

Grass Fed Beef Value Chain Research



Photo credit: Health Hero Farm, South Hero, VT

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Photo credit: Shire Beef, Vershire, VT

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INTRODUCTION

This research was undertaken to update Vermont on the market for grass-fed, grass-finished Vermont beef. The study explored the scale and nature of the current market, and sought to identify key challenges and opportunities through interviewing seven meat aggregators and distributors and Vermont's largest institutional buyer, Sodexo. Aggregators and distributors interviewed included: Black River Meats located in VT, Northeast Family Farms (Dole & Bailey) located in MA, Hardwick Beef located in CT, Pineland Farms Natural Meats located in ME, Adirondack Grazers (ADK) located in NY, Slope Farms LLC located in NY, and Fleisher's Craft Butchery located in NY.

SUMMARY

Market Landscape

Size and Scale

- Of the seven aggregators, 6 are small to mid-size, each finishing an average of 833 animals per year, with Vermont animals representing 15% of the total volume. The large-scale aggregator finishes up to 36,000 animals per year, and sources less than 1% of its feeders from Vermont.
- The 6 small to mid-size aggregators have an average of 27 farms in their portfolio, with 24% of these being from Vermont. The large-scale aggregator has 200+ farms in its portfolio with one feeder farm and no finishing farms Vermont.
- In 2016 Sodexo purchased 15.4% of its food budget on products that met the Vermont First definition. Within the beef category, Sodexo spent \$1.051 million dollars on beef in 2016; \$202,000, 19% of the total meat spend was on local pastured, grain-finished beef.

Product & Market

- While three of these aggregators are solely grass-fed, grass-finished suppliers, most of the beef sourced locally is pastured, grain-finished animals. Reasons given for this include:
 - **Inconsistent Quality, Size & Lack of Standards** for a local grass-finished product versus the quality and accepted standards available from imported grass-finished product (AU, NZ)
 - **Yet Unconvincing Value Proposition** for the average consumer the premium required for a local, grass-finished product exceeds their price sensitivity threshold, and these
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consumers still want a “tender” and familiar tasting beef experience. While a local, pastured grain-finished animal may not be perceived as sustainable and healthy as a pastured, grass-finished animal, it is an “entry point” and more accessible product for consumers seeking an alternative to conventional beef. Feeding grain reduces north east producers’ cost of goods sold by both expediting the product life cycle and replacing high cost of nutrients in high quality winter hay with lower cost nutrients from grain inputs,¹ thus facilitating a viable, sustainable and accessible price point to consumers and producers; simultaneously the grain makes the finished product more familiar and thus appealing to the end user. The pasturing and localness appeal to consumers’ emotional attachment to sustainability, wellbeing and animal welfare, for which consumers are willing to absorb a moderate premium over conventional beef. On the flip side, consumers seeking grass-fed, grass-finished beef specifically for personal health benefits (higher levels of omega-3 fatty acids and CLA anticancer properties, lower levels of saturated fats) only care to pay a premium for the product’s feed, not an additional premium for where it was sourced or how it was raised.

Over time it is expected that the average consumers now choosing between conventional and local, pastured, grain-finished will evolve along the continuum and begin to choose between purchasing local, pastured, grain-finished and local grass-fed, grass-finished as an even better choice for both sustainability and personal health. It is uncertain whether those choosing grass-fed for its health properties now will evolve to associate additional value for how and where the product was raised.

- **Immature Supply Chain** the local/regional supply chain for pastured, grain-finished animals is established, buyers can source local pastured, grain-finished product as boxed beef without having to balance whole carcasses themselves, this is not yet an option for local grass-fed, grass-finished product.
- Preferred breeds are English, especially English crosses. Examples include Hereford, Angus, Devon, Hereford crosses.
- The market is moving away from cow-calf operations to efficiency driven systems in which many often smaller farms specialize in raising feeder calves to supply a smaller number of large finishing farms
- The market is moving away from whole and half carcasses to boxed beef
- The trend in institutional markets is moving away from meat based proteins as the center of the plate, turning towards plant based proteins instead.

¹ Pound per pound the hay is less expensive. It is the nutrient density of the grain that makes it cost effective.

Pricing

- The average price aggregators and distributors paid to farmers for hot, hanging weight, grain or grass-finished, local beef is \$2.74/#; variation in price ranged from a low of \$2.25/# to a high of \$3.25/#, representing up to \$687 in net income variation per carcass to the farmer.
- The average price aggregators and distributors received from retail buyers for hot, hanging weight, grain or grass-finished, local beef is \$3.76/#; variation in price ranged from a low of \$2.86/# to a high of \$5.06/#, representing up to \$1,511 in net income variation per carcass to the aggregator/distributor.
- The average price retail buyers received from consumers per pound of finished product per carcass is \$11.46/#, which equates to \$7.11/# hanging weight. Variation in pricing ranged from a low of \$5.84/# hanging weight equivalent to a high of \$10.32/# hanging weight equivalent; representing up to \$3,079 in net income variation per carcass to the buyers.
- Price paid by aggregators and distributors to farmers represents 73% of the price received from buyers, yielding a 27% gross margin on Cost of Goods Sold.
- Price paid by buyers to aggregators and distributors represents 51% of the price received from consumers, yielding a 49% gross margin on Cost of Goods Sold.

Production Yields for New England & New York

- Finish yields
 - The average finish live weight is 1,200 # with an average carcass yield of 57%
 - The average yield of retail cuts is 426 #, 62% of carcass weight
 - The average age at slaughter is 24 months
 - Only the most proficient producers are yielding a 2 pound per day rate of gain
- Feeder yields*
 - The average feeder live weight when transitioned to finishing is 800 #
 - The average feeder age when transitioned to finishing is 16 months

*Feeders refers to weaned calves grazing pasture and of sufficient weight and maturity to be placed on high-energy rations for finishing.

Processing

- Processing costs in New England can run up to \$800 per head
- Processing costs for the four large national processors (Tyson, JBS, Cargill and National) can cost as little as \$100 per head
- Larger regional branded grass-fed, grass-finished, and “natural” beef programs using national or regional packinghouses can secure volume based pricing bringing their processing fees down between \$100-400/head.

Opportunities

- Develop the supply chain for local grass-fed, grass-finished beef
 - Support and assist aggregators and distributors in efforts to begin local grass finished carcass balancing and boxed beef availability at scale (Fleisher’s for example, would like an aggregator to balance 5 carcasses per week). With load balancing retailers have leverage to grow the market.
 - Develop an agreed upon set of standards for a local grass-fed, grass-finished product.
 - Support and assist local/regional processors in establishing volume based pricing for aggregators. With volume based pricing, processors are ensured a steady supply of work, and aggregators can optimize their cost of processing, providing a more competitive price for their finished product.
 - Support R&D for technological advances that improve product quality and supply chain financial viability, for example, “Wet-aged” cryo-packed sub-primal beef has been standardized for processing in commercial markets. This technique allows the beef to age chilled in a case for 35 to 45 days. This aging process improves tenderness and taste without as much weight loss as “dry-aged” beef, which usually hangs for 14 days with a 5% weight loss per week.
- Support efforts to increase sourcing of local, grass-fed, grain-finished animals
 - Pineland Farms Natural Meats expressed a desire for more Vermont producers. Feeder farms are 100% grass based, and animals raised in Vermont could then be shipped to either grain or grass-finishing farms.
 - Pineland Farms Natural Meats also expressed interest in establishing grain finished finishing farms in Vermont.

- To help catalyze the Vermont beef industry, Sodexo will work with Black River Meats to identify opportunities to increase the percentage of Vermont raised animals in the Black River Meats Northeast Raised product line.
- Transform the move away from meat as the center of the plate to a local beef advantage
 - If institutions adopted a “Less Meat, Better Meat” philosophy, maintaining their current meat budget but directing it towards local pastured, grain-finished or grass-fed, grass-finished product they will support a local beef industry while achieving their local purchasing and sustainability initiatives.
 - If Sodexo Vermont’s entire beef budget was entirely redirected to locally sourced beef it would create an influx of \$850,000 into the local beef supply chain.

ANALYSIS

Global Market Trends

Growing Market, Increased Competition, Favors Buyers and Consolidation

Nationally, grass-fed, grass-finished beef is an emerging market. According to Back to Grass: The Market Potential for U.S. Grassfed Beef, retail sales have been doubling annually, growing from \$17 million in 2012 to \$272 million in 2016. However, this growth has captured the attention of the large packing houses who are pushing to develop their own vertically integrated grass-fed, grass-finished supply chains. As competition increases, buyers gain the upper hand. Convenience and price become increasingly important features in purchasing decision making. Buyers would prefer boxed beef over whole carcasses (eliminates carcass balancing on the buyer), aggregators would prefer to source animals from a single point source (finishing farm) where quality control and specifications can be more closely monitored... as a result the supply chain is moving toward a landscape in which there are many feeder farms that in turn supply feeders to a small number of larger scale finishing farms who supply aggregators that have the scale, infrastructure, inventory management capacity and capital to balance carcass utilization.

Further pressurizing the system is a recognition that many Americans would like to purchase “better” meat, meat that is healthier for them and for the planet, but that they can’t afford the cost of “going all the way” or are not yet ready to sacrifice tenderness and familiar flavor. National and regional aggregators have been addressing this opportunity by providing an intermediate alternative, a “natural beef,” loosely defined as a pasture based, grain-finished offering that yields a premium over conventional beef but is not as expensive or unfamiliar as grass-fed, grass-finished.

Long Term Institutional Trend Away from Meat as Center of the Plate

Many organizations guiding institutions in global sustainability and public health awareness such as Healthcare Without Harm, Better Buying Lab and Menus of Change are encouraging an institutional shift towards menus designed around plant based proteins, “center of the plate alternatives”, rather than meat.² While a reduction in meat consumption could theoretically threaten the local beef industry, it could also create opportunity. “While there is certainly a trend away from meat as center of the plate, that doesn’t mean that meat proteins will not be

Sustainability Debate

Regarding which method of production is more sustainable, arguments are being made for both.

For example, a grass-fed, grass-finished animal can take up to 6 months longer to finish, releasing 6 months more greenhouse gasses, consuming 6 months more water and producing 6 months more manure.

A grain-finished, pastured animal requires the release of greenhouse gases, application of toxic pesticides and consumption of fossil fuels in the planting and harvesting of grain.

Which is “more sustainable?”

² See Healthcare Without Harm, Better Buying Lab and Menus of Change as principles guiding many institutions’ values and decision making.

served in volume on campus,” noted Annie Rowell, Director, Sodexo Vermont First Initiative. And if the current budget spent on beef was directed to local beef whether it be pastured, grain-finished or grass-fed, grass-finished, both of which command a premium over commodity beef, institutions would be advancing their sustainability and reduction in meat consumption initiatives, while increasing their support of local production. Healthcare Without Harm aptly captioned this approach “Less meat, better meat” eight years ago.

Ongoing Challenges

Inconsistent Quality of Local Grass-finished Offerings

Aggregators indicated that before we can even enter a discussion about pricing we need a discussion about standards. When one aggregator was asked how they can source grass finished from New Zealand and not from Vermont, the reply was New Zealand farmers are very collaborative, they set standards for their product and then adhere to them. Our farmers are independent and unwilling to do the record keeping required to demonstrate they are adhering to any standards. Our farmers have a mentality that they think they are already doing it right and don’t need documentation to prove it.

Standards aggregators mentioned included:

- We would like to see local grass-finished product for example meet USDA choice standard for tenderness and taste for customer. New Zealand uses EU specifications which allow for “less fats” than USDA Choice, but maintain tenderness and taste because of genetics and a lot of grass.
- We would like to have consistency in the carcass weight, so that it didn’t vary from 900 pounds in the summer to 600 pounds in the winter, for example.

Confusing Marketing

What is grass-fed?

There is no as-yet single agreed upon definition for “grass-fed.” Many “natural” products are marketed as grass-fed while also being grain-finished. Consumer confusion is anticipated to increase as the four national packinghouses (Tyson, JBS, Cargill and National) launch “natural” and “grass-fed” product lines.

What is “local”? Does the definition of “local” include Vermont? What percent of a “local” product comes from Vermont?

Sodexo was purchasing Black River Meat’s Northeast Raised product (product raised in the Northeast and processed in Vermont) over its Vermont Grass-Fed product³ because Sodexo’s *interpretation* of the Vermont First initiative definition of local was that if meat was processed

³ Black River Meats has since eliminated the 100% Vermont grass-fed, grass-finished product due to the high costs of maintaining separate pricing and tracking, customer resistance to high price, lack of available quantity and poor quality and taste.

(slaughtered, cut and packed) in Vermont, it was considered local, even if the meat was not raised in Vermont. Sodexo's local definition used for their local purchase tracking is informed by a definition developed by Farm to Plate, which in turn is informed by state statute. The definition outlines what constitutes local for raw ingredients and what constitutes local for manufactured products. Meat is identified as a raw product in the raw definition, but because Black River's Northeast line comes from meat slaughtered and processed in Springfield, Vermont, Sodexo was designating the product as local under the manufactured portion of the definition. Ultimately, more clarity is needed in the statute definition to resolve these issues of interpretation.

Product packaging and marketing claims themselves can cause confusion. For example, Black River Meats' label includes a visual symbol of the state of Vermont, terminology claiming both *local* and *northeast* (defined in fine print as "raised in the northeast for a minimum of 150 days"), with no indication of what percent, if any, of the product originated from Vermont (see below).



Photo credit: Black River Meats, Springfield, VT

When interviewing Black River Meats, we determined that approximately 20% of the meat sourced for the Northeast Raised product line is from Vermont.

Fleisher's Craft Butchery's website claims:

"Our 100% grassfed and pasture-raised animals spend their entire lives outdoors on pasture. We select our cattle based on their ability to thrive on New England forage, and feed a small portion of grain to our pasture-based herd to maintain health and well-being during the colder months."

In speaking with Fleisher's, we determined they were referring to the fact that they carry two product lines, a grass-fed, grass-finished line and a pasture-raised, grain-finished line, and that only the pastured, grain-finished product is fed grain. From the statement above, would the average consumer decipher this?

In the wake of Tyson, JBS, Cargill and National entering both the natural and grass-finished markets, our local/regional and grass-finished aggregators cannot afford to have ambiguity in their marketing messaging. Consumers need to clearly understand and differentiate what sets our local/regional, pastured, and grass-finished products apart.

Risks

Watered Down Standards

Moving to a feeder-farm finishing-farm model spearheaded by the large packinghouses and market forces may increase operational efficiency within the supply chain, reduce costs, and improve consistency of the finished product, but will it compromise the original standards and values of grass-fed, grass-finished growers in the process? Will the push to optimize efficiency be at the expense of animal and environmental welfare and lead to nothing more than “grass-finished feed-lot beef”?

Inability to adapt business model may lead to collapse of local/regional aggregators All the 100% grass-fed, grass-finished aggregators noted demand was slowing as compared to previous years. Even though growth of the sector continues, if regional aggregators cannot offer the convenience, consistency and pricing features/benefits to mainstream retail buyers, and cannot create and convey a compelling message to niche buyers willing to remain loyal and support the original values and mission, they may continue to lose market share into obsolescence. A key issue for aggregators wanting to remain relevant with mainstream retail buyers will be addressing the additional levels of complexity that boxed beef entails. Boxed beef requires aggregators to master inventory control management, have access to finely honed butchery skills, and requires infrastructure to stock and store product. Moving from whole carcasses and primals to boxed beef cuts is expensive and complicated.

Institutional shift away from meat as the “center of the plate”

Sodexo brought to our attention that the long-term trend for institutions is to adopt menus around plant based proteins, “center of the plate alternatives” rather than meat. The result is that institutions worldwide are placing a lower priority on meat purchasing over vegetables and dairy. Thus, not only must these institutions first buy into local for vegetables and dairy, we must then convey why local, pastured meat whether grain or grass-finished supports their sustainability initiatives and furthermore why grass-fed, grass-finished supports their patients’ health and well-being.

Price

The four national packinghouses are actively entering the “natural” and grass-fed, grass-finished market. These entities can not only streamline production costs but significantly undercut regional and local processors on processing fees. In Vermont it can cost aggregators up to \$800 to process a beef animal. The four national packinghouses can process an animal for less than \$100. Even if Vermont farmers can optimize production efficiency can a Vermont beef product continue to compete in a regional market if our processing costs cannot be restructured?

NEXT STEPS

Reinvigorate the “Buy Direct” Farm to Consumer movement

If the state of Vermont has any funds for marketing initiatives, the potential biggest driver to support Vermont’s beef industry, especially its grass-fed, grass-finished producers would be to re-energize consumers’ desire and motivation to support local farmers directly. USDA Vermont census data shows that while total direct agricultural sales increased from 2007 to 2012, the rate of increase is declining and the average dollar value of direct sales per farm dropped from \$15,511 in 2007 to \$13,245 in 2012. Yet the current pay price received from aggregators is untenable for many farms, and these aggregators are in a tenuous position themselves. Meat sold direct to consumer however, at an average of \$12 per pound is sustainable. With a blend of direct-to-consumer and aggregator sales, farms can achieve a viable total gross income and our state can continue to grow the volume of meat raised in Vermont. Every pound of meat redirected from wholesale to direct-to-consumer sales locally strengthens the individual sustainability of each farm, the long-term viability and resiliency of the Vermont beef industry, including our processors, aggregators and distributors, and the ability of our state to participate in the larger regional market.

Sodexo as cornerstone to “local” beef

Sodexo has the potential to contribute up to \$1 million to the local beef supply chain while supporting its local sourcing and global sustainability initiatives. To help catalyze Vermont’s role in the local beef supply chain, specifically, in addition to supporting the local beef supply chain, Sodexo will work with Black River Meats to identify opportunities to increase the percentage of Vermont raised animals in the Black River Meats Northeast Raised product line.

Support Vermont farmers participation in the regional feeder-finisher movement

Focus on supporting the viability of Vermont farmers to profitably participate in needed sectors of the existing and growing national market: as feeder or finishing farms. Further research is needed to ensure the financial feasibility of feeder and finishing farms in Vermont. If proven feasible, production guidance should be established, and best practices and technical assistance provided to improve the competitive position of Vermont farmers interested in participating in a feeder/finisher supply chain environment.

Explore processor pricing models that maintain regional competitive edge While local packinghouses tend to have one set of rates they charge, the national packinghouses offer price breaks to aggregators with minimum standing volumes. If a regional aggregator could get processing fees down from \$800 to \$400 per head, for example, by bringing a full tractor trailer load per shipment (approximately 40 head, 40,000-pound max weight load), the aggregator will remain significantly more competitive coupled with their compelling story in the face of competition whose processing fees are \$100 per head or less.

Support aggregators’ ability to balance carcasses and offer boxed local, grass-finished beef

Until the market has sufficiently grown such that the aggregators have outlets for all elements of the carcass there will be lost costs associated with storing and shrinkage. The industry would

benefit from funding to support investing in storage costs, value-added production for trim, or facilitating large scale institutional contracts for trim.

Develop official standards for a local, grass-fed, grass-finished beef

Work with aggregators and producers to develop and accept a standard definition of “local, grass-fed, grass-finished beef.” The local product will have a better chance of standing up against imported product if it can clearly define itself, and become increasingly consistent in quality, taste, and quantity.

APPENDICES

Marketing Claims

Grass-Finished Aggregators

Hardwick Beef

- “Sustainable & local”
- “Raised on grass”
- “No antibiotics. No hormones. Ever.”

Adirondack Grazers Cooperative

- “100% grass-fed and grass-finished”
- “Antibiotic and Hormone Free Beef”
- “Family Farms”
- Source verification
- “Quality & Consistency”
- “Humane animal care”

Slope Farms LLC

- Pure Catskill dry aged beef, grass-fed and grass-finished
- Delicious local beef.
- Only pasture grasses, water and minerals.
- No hormones, grain, antibiotics, or chemicals.
- Never confined to feedlots

Grain-Finished Aggregators

Black River Meats

- “high quality”
- “humanely-raised”
- “consistently flavorful”
- “raised to the strict standards of our “never-ever” meat program. No antibiotics. No hormones. No animal by-product feed. Ever.”
- “tender, flavorful and always antibiotic free”
- “Locally raised meats fresh from our Northeast Family Farms”

Pineland Farms Natural Meats

- “humane”
- “finest cuts”
- “all natural”
- “The Natural “never-ever” protocol: no antibiotics, no added hormones, strict vegetarian diet, not fed animal by-products”
- “family farms”
- “animal welfare”

Northeast Family Farms

- “humane”
- “custom cuts”
- “master butchering skills”
- “The Natural “never-ever” protocol: no antibiotics, no added hormones, strict vegetarian diet, not fed animal by-products”
- “family farms”
- “animal welfare”

Fleisher’s Craft Butchery

- “Your connection to meat raised right”
- “Spending their lives on grass”
- “Free to roam with the herd”
- “Rotated through new growth pastures regularly”
- “Always humanely raised and handled”
- “Never given growth hormones, sub-therapeutic antibiotics, or steroids” • “Small, local farmers”
- “Freshest, best tasting meat”
- “Cut by hand by our expert butchers”

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