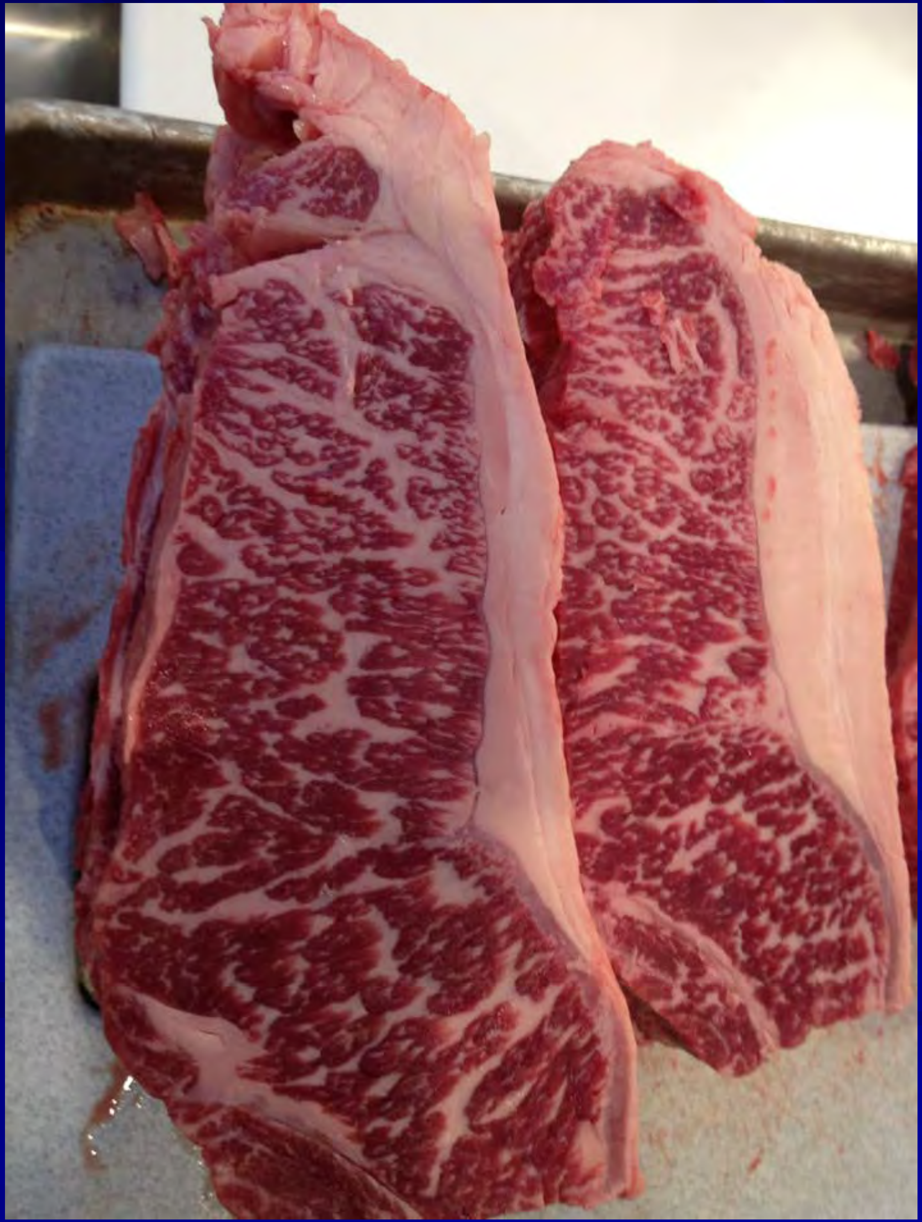





19.99 LB
44.07 KG
TENDERLOIN
26.05 LB
57.30 KG
STRIP LOIN
16.99 LB
37.45 KG



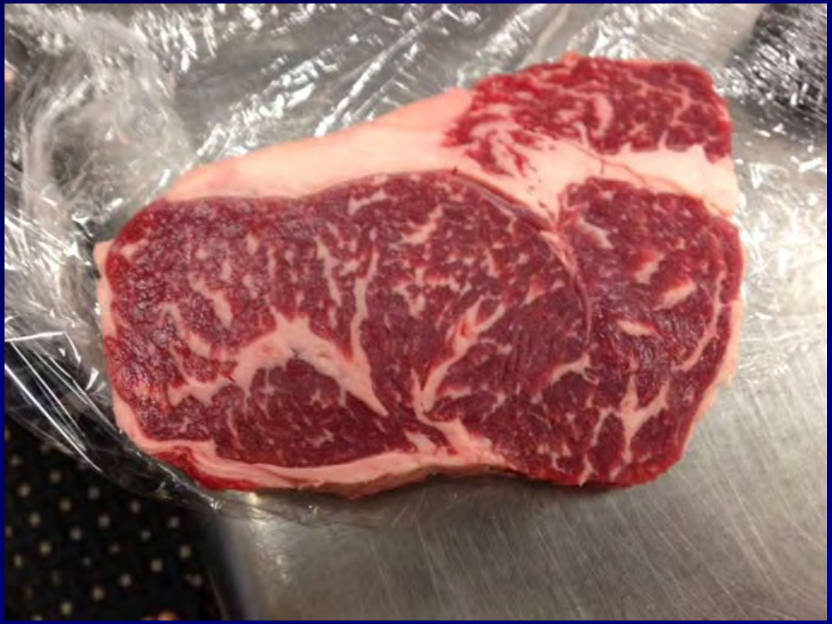
USDA Prime Grass Finished Beef



Carcass Data

Harvest Date	No. Head	USDA Prime (%)	USDA Choice	USDA Select
Feb 6, 2017	62	18	76	4
March 6,2017	68	8	79	13
April 7, 2017	48	15	74	11
May 19, 2017	42	9	87	4

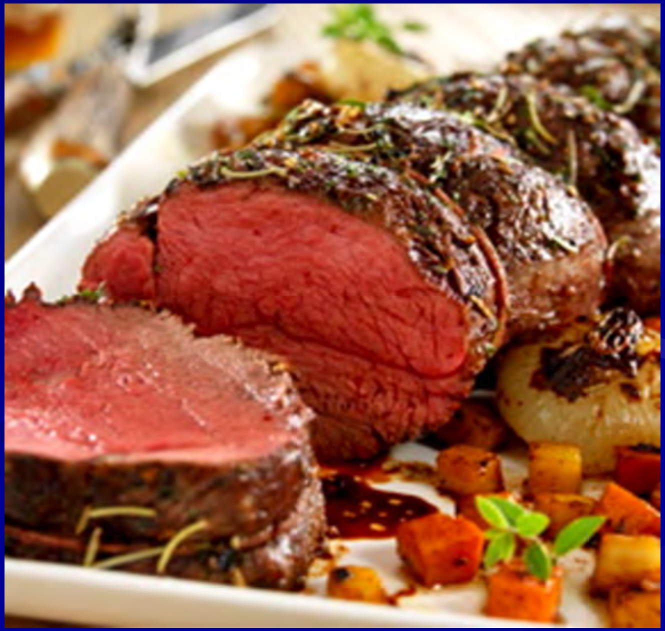
Domestic Grass Feed Beef



Websites like Eatwild.com have more than 16,500 visitors/day. More than 9 million total.

There are more than 1400 producers listed on Eatwild.com

Googling “Grassfed Beef”, Grass Fed Beef”, and “Grass Fed” produces more than 500,000 hits.



Value of Grass Fed Beef Market

- **1998**
  - 100+ serious grass fed beef producers
  - $4-$5 million retail value – Domestic
  - Industry in infancy
- **2016:**
  - Approximately **$4.0 billion+** sold in U.S.
    - $560+ million domestic
    - $3.4 billion+ imported
  - More than 4000 producers involved.
  - Growing @ **21-25%** rate annually.
- Has reached 7.8% Market share.

Domestic Grass Fed Production

- **July 2015 – July 2016**
  - Total of approximately **232,000** head harvested.
    - Branded and Direct Market
  - **189,000** harvested by branded programs (**81.5% of total**)
  - **Top 15** grass fed branded programs harvested **129,000** head (55% of total; 68% of branded)
  - **43,000 head direct marketed** (18.5% of total)
  - **100.9 million lbs** Domestic GF Beef produced

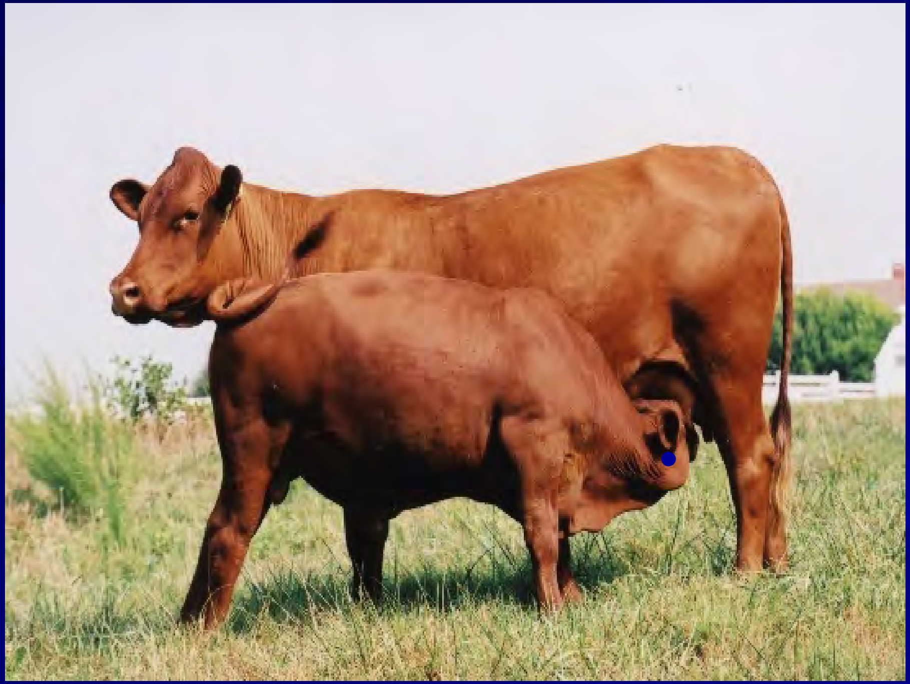
2015 - Present Developments

- JBS purchased Grass Run Farms - 2015
  - Australian Organic Grass Fed program - 2017
- Grassfed hamburger offered in all Carl's JR. and Hardee's restaurants
- Outback Restaurants now offer 100% Grassfed hamburger.
- ABP Food Group-Sysco – Multi-million $$ contract.
  - ABP research in 2014 estimated grassfed beef was 5% share of market.
  - Their market research estimated 28-30 million consumers want high quality grass fed beef
  - If they consumed 5 lbs per person annually, that would require between 321,839 and 344,827 head annually.
  - Paul Finnerty, CEO ABP Food Group, stated, "*We recognize the huge potential of grass fed beef in the U.S. and that is precisely the market we want to be in*".

Current Developments

- Cargill now integrally involved and importing grass fed beef from Australia.
- Bill Helming and RaboBank Projections
  - **Grassfed beef** will be **30%+** of total domestic beef market share within **5-8 years**
  - **Beef production will segment into: Commodity, All Natural, Organic, Grass Fed (Lean & High Quality), Non-GMO Grain Fed**
- **Interest growing in Canada and Mexico**

Market Research Focus Groups – 2006 Study

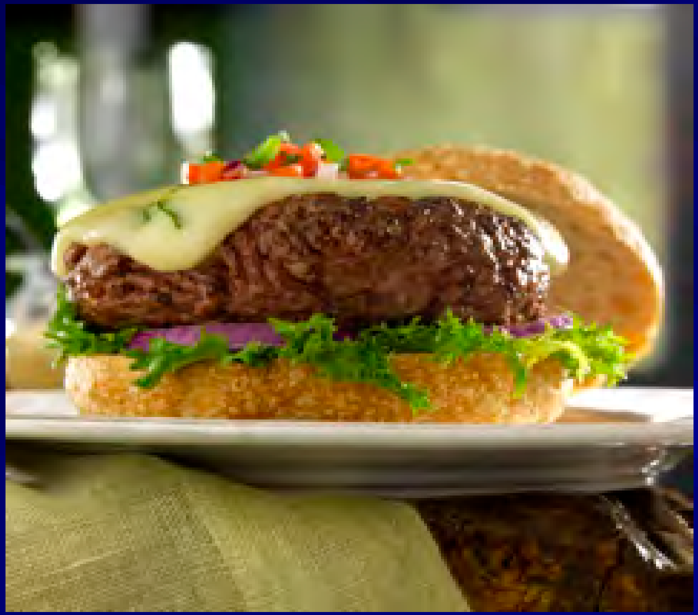


- Retailers & Restaurants
- Wholesale & Distribution
- Medical, Health
- Consumer Cross Segment

Identified Consumer Targets

- Young/Middle Aged Families (25-42 yrs old most likely to purchase)
- Baby Boomers
- Concerned Consumers
- Wellness & Fitness

Market Research Results - 2006



- High Acceptance Rate
- Potential to capture 20-22% of beef market share
- $15-$17 Billion in Sales Potential
- Capture Non-Beef Eaters

Grass Fed Dairy Growing

- Organic Valley
- Dreaming Cow Dairy
- Maple Hill Creamery
- Kalona
- Snowville Creamery
- Organic Pastures
- Traders Point Creamery
- Siggi's
- Kalona SuperNatural
- Trickling Springs Creamery
- Natural by Nature

Seven Sons

Per Acre Net – Direct Costs

Grass Fed Beef	$663
Pastured Pigs	$701
Free Range Eggs	$3721
	$5085
Land/Labor Costs	$ 881
Net per Acre	**$4204**

Largest Challenges

- Feedlot Style “Grass Fed” Beef – TMR
- Imported Grass Fed and lack of COOL.
- Lack of strong Pastured Protein Trade Association.
- Certification that consumer trusts.
- No national brand awareness
  - Confused consumers
  - Label deception

Nutritional Benefits

- Assume avg person eats 4 oz grass fed beef 3 times/week – 156 times a year.
- Grain fed beef contains 1.68 more grams myristic and 2.31g more palmitic acid, but 0.34g less stearic acid.
  - In a year, you would consume 262 fewer g of myristic, 360g fewer palmitic, and 53g more stearic acid.

Nutritional Benefits

- Grass fed beef contains 4.48g more Omega-3 per serving than grain fed beef.
  - Over a year this equals **700g** more Omega-3.
- Omega-3:Omega-6 ratio in grass fed beef is 1:1.2 to 1:33. Grain fed ranges from 1:20 – 1:55.
- AMA and AHA recommend overall diet of 1:4.
- Participants in 2011 BJN* study had higher circulating levels of O-3 and lower O-6 after just 4 weeks of grass fed beef consumption.

*British Journal of Nutrition

Nutritional Benefits

- Grass fed beef provides 800g more Omega-7 in a year’s time.
  - O-7 plays vital role in lowering LDL and tryglycerides.
- Grass Fed Beef provides 585g more CLA.
- 6-10 times more vitamins and antioxidants:
  - Vit. A, Vit. E, Catalase, Glutathione, Superoxide Dismutase (SOD).

Can We Finish Grass Fed Beef at Scale?

- Grain fed sector produces between 27-29 million head annually.
- Three main ways to expand grass fed production:
  - Idle grassland acres
  - Conversion of a percentage of row crop acres.
  - Intermountain Region – Irrigated meadows

Idle Grassland Acres

- Approximately 15-20 million idle acres in U.S. with average potential forage DM production of 3 tons/ac
- Takes about 6080 lbs of DM to finish an animal properly during the finishing phase.
- Potential to finish 10 million head alone on idle acres.

Converted Row Crop Land

- 15% of corn crop used to finish cattle in the feedlot.
- Other 85% goes for ethanol production and to feed poultry, hogs, catfish, dairy, etc.
- 2016 corn acres was 94.1 million acres.
- Convert 15% to forage for grass finishing
- Equals 14 million acres.

Do the Math

- For every 30 bushels of corn produced, that same acre will produce 1 ton of forage DM.
- National corn yield is 170 bu/ac.
- Forage DM on those same acres would equal 5.7 tons of forage annually.
- That’s enough to finish 1.88 steers/acre.
- Can finish 26 million steers annually on the converted corn acres.

Intermountain Region

- About 12 million acres of irrigated grassland in the intermountain region.
- Average production is 5 tons of forage DM/ac.
- Take 30% of those acres for grass finishing – 3.6 million acres.
- Can finish 1.67 head/ac or 6 million head annually.

Grand Total

- Idle Grasslands = 10 million head
- Converted Row Crop = 26 million head
- Intermountain = 6 million head
- Total = **42 million Head annually!!**