

**CADE FINAL REPORT TO NYSERDA**  
**Pastured Meats Initiative and On-Farm Poultry Processing Study**  
**Project # 6285**  
**December, 2002**

CADE has successfully accomplished the objectives of the Pastured Meats Initiative by:

- 1) Supporting the creation of pasture-intensive, low energy input methods for raising the highest quality meat products.
- 2) Organizing a legal agricultural cooperative.
- 3) Providing farmers and potential farmers with educational materials and training opportunities for pastured meat production.
- 4) Facilitating the development of new products and markets for pastured meat products.
- 5) Researching and developing a plan for an energy efficient on-farm poultry slaughtering facility.

The result is projected cooperative sales of \$285,000 in 2002, which exceeds the stated goal of \$200,000 by \$85,000.

Every participating farmer has increased the size of their farm and their sales revenues by at least 20% per year over the duration of the project. At the same time, we have demonstrated energy inputs savings ranging from 20% to 89% for meadow raised production compared to conventional production methods during the grazing months for beef, veal, lamb, pork and poultry.

In conjunction with the Pastured Meats Initiative, CADE researched the potential energy savings and cost effectiveness of using an energy efficient on-farm slaughtering facility for poultry and custom processing. This research identified a potential of 46% in energy savings and a 47% increase in profits for the farmers who are processing 20,000 poultry units versus using regional slaughtering facilities. The facility also conforms to the needs of the small ruminant custom processor.

CADE assisted the farmers in formally incorporating as the Meadow Raised Meats Cooperative Marketing Association. CADE and the Meadow Raised Meats Cooperative has established the infrastructure and contacts for a marketing system allowing the farmers access to expanded markets. The farmers have been successful at drawing customers to their farms and to farmers' markets for the most profitable direct sales. The farmers have also developed a customer base of more than a dozen stores and fifty restaurants in New York State.

The foremost Pastured Meats Initiative objective not attained is the number of cooperative members which was projected to be 20 at the finish of the project. Ten farms are currently

members of the cooperative, with applications from two additional potential members. CADE has received dozens of calls from interested farmers and held a meeting and provided two workshops for potential members attended by more than 20 farms. However, many of those expressing interest either were not currently raising livestock or were not willing to commit the effort needed to build the cooperative. Rather they were looking for a new market for their products. Three farms asked for and received additional technical assistance with improving their pasture production systems.

It is clear from our experience seeking additional farmers to participate in the project that the farmers who are interested in pasture-raising livestock tend to be newer “next generation” farmers, often with off-farm income sources and limited time and or capital to devote to a farm enterprise. Our educational programs generally have not attracted long-time more “conventional” farmers. We feel that mentoring programs for new farmers need to be set up to help those entering farming learn the methods necessary to produce high-quality meats on pasture.

The following report summarizes the outcomes and the deliverables of the project. Separate published reports for Production and Marketing and On-Farm Slaughtering are also available.

### **Technology Transfer/Commercialization**

The Meadow Raised Meats project has been covered in the Country Folks, NYPA newsletter, Daily Star, and the Watershed Agricultural Council newsletter. The Production/Marketing Manual and On-farm Slaughtering Manuals will be distributed to farms expressing interest in pastured meat production and On-Farm Meat Processing.

The following table displays the energy input cost data from the survey of farmers participating in the NYSERDA project. The table compares the energy inputs of grass-based versus conventional confinement by animal. The energy inputs have been converted to BTUs for presentation comparisons.

The energy input study indicated that in all cases pasture intensive production was significantly more energy efficient than conventional confinement. The values for beef are weighted towards the input costs for brood cows in support of veal production thus the values for beef raised on pasture for meat would be significantly less than the figures in the table.

As the following table indicates, energy savings of grass-based production compared to convention methods is:

- 20% for beef
- 89% for veal
- 62% for chicken
- 88% for lambs and goats.

This demonstrates the significant energy saving of the grass-based meat production system.

### Energy Consumption per Animal

#### Meadow Raised

	Veal	Chickens	Lambs/Goats	Pigs	Beef
Total Grain (lbs.)	-	7	29	568	320
Btu per Pound	895	895	895	895	895
Total Btus	-	6,310	25,979	508,214	286,390
Total Hay (lbs.)	133	-	324	-	4,444
Btu per Pound	1,113	1,113	1,113	1,113	1,113
Total Btus	148,333	-	359,926	-	4,944,444
Fuel Consumption	1.41	0.01	0.16	0.41	-
Btu Per Gallon	140,000	140,000	140,000	140,000	140,000
Total Btus	196,809	1,312	21,868	56,856	-
Total Btus Per Animal	345,142	7,622	407,773	565,069	5,230,834
Btus per lbs. Dressed Weight	1,381	2,033	6,911	2,923	1,162

#### Conventional

Gallons of Oil Per Animal	23.30	0.14	25.03	26.16	46.60
Total Btus per Animal	3,262,000	19,883	3,504,320	3,661,724	6,524,000
<b>Energy Savings</b>	2,916,858	12,261	3,096,547	3,096,655	1,293,166
	89%	62%	88%	85%	20%

Snider, T. And Graboski, M. Energy and Oil Consumption in Beef Production. National Corn Growers Association. April 2002.  
Energy Use in Forage Production. Agromedia, Canada.

\* Includes feed, pasture, fuel, fertilizer, pesticides, utilities, etc.

Meadow Raised has a logo, sales brochure and price list. They also have a weekly “Fresh Meats Fax” which goes out to over 50 chefs and stores in NYS. In addition, Meadow Raised labeling conforms to all current USDA regulations

### Development & Production

Two surveys of the Meadow Raised members tracking their production methods and energy inputs were completed. The surveys gave valuable information on the characteristics of farms participating and showed compelling reasons why pasture intensive farming using Management Intensive Grazing [MIG] techniques is growing in the United States.

The Meadow Raised farms have extremely low inputs into their meat operations with the exception of labor. Our region is conducive to MIG meat production as evidenced by not one

farm among the cooperative members conditioning (planting, tilling, liming, etc.) their pasture prior to production. The economic benefits are outlined on page nine of this report.

Initially, we tried to develop a record-keeping mechanism for all farmers to use, but because each farm used different software or kept books by hand, we resorted to letting each farm keep records by their own methods. We simply let them know what data they would need to be able to access at the end of the year, including feed, fuel & electric costs, labor energy, and capital expenditures. The Meadow Raised farms have developed to the point where they have all this information readily accessible.

After the first year of veal production, the farmers settled on two methods which produced suitable carcass size and quality. The first raises calves on milk-replacer until weaning when the calves are then fed a diet of grass and some grain. The second method uses nurse cows to feed the calves on pasture until they reach slaughter weight. The second method requires more inputs because of the feed necessary to support a cow throughout the year, but results in a slightly better carcass quality and meat tenderness.

All animals (with the exception of poultry and venison) are killed in USDA slaughterhouses according to the USDA Humane Act. The meat is then processed according to HACCP guidelines. The farmers are beginning to work out a common standard for packaging meat to be sold into stores. Meat sold at farmers' markets or direct from the farm may be packaged in cryovac bags, tray-wrapped, or paper-wrapped. Meat sold to restaurants is cut and shipped fresh. As the group moves toward selling into more stores, they are working to develop standard cryovac packaging and labeling.

The farmers attended several conferences and sponsored five farm tours and three all day information sessions at member farms.

#### Conferences for farmers:

1. Grasstravaganza, Syracuse NY. 80 attendees for a two-day conference sponsored by RC&D and CADE. Topics included production and marketing of grass-fed meats & dairy products, as well as a keynote address about the health benefits of grass-fed products.
2. Farm Diversity Day. Organized by RC&D and sponsored in part by CADE, this annual conference provided thirty attendees with information about the business of raising livestock on pasture systems and marketing the meats. In both 2001 and 2002, keynote Allan Savory spoke about the important environmental benefits of a grass-based system.

#### Farm tours and informational meetings:

1. Meadow Raised farmers have begun hosting membership meetings at their farms to give members an opportunity to learn from one another. Meetings and farm tours were held at five farms.

2. Fencing day. In May of 2000 CADE sponsored a fencing workshop at a Meadow Raised member farm. Fifteen farmers and farm educators learned the basics and economics of constructing a high-tensile fence suitable for any class of livestock.
3. In September and October 2002 two farm tours and information sessions for potential new farmers were held at Stone & Thistle Farm and the Keith Morgan-Davie's farm for over 20 participants.

Meadow Raised produced three value-added products including:

1) Two varieties of a smoked veal & pork sausage, Chorizo and Andouille. Both are processed naturally with no artificial preservatives, and are packaged in a microwaveable tray appealing to consumers. The Andouille has been approved by the USDA and is in production. The Chorizo is still in development and should be available by the end of 2002. We have had some difficulty in marketing the veal based sausage in specialty retail stores due to the generally negative publicity about conventional confinement production of veal calves.

2) Nitrate-free veal bacon is being made by a smokehouse in Bridgewater, NY. The target market for this is the health-conscious consumer who wants to eat lower fat, nitrate free bacon. The process has been approved by the USDA. When a sufficient market is developed, this product will return an additional \$80 per animal to the farmer – a significant added profit!

3) A soup stock, made from beef bones, is still in development. Every beef cow processed and sold by the Meadow Raised farmers' yield more than 80 lbs. of bones. These build up rather quickly in the freezer. A chef is working with us to develop a recipe and packaging (for the freezer) of a soup stock made with the bones. This product does not require USDA approval as it is not considered a meat product. The stock will be primarily sold at farmers markets and direct from the farm.

### **Cooperative Organization**

The farmers meet quarterly, due to time constraints. An email list server was set up and is used actively by the members to communicate between meetings. The cooperative was incorporated in 2001 and continues to seek new members.

Two farmers have applied for and received no-interest loan funds in the amount of \$3,000 to purchase and produce livestock for the Meadow Raised cooperative. Both loans have been repaid in full.

The cooperative hired a salesperson for Meadow Raised sales in 2002. The salesperson is shared with other cooperatives and farmers to reduce costs.

### **Marketing**

A consumer and restaurant survey was conducted in the Fall of 2002 to determine customer preferences and needs for meat products. Following are the results of the survey.

## Consumer Survey

The typical consumer in our area eats five to six meals a week with meat. 83% know the difference between grass fed and conventional meat products. We ask the respondents to rank the importance of following qualities on a scale of 1 (do not agree) to 5 (strongly agree). Following are the rankings of these qualities:

		Rank in Importance
Hormone Free	4.52	3
Antibiotic Free	4.38	5
Naturally Raised	4.34	6
Consistent Quality	4.85	1
Reasonably Priced	4.48	4
Pesticide Free	4.75	2

These results show consumers are more concerned about pesticides than antibiotics or how the animals are raised although they continue to believe that quality is most important.

We learned that 75% have served pastured meats at some time and of those who serve them have approximately two to three meals per week. 96% want to purchase meats that are free of pesticides, antibiotics, and hormones with 83% preferring cuts and 79% preferring fresh.

Another interesting result that tends to support the on-farm and farm market sales channel success is that 92% are willing to buy on a seasonal basis. These products are seen as specialty ad hoc items rather than staples.

The average price consumers are willing to pay for meadow meats are \$6.36/lb. for veal, \$4.31/lb. for beef, \$2.92/lb. for chicken, \$3.90/lb. for pork, \$7.00/lb. for lamb, and \$5.50/lb. for goat. However, only 15% of those willing to buy would buy pastured raised veal, 65% beef, 60% chicken, 44% pork, and 8% each for lamb and goat. Our local consumers are most interested in beef, chicken, and pork, which corresponds to the national trends in per capita consumption of meats. Lamb and goat sales are primarily for the custom processed ethnic markets.

While the prices are somewhat higher than conventional retail prices many consumers stated that specialty products like these should command prices per pound on par with fresh fish (\$8.00 - \$9.00 per lb.). Our experience is that most of our farmers are direct selling fresh cuts at significantly higher retail prices.

Distributors, specialty retailers, and chefs want “case-ready” meats – in other words already broken down into retail cuts. The Meadow Raised Cooperative has positioned itself as the ONLY northeast farm cooperative that offers customers retail cuts of meat with no minimum order. These customers want fast delivery to ensure the freshest meat. The cooperative has implemented a system to offer chefs fresh meat on a weekly basis. Individual consumers are also more interested in buying fresh cuts of meat. This leads us to believe that more consumer

education is needed on the benefits of frozen meats. This will be particularly helpful for unsold Meadow Raised production that is frozen for future sales and for sales in the winter.

### Tastings

The following tasting opportunities have been conducted:

- West Kortright Center Annual Dinner 2000, 2001 – over 100 people in attendance each year. Prepared Meadow Raised veal, goat, and beef.
- Family Farm Day at member farm Stone & Thistle 2000, 2001 (will be held again 2002). Over 300 people have attended each year to tour a Meadow Raised farm and taste grass-fed meat samples.
- Benefit dinner for Regional Farm & Food Bank – prepared Meadow Raised veal September 2000.
- Benefit dinner for NYC Greenmarkets – prepared Meadow Raised veal August 2000.
- NYC Restaurant & Food Service Show – launched Meadow Raised Smoked Andouille Sausage with a tasting at the booth. Attendance at the show was underwritten by the Watershed Agricultural Council through an Appalachian Regional Commission grant. 45,000 food professionals in attendance.

### Markets

Meadow Raised Meats are sold at the following retail locations:

- Direct from the farm – all but 2 of the Meadow Raised farmers sell meat direct from the farm. This is the most profitable type of sale and represents the largest segment with 75% of total sales.
- At farmers markets. Meadow Raised farmers participate in markets in Oneonta, Cooperstown, Liberty, Andes, Hamilton, and Utica throughout the season.
- At the Syracuse Regional Market
- Natural and gourmet food stores in Oneonta, Delhi, Hamden, Red Hook, Boiceville, Millerton and Syracuse. With the sausage, we are beginning to seek distribution to a wider audience through supermarket and natural food distributor sales.

In 2001, Meadow Raised farmers sold over \$175,000 worth of product collectively. In 2000, the figure was about \$150,000. The projection for 2002 is over \$285,000 which is 63% growth over 2001.

### Delivery System

The delivery system has been a particularly difficult hurdle for Meadow Raised Meats, as our farms are spread out geographically and so are our customers. This is why direct sales from the farm and farm markets are much more profitable than other sales. However, we have developed

a distribution system that allows us to keep our delivery costs between 10-13% of gross sales to restaurants and stores.

Each week a fax of available product is sent out to a customer list of around 50 chefs and stores. Orders are taken and product is shipped direct from the slaughterhouse via UPS. A Meadow Raised farmer has found a source of cut-to-order Styrofoam lining for shipping boxes that allows us to keep the meat insulated for up to 48 hours during shipping. All customers within NY, CT, VT, NJ, and much of PA and MA receive the product within one day. Large orders are shipped via a refrigerated trucking service, which is much more expensive (at least \$60 per order).

Meat that is not ordered from the weekly fax sheet is cut, wrapped and frozen into retail cuts for direct sales from the farm and farmers markets, as well as for natural food stores, who are buying frozen meat.

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### Year 2003 Marketing Plan

#### *Objectives*

Increase individual farm sales by 20% (Total co-op sales of \$360,000)

Improve distribution channels for Restaurant Sales, Farm Market Sales, and Regional Market Sales

Focus on highest gross margin sales products (beef, chicken, pork, venison)

Establish new regional retail customers

#### *Strategies*

Support distribution to farm and regional markets

Emphasize sales of side, quarters to restaurant customers (higher margins, less by-product)

Establish local sales outlets in specialty retailers

Establish frozen cut meat sales channel for winter sales  
Improve consumer awareness of on-farm and farm market outlets

### *Implementation*

Point of Purchase marketing program with regional merchants (including frozen meats)  
Expand into new regional farmers markets  
Refocus co-op support for marketing on-farm and farm market sales  
Participate in Cross Promotion with Otsego County Tourism  
Continue veal sales to restaurants targeting Italian cuisine

## **Economic Benefits of Pastured Versus Conventional Confinement & Performance**

We know that we save a minimum of 20% on our energy and cost inputs. The farmers do not require large capital investments in equipment and structures. They are able to sell their product for as much or more as conventional farmers selling to auctions or packinghouses. Meadow Raised farmers have enjoyed at least 20% growth in annual sales over the duration of the project and some have doubled sales in two years.

### Benefits and Energy Savings (from surveys)

The average farm is 192 with 140 in pasture. The farms spend little effort in conditioning pasture with only one overspreading lime and one brush hogging. Thus, the capital equipment investment for machinery is limited. This is also evident in the average fuel use per farm of 25 gallons per year. Using only 175 gallons of fuel for nearly \$300,000 of gross sales is remarkable. Pastured production requires minimal manure management which is a substantial savings in fuel and labor costs especially for the large ruminants.

Most farms herd on foot with one farm using horses. The survey did not identify the energy use for equine labor. The average farm has two barns of which one has electricity. No barns have heat which is customary for livestock operations. Several small ruminant producers only use rudimentary three-sided structures for winter protection although at birth time a full enclosure is preferred. Again the capital costs for buildings are sunk costs with existing structures being the predominant ones used. Essentially the farmers are using older underutilized or fallow buildings for the pastured production. This is also true for the pastures. 92% of the terrain is hilly which is more conducive to pasture than crop farming.

The following table depicts the farm profit per animal for convention production versus pastured production. The information is for comparison and does not reflect labor or overhead costs for pastured production which was not formally tabulated. Because on-farm and farm market sales are at retail prices, the actual value per animal to the farmers for those sales are significantly higher than for feeder or feed lot producers. Potential pastured farmers can apply the values in the table to their expected labor and overhead to see if pastured production will be profitable.

**Gross Profit Comparisons of Pastured Versus Conventional Production**

	<b>Conventional</b>			<b>Pastured</b>			
	Gross Sales per Animal Live Weight	Cost Per Animal	Net Return to Farm per Animal	Gross Sales per Animal Hanging Weight	Cost Per Animal	Return to Farm Before Labor and Overhead per Animal	Difference per Animal
Beef	854.75	832.52	22.23	900.00	350.00	550.00	527.77
Chicken	2.90	2.73	0.17	6.94	5.23	1.71	1.54
Pork	80.00	93.20	(13.20)	260.00	150.00	110.00	123.20
Veal	500.00	375.00	125.00	500.00	250.00	250.00	125.00
Lamb	102.70	97.00	5.70	168.00	40.00	128.00	122.30

Source Pastured - Meadow Raised Surveys  
 USDA Economic Research Service, October 2002

The Meadow Raised Meats farmers have very low input costs which are reflected in the high returns before labor and overhead.

32% of water sources are streams, 61% ponds, and 7% water stations. Ruminants are on pasture an average of 204 days, on pasture with supplemental hay 62 days and on purchased hay 92 days. They are fed supplemental grain for 154 days although this value is somewhat weighted towards brood cow maintenance.

The average farm uses 1543 kWh of electricity per year at a cost of \$108. Barn and outdoor lighting account for \$80 and fencing for the balance. The mean distance to slaughter is 47 miles with the average farm making 40 trips per year. The survey did not identify the fuel cost for these trips but an average of 15 mile per gallon these trips would add 127 gallons of gasoline to the energy consumption.

**Conclusion**

The *Pastured Meats Initiative* and *On-Farm Meat Processing Study* have both been successful in demonstrating the viability of local farm ventures, which are low input in energy usage and capital investment. These projects represent excellent potential for profitability of farm ventures.