

Arctic Development
Library

***Product Development & Test Marketing
Project (wildlife Meat Marketing)
Type of Study: Analysis/review
Author: Renewable Resource Economic
Development Project
Catalogue Number: 2-3-39***

Sector: Arctic Foods

2-3-39

Analysis/Review

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DEVELOPMENT
PROJECT

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DEC 01 1986

Field Services

November 17, 1986

Mr. Len Colosimo
Supervisor, Resource Development
Department of Renewable Resources
Government of Northwest Territories
Yellowknife, N.W. T.
XIA 2L9

Dear Mr. Colosimo:

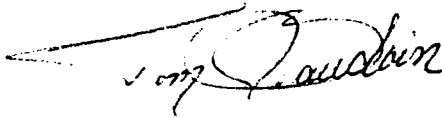
Re: Project #5456-163-027 Product Development & Test Marketing

Further to our telephone conversation of October 23, 1986 regarding your request for additional information on the above I am enclosing a more detailed report -on the project. I felt I could respond to your many questions more effectively in this manner as there are some salient issues not addressed by your queries.

Please note that I have also revised the statement of expenditures to include some project expenses that had previously been overlooked. The revised expenditures now amount to \$79,839.88 which is \$760.12 less than the approved budget of \$80,600.00.

Please call me if you require any additional information. Final payment \$37,839.88 should be sent to Ms. Sally Monteith at the above noted address.

Sincerely,



Tom Beaudoin

Attachments

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STATEMENT OF EXPENDITURES
FOR
PRODUCT DEVELOPMENT AND TEST MARKETING PROJECT

DECO 1 1988

FITZGERALD

A. Equipment and Supplies		
1. Vac-U-Pak	\$10,895.31	
2. Supplies	9,086.41	
3. Packaging	4,293.68	
4. Meat	<u>8,414.70</u>	
		\$32,690.10
B. Meat Processing Equip.		\$29,604.58
C. Fees & Expenses		
1. Meat Processor	\$7,525.00	
2. Smoking Kiln Consultant	1,780.20	
3. Project-Director/Administration	<u>8,240.00</u>	
		<u>\$17,545.20</u>
		<u>\$79,839.88</u>
TOTAL EXPENDITURES	\$79,839.88	
LESS: ADVANCE	<u>42,000.00</u>	
AMOUNT OWING	<u>\$37,839.88</u>	

REPORT ON
PRODUCT DEVELOPMENT AND TEST MARKETING PROJECT

PREPARED BY
RENEWABLE RESOURCE ECONOMIC DEVELOPMENT PROJECT

December 20, 1986

TABLE OF CONTENTS

1. INTRODUCTION
2. METHODOLOGY
3. PRODUCT DEVELOPMENT
4. COST OF PRODUCTION
5. PRESENT MARKET
 - 5.1 Market Constraints
 - 5.2 Sales
6. TEST MARKETING
7. FUTURE MARKET POTENTIAL

1.0 INTRODUCTION

The Inuvialuit Development Corporation (IDC) initiated this project in response to a growing concern over the lack of demand for conventional cuts of fresh meat from the front portions of muskox and caribou which represents more than one-half the total carcass weight. The high proportion of bone to meat in the front coupled with the relatively small size of the carcass (50 to 80 kg) would only produce a sub-standard cut of meat. Some of the meat was sold as shoulder roasts, rib and blade steaks as well as boneless rolled shoulder roasts, stew meat and g round meat however the supply far exceeded demand and a lot of the meat ended up being sold as dog food. An effort was also made, prior to this project, at sausage making but, lacking expertise and the proper equipment, the results were not that favorable.

The equipment purchased through this project combined with the expertise we were able to employ has allowed us to produce an array of processed meats that are both new and exciting. Due to legislative constraints, however, we were unable to export any of these products from the Northwest Territories. This affected our ability to fully learn their market acceptance. The selling price and volume of sales therefore are based solely on territorial sales which in our view is only an indicator of the eventual marketability.

2.0 METHODOLOGY

The initial phase of the project involved the purchase of a vacuum packaging machine, packaging supplies, muskox and caribou meat and later several pieces of sausage making equipment including an emulsifier, stuffer, pickling machine and clipper. Additionally, a variety of sausage casings both natural and synthetic were acquired as well as an assortment of spices, preservatives and other commercially prepared sausage additives. Except for the vac-u-pak machine, the kind of equipment and sausage making supplies which were purchased was based upon the advise of an expert from Germany who travel led to Inuvik at his own expense.

Prior to executing the project an expert on smoking kilns, Mr. Dave I redale of Fisheries and Oceans, was also invited to Inuvik to provide instruction on the proper use and maintenance of the kiln since several types of processed meats require smoking, cooking and drying. In addition, a Hungarian-educated sausage maker was hired under a one month contract to work along side the manager of Ulu Foods, Paul Marks, who is a certified German sausage maker at developing the various products.

In order to solicit comments on the products and determine their general market acceptance, samples were sent out to various wholesale clients throughout the Territories and offered to customers at the store in Inuvik. Based upon their response regarding size, taste, texture, etc. the items were modified, where required, to appeal to
- their tastes.

3.0 PRODUCT DEVELOPMENT

A unique characteristic of game meat, as opposed to beef and pork, is its low fat content which makes it ideally suited for products such as drymeat and jerky. The long oval shaped muscles of the neck and shoulders proved to be the best meat of the front for making these items which are made by cutting the muscles into thin slices along the grain. The sliced meat is then placed in a pickling solution after which it is dried and, in the case of jerky, smoked. About seventy percent of the weight is lost due to the drying.

On the other hand, the leanness of the meat meant more pork fat - pork is an essential ingredient in all sausages - had to added to the sausage emulsion to compensate for this deficiency. Initially, we had hoped to use game fat trimmed from the loins but, unlike pork fat, it would not bind with the emulsified meat. As a general rule, the amount of pork added was equal to the amount of lean meat. For example, a thirty kilogram emulsion would be made up of equal amounts by weight of fat, lean meat and ice water. The amount of water varied to some extent with the size of sausage being produced as the smaller diameter sausages require a greater viscosity. Due to the smoking, cooling and drying involved in the processing, approximately fifty per cent of the total (emulsion) weight is lost in the process.

Table 1 outlines the products made from an emulsion using pork as a major ingredient while Table 2 indicates the products made solely from - lean caribou and muskox meat. As the table indicates there are four

approaches to curing the meats, namely: smoking, smoking and cooking, drying and, smoking and drying. In every instance that smoking is required, it is done prior to cooking or drying in order to get maximum penetration of the smoke. The meat patties and snack sticks are formed by the sausage stuffer without casings while the jerky and drymeat are made from thinly sliced meat.

TABLE 1
PRODUCTS MADE FROM AN EMULSION WITH PORK ADDED

ITEM	CURING	TYPE OF CASING	UNIT WT(gm)	SIZE(cm)
Wieners	smoked & cooked	sheep	80	1 X 1 5
Breakfast sausage	smoked & cooked	sheep	80	1 x 8
Smoked sausage	smoked	naturin	100	3 X 3 0
Bologna	smoked & cooked	synthetic	900	9 X 3 0
Pepperoni (medium)	smoked & cooked	collagen	50	1 X 1 2
Hot Rods	smoked & cooked	collagen	900	1 X 1 2
Kolbassa (Coil)	smoked & cooked	naturin	100	6 x 3 0
Barbacue sausage	smoked	pork	100	3 X 1 0
Meat patties	smoked & cooked	N /A	100	1 X 1 0

TABLE 2

PRODUCTS MADE SOLELY FROM LEAN MEAT

ITEM	CURING	UNIT WT(gm)	SIZE(cm)
Snack sticks	smoking & drying	50	5 x 1.2
Dry meat	drying	50 to 100	N/A
Jerky	drying	70 to 100	N/A

The type of casing used is dependent upon the kind of sausage, and conforms to the standard accepted practices. Except for the synthetic bologna casing, they are all edible. The collagen and natural casings, for example, are manufactured from natural products. Since the drymeat and jerky are made from portions of meat sliced by hand, there is no standard size and the weight varies accordingly.

Approximately 120 kg of raw caribou meat and 400 kg of muskox meat valued at \$8000.00 were used in the project.

4.0 COST OF PRODUCTION

The cost of production is broken down into two categories: those products made from an emulsion with pork as an additive and; those made solely from lean caribou and muskox meat. In regards to the former, the cost to produce a unit of sausage, regardless of size or type, is essentially the same, as the ratio of lean meat to pork and time and effort involved in the preparation, are virtually the same for each item. Furthermore, the weight loss for all the sausages between the raw (emulsion) and finished product, as well, are similar. Therefore, based upon labour costs, depreciation (calculated by the diminishing balance method at a rate of 20%), cost of goods (lean meat & pork), supplies (casings, spices, etc.) the average cost to produce a kilogram of sausage is estimated at \$6.43. Broken down it reads as follows:

Meat (caribou /muskox)@ \$4.80/kilo.	\$4.80
Pork (fat) @ \$1 .43/kilo.	\$1.43
Other (dep. , operating costs, etc.)	<u>.20</u>
	\$6.43/kg.

On the other hand, the production cost for the items made strictly from lean meat (Table 2) is calculated at \$19.40 per kilogram. The greater cost of production is due to the significant weight loss (75%) as a result of the drying. It requires four kilograms of lean meat to produce one kilogram of dry meat, yet, the other production costs are the relatively the same.

Table 3 indicates the retail selling price for each of the products. Wholesale prices are based on the total value of the order. An order

of more than \$500.00 but less than \$1000.00 receives a 10% discount while an order over \$1000.00 receives a 15% discount.

TABLE 3

RETAIL SELLING PRICES BY PRODUCT

ITEM	SELLING PRICE (\$/kg)
Weiners	\$7.99
Breakfast sausages	12.95
Smoked sausages	14.99
Bologna	6.99
Pepperoni (medium)	19.99
Hot Rods	19.99
Kolbassa (coil)	6.75
Barbecue sausage	11.99
Meat patties	5.39
Snack sticks	18.90
Dry meat	39.90
Jerky	39.90

The selling price for each item was based upon the cost of production and demand, and also by comparison to similar conventional meat products. They have been adjusted on several occasions to promote sales on individual items and to turn over inventory.

5.0 PRESENT MARKET

5.1 Market Constraints

The present market is confined to the Northwest Territories because caribou and muskox meat are not federally inspected and because the Ulu Foods store, where the project was undertaken, is not certified under the Meat Inspection Act. The only meat that was exported was by non-residents who purchased meat at Ulu Foods and through the issuance of an export permit were able to remove the meat from the territory. The existing market therefore is comprised of retail sales in Inuvik and wholesales to institutions (hospitals, etc.) and food retailers (restaurants, dining areas, etc.) primarily in Inuvik and Yellowknife. The high cost of transportation and the lack of direct air service to other municipalities also has had a negative effect on sales to potential customers in other municipalities.

5.2 Sales

For the four month period, May 1, 1986 to August 31, 1986, the total sales for all types of processed muskox and caribou meat were as follows:

Caribou	\$13,592.70
Muskox	<u>981.79</u>
	\$14,592.49

The substantial difference in sales between caribou and muskox is due primarily to the fact that within the Northwest Territories people will purchase caribou as a substitute for conventional meats. Muskox, on the other hand, is usually only purchased as a novelty by consumers, or for special events by the hotels and restaurants.

6.0 TEST MARKETING

Since Ulu Foods is presently the only commercial distributor of muskox and caribou in the Northwest Territories, we decided to test the market acceptance of our products by providing free samples in their Inuvik store for Ulu Foods' their wholesale clients and customers. Moreover, current legislative and transportation constraints did not warrant a larger scale marketing effort. The freight costs associated with shipping the samples to wholesale clients were born by the clients, as those costs were generally included with their other meat orders.

On the basis of their comments regarding size, taste, texture, etc. , and even more importantly from their subsequent purchases, the following items were best received: On the wholesale level, caribou sausages and meat patties were the most popular, while caribou drymeat and muskox and caribou jerky were favoured by retail customers. The latter case was due, in our estimation, to the large native population in Inuvik who traditionally eat meat prepared in somewhat the same fashion.

7.0 FUTURE MARKET POTENTIAL

In light of the high costs of production, expensive air transportation costs to regional markets, and limited commercial game quotas and small population of the territories, it would appear that the greatest potential is in southern established specialty markets. In order to access this market however, the caribou and muskox will have to be slaughtered in keeping with Agriculture Canada standards in addition, a certified meat processing plant should be situated in Inuvik as it has road access to southern markets. At the same time, it may be necessary to consider freight subsidies between Inuvik and the settlements that harvest the animals, as well as between Inuvik and southern markets. Freight costs presently account for approximately one-third to one-half the overall harvesting expense in the north while southern based game ranches have direct access to meat processing plants and markets.

The increased awareness and availability of game meat may however dramatically increase the value of our muskox and caribou products because they are a product unique to the Arctic.