

American University of Armenia
College of Business and Management

FEASIBILITY ANALYSIS

MEAT PROCESSING FACILITY IN MARTUNI

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TABLE OF CONTENTS

	Pages
EXECUTIVE SUMMARY	
CHAPTERS:	
I. INTRODUCTION	1
1. Background	1
2. Preliminary Assumptions	1
II. CONSUMER DEMAND ANALYSIS	3
III. SUPPLY ANALYSIS	7
3. Livestock Supply	7
4. Livestock Prices	8
5. Cost Structure of the Operations	9
↳ Start-up Capital Requirements	9
IV. REVENUES, EXPENSES, AND RETURN ON INVESTMENT	11
6. Revenues	11
7. Expenses	11
↳ Wages and Salaries	11
↳ Transportation	12
↳ Taxes	13
8. Pro Forma Income Statement	14
9. Break-Even Analysis	14
10. Analysis of Return on Investment and Payback Period	15
V. CONCLUSIONS	16
APPENDIXES	

EXECUTIVE SUMMARY

The present paper is an attempt to study the economic feasibility of the proposal made by a group of villagers in Martuni region to establish a meat processing operation and start the production of sausages using local inputs. The questions put forth by the group in their attempt to assess the feasibility of this proposal were:

- Is there sufficient demand for sausages in the local market area (Martuni region) to justify the establishment of the operation?
 - Is there sufficient supply of animals in the region to support the proposed level of output of 218,400 kg sausages (on average) annually?
 - Can the facility operate at a profit with the current market prices for the inputs (beef and pork), the output (sausages), proposed level of output, and the investment necessary to establish the operation?
 - Will the profit earned from the operation of the proposed facility justify the investment?
- These questions will be addressed in full in the course of our discussion in the main body of the study.

For now, the following should be noted:

- An analysis of the population and consumption patterns for Martuni region, the primary market area of the proposed facility, called for the estimate of a 720,700 kg sausage consumption annually. As there is no meat processing facility in the region, this demand is filled with the imports from other regions, mainly from Yerevan. Projections of future demand indicate a further increase in the consumption of sausage products (the reasons for these will be covered in the main part of our discussion). Thus, it seems logical to assume that there will be ample demand for the output of the facility operating at the level of production of 131,040 kg luncheon meat and 87,360 kg smoked sausages.
- The main part of the land in the region is not suitable for planting activities because of the specifics of the local landscape (hills) and climate (very cold for the most part of the year). As for feedlot operations, they can be successfully sustained under these conditions. This makes it possible to support large numbers of hogs and especially cattle for individual villagers. At present, there are 30,000 cattle and 3,000 hogs in the Martuni region. According to the estimates, by the end of the year, these figures will be 60,000 and 15,000 respectively. (It should be noted that with the establishment of the facility and the opportunity to have a guaranteed customer for the farmers' production, the supply of the animal inputs will increase). Thus, the conclusion is - there is adequate inventory of cattle and hogs in the region to support the operation of the facility.
- Annual revenues from the sales of the two types of sausages (luncheon meat and smoked) will total \$567,840. Cost of sales will be \$443,352. Annual expenses for this level

of output are estimated as \$108,212. Thus, the facility will operate at an annual average net profit of \$11,393 after taxes.

- Required capital of \$19,208 for operation will generate revenue of \$567,840 with the rate of return¹ equal 59 percent on average. Payback period is estimated to be equal to 15 months of operation. Using the non-time value technique to assess the profitability of the venture, it is concluded that the proposed venture is economically feasible.

¹ The rate of return figure is calculated by taking the ratio of net income after taxes to initial capital requirements ($100 * [\$11,393 / \$19,208] = 59\%$).

CHAPTER I

INTRODUCTION

1. Background

A group of community members from Martuni region has recently proposed an idea to establish a meat processing operation and start the production of sausages using local inputs. The arguments behind this proposal are:

- Existence of a huge, largely unfilled demand for sausage-type products in the region – while sausages are one of the most heavily consumed food items in the region, they are not produced locally. Instead, they are imported from other regions, most of these items are sent Yerevan. Imports are not delivered on a wholesale basis thus hurting the quality of the delivered products and raising the prices.
- Availability of sufficient raw production inputs (cows and hogs) to allow local processing – huge livestock inventory presently slaughtered and carried to the outside markets, mainly Yerevan; availability of feedlots for supporting still larger numbers of livestock.
- Benefits to the local community from establishing the operation – increased employment; greater incentives to engage in agricultural activity; better standard of living.

Our group was contacted and given the task of assessing the economic feasibility of the project – sausage making operation to be located in the largest village of Martuni region – Vardenik. The study focused on the monetary feasibility of such an operation. This involved a preliminary assessment of markets for outputs and inputs of the proposed operation, projections of revenues and operating costs, and analysis of the anticipated return on investment.

2. Preliminary Assumptions

Several basic assumptions were made in the course of the work. They are as follows:

1. The proposed plant would concentrate on the market area represented by Gegharckunick area (regions of Martuni, Vardenis, Karmir, Sevan, Kamo). The primary market for the facility will be Martuni region for the early periods of operating. Once the operations are established the facility can expand a scope of its production and supply for the whole Gegharckunick area. The market potential

existing in this region and the anticipated size of the operation warrant such an assumption as will be shown in the report.

2. A second assumption dealt with the degree of vertical integration of the facility. It was assumed that no livestock maintenance will take place in the facility. This means that carcasses of animals are received by the facility and processed. This assumption is based on information provided by the initiators of the project and is used in calculating the costs connected with the operations.
3. The plant would operate at a predetermined level and sell its entire output through a retail network (restaurants, grocery stores). The level of output will be determined on the basis of initially negotiated contracts with prospective buyers. A pilot production run will be accomplished to insure product recognition and initial orders.
4. Initially, the acquired basic equipment would not be utilized at full capacity due to low product recognition and low level of initial demand. Also, the utilization of this equipment may vary considerably due to seasonal variations in the availability of cattle and hogs (in autumn the slaughter rates of animals are higher than those in other seasons) and changes in the market for the products of the firm (in summer the demand is much higher than in other seasons).

Other assumptions are noted in the report where they are needed for facilitating the understanding of the analysis.

CHAPTER II

CONSUMER DEMAND ANALYSIS

Consumer demand estimation is one of the critical steps to be accomplished in estimating the economic feasibility of any operation. For the consumer demand estimation to be realistic, it is necessary to adequately assess the market potential of the area on which the proposed facility will concentrate.¹ The following tables summarize estimated market potential for luncheon meat and smoked sausages in Gegharckounick area.

Table 1.
Estimated Market Area Luncheon Meat Consumption (Annual)²

Gegharckounick Area	Population (000)	Total Luncheon Meat Consumption (kg) (1.125 kg. per capita on average ³)
Martuni	88.7	99,840
Vardenik	46.6	53,040
Karmir	19.7	21,840
Sevan	49.9	56,160
Kamo	69.6	81,120
Total	274,5	312,000

¹ Market potential is defined as the maximum capacity of a market to purchase a specific type of offering in a specific time period.

² Department of Statistics, Quarterly Report, 1997

³ Ibid.

Table 2.

Estimated Market Area Smoked Sausages Consumption (Annual)¹

Gegharckounick Area	Population (000)	Total Smoked Sausage Consumption (kg) (0.75 kg. per capita on average in the region²)
Martuni	88.7	66,560
Vardenik	46.6	35,360
Karmir	19.7	14,560
Sevan	49.9	37,440
Kamo	69.6	54,080
Total	274,5	208,000

Thus, the total sausage consumption in the market area is 520,000 kg which represents considerable market potential. These calculations are based on 1996 population and sausage consumption estimates.³ It should be noted that this is a conservative estimate of market potential. By the time the factory begins operations, there may be an increase in both population and average consumption of sausages.

Given all the estimates, an attempt was made to assess the market share the firm's products will capture. To accomplish this task, a survey research was conducted applying the following two techniques:

a) Mall intercept interviewing - randomly selected 180 shoppers were questioned to find out their preferences of the "Moscow" brand to be produced relative to competing ones. The survey showed that consumers are well aware of the brand which is currently available in the region in negligent quantities and at high prices (AMD 3,500 or \$7 for smoked sausage and AMD 2,500 or \$5 for luncheon meat). Most of the surveyed consumers were strongly inclined to buy this brand if available in the market with reasonable prices (the projected price of the product - the same "Moscow" brand - produced by the meat processing facility is going to be AMD 1,750 or \$3.5 for the smoked sausage and AMD 1,000 or \$2 for luncheon meat). Given the awareness of

¹ Department of Statistics, Quarterly Report, 1997

² Ibid.

³ Ibid.

potential consumers in the brand and competitive prices for rapid penetration strategy the forecasted market shares were determined to vary in the range of 30 - 60% of total sausage market in the region. These figures stem from the estimated capacity with a maximum level of production covering around 60% of potential market.

b) Executive interviewing - sales managers of "Yerevan" hotel, "Tsovinar" and "Krunk" restaurants located in Gegharckunick region, as well as retailers of the three largest retail stores located in the main street of Martuni town were questioned to identify the factors having greatest impact on their purchasing decision. The results obtained during the interviews confirmed the ones already obtained from mall intercept survey. It was found out that the quality is the primary determinant in their purchasing decision. Provided the meat-processing facility sustains the exact recipe of a well-known "Moscow" brand for luncheon meat and smoked sausages, these products will be accepted by the retail segment of the region.

Based on obtained data judgemental approach is applied and as a result of it a 42% of market share was designated to be captured on average. The other two scenarios - high and low - were assigned 60% and 30% market share respectively. The results thus obtained are summarized in Tables 3 and 4.

Table 3.

Consumption Alternative Annual Forecast for Luncheon Meat

Facts and Assumptions	Low	Most Likely	High
Total Sausage Consumption (kg)	312,000	312,000	312,000
Targeted Market Share	30%	42%	60%
Respective Volume of Consumption (kg)	93,600	131,040	187,200

Table 4.

Consumption Alternative Annual Forecast for Smoked Sausages

Facts and Assumptions	Low	Most Likely	High
Total Sausage Consumption (kg)	208,000	208,000	208,000
Targeted Market Share	30%	42%	60%
Respective Volume of Consumption (kg)	62,400	87,360	124,800

The prices per kilogram of luncheon meat and smoked sausages are going to be \$2 and \$3.5 respectively. Thus, the following alternative forecasts for sales revenue are obtained:

Luncheon Meat

Low Forecast	\$187,200
Most Likely	\$262,080
High Forecast	\$374,400

Smoked sausages

Low Forecast	\$218,400
Most Likely	\$305,760
High Forecast	\$436,800

These figures are given in the pro forma income statement as the sales revenue figures for three alternative scenarios.

CHAPTER III SUPPLY ANALYSIS

3. Livestock Supply

For the year 1997, the inventory of cattle and hogs in Martuni region are presented in Tables 5 and 6 (currently available and projected respectively)¹.

Table 5.
Current Livestock Supply, Martuni Region, Spring 1997

Livestock	Inventory	Slaughter Rate per Year
Cattle	30,000	7,000
Hogs	3,000	1,000

Table 6.
Projected Livestock Supply, Martuni Region, Autumn 1997

Livestock	Inventory	Slaughter Rate per Year
Cattle	60,000	15,000
Hogs	15,000	5,000

Table 7 depicts the projected consumption volumes of luncheon meat and smoked sausages, necessary inputs (beef and pork) for these volumes, and their beef cow and hog equivalents.

¹ The numbers were obtained during an interview with the Head of Martuni Regional Livestock Inspection, Martuni, May, 1997

Table 7.
Estimated Market Area Sausage Consumption

Consumption Volume (smoked and luncheon meat)^a	Total Inputs (Beef) (kg)	Total Inputs (Pork) (kg)	Beef Cow^b Equivalent (heads)	Hog^c Equivalent (heads)
218,400	171,662	42,806	750	612

a. See Tables 3 and 4.

b. Equivalent number of beef cows in thousands was computed using a 60 percent conversion factor and an average liveweight of 400 kilograms.

c. Equivalent number of hogs in thousands was computed using a 70 percent conversion factor and an average liveweight of 100 kilograms.

Thus, the equivalent of 750 beef cows and 612 hogs is needed to satisfy consumption needs in the market area and at the same time support the anticipated level of production. The slaughter rates are - 7,000 cows and 1,000 hogs in spring 1997. For autumn when the operations of the facility will be fully established, the respective figures are 15,000 and 5,000.

In view of foregoing, it can be concluded that the considerable excess of animal slaughter over consumption of sausages (in beef cow and hog equivalents) in the market area ensures the availability of adequate supplies for establishing the proposed operation in Gegharckounick area.

4. Livestock Prices

One of the major considerations in favor of starting to produce sausages locally is the low cost of animal inputs in Gegharckounick. Table 8 below presents the retail price per kilogram of beef in 9 areas of Armenia.¹

¹ Department of Statistics, Quarterly Report, 1997

Taking into consideration the fact that the facility will obtain animal inputs at wholesale prices which are usually $16 \pm 3\%$ of the retail price and the retail price of these inputs in the region is one of the lowest in Armenia, the price advantage for animal inputs for the proposed production becomes obvious.

Table 8.
Average Retail Prices For Meat in Armenia

Prices of meat	Dram
Gyumri	1,200
Vanadzor	1,000
Vagharshapat	1,100
Tallin	1,000
Dilijan	1,000
Hrazdan	1,000
Gegharckounick	900
Yeghegnadzor	1,000
Kapan	900

5. Cost Structure of the Operations

The following costs have been identified by the group as having critical importance for the analysis of the profitability of the proposed operation:

- Land
- Building
- Start-up Capital Requirements

Note: land and building costs are not included in the analysis of the cost structure of the facility, the reason being that they are covered by the contribution from the local community.

Start-up Capital Requirements

The following accounts constitute the start-up capital for the proposed facility:

- Equipment
- Start-up inventory
- Other costs.

An itemized listing and current prices of equipment necessary to outfit the proposed facility are given below:

Equipment	Price (in US dollars)
1. Mincer	1,200
2. Cutter	1,600
3. Injector	1,500
4. Mixing Tank	1,200
5. Cooking Tank	1,200
6. Smoking Camera (2 units)	2,000 (x 2)
7. Freezing Camera	3,000
8. Refrigerator	1,200
Total	14,900

Thus, the equipment portion of the start-up capital amounts to \$14,900.

It is assumed that equipment listed and the prices quoted are in competition with industry rates and that the equipment is adequate for the type of operation and the proposed level of output of the facility.

Transportation of equipment to the facility site and installation are not included in the equipment cost figure. For the purpose of assessing the transportation and installation costs of the equipment, we have taken the common industry approach which is to assume that transportation is 5 percent and the installation is 17 percent of the price of the equipment. Thus, the transportation of the equipment costs \$745 and installation of equipment costs \$2,533. These figures have been accounted for in the other costs portion of the start-up capital requirements. As for the start-up inventory, according to our estimations it will cost \$1,030.

We calculate the amount of initial capital required for the start-up of the business by summing up the figures for the required equipment (\$14,900), transportation of the equipment (\$745), installation of the equipment (\$2,533) and estimated amount for start-up inventory (\$1,030). Thus, the final figure for required capital is \$19,208.

CHAPTER IV

REVENUES, EXPENSES, AND RETURN ON INVESTMENT

6. Revenues

The revenue derived from operations will come from the sales of luncheon meat and smoked sausages. Output of the facility will be sold primarily to big restaurants, hotels, and retail outlets. Table 3 shows the average sales revenues from the output of the operations.

Table 9
Annual Average Sales Revenues by Product Type

Product Type	Each Product Produced (Kilogram)	Sales Price per Kilogram	Total Revenues by Product Type
Luncheon Meat	131,040	\$2	\$ 262,080
Smoked Sausage	87,360	3.5	305,760
Total	218,400		567,840

7. Expenses

Three major categories of expenses to be incurred will be discussed in more detail:

- Wages and Salaries
- Transportation
- Taxes

Wages and Salaries

The personnel for the plant totals 11. Of this total 5 are production personnel. Their job titles, numbers employed along with wages earned are presented below:

Job Title	Number Employed	Monthly Wages (in US dollars)
1. Mixer	1	60
2. Smoker	1	50
3. Injector	2	50
4. Bonestripper	1	50
Total	5	260

Total production personnel monthly wages equal \$260 which is direct labor and is considered as a part of Cost of Goods Sold.¹

The administrative and maintenance personnel and their salaries are as follows:

Job Title	Number Employed	Monthly Salaries and Wages (in US dollars)
1. Warehouse manager	1	100
2. Sales manager	1	100
3. Driver	3	50
4. Maintenance worker	1	30
Total	6	480

Total administrative and maintenance personnel monthly wages and salaries equal \$480.

Total yearly wages and salaries for all personnel equal \$7,680.

Transportation

The main portion of the transportation expenses will be incurred in connection with the distribution of the final product – luncheon meat and smoked sausages to restaurants, hotels and retail stores. For enhancing the efficiency of the activities of the facility it was assumed that the latter will not be involved in delivering carcasses of input animals. This will be done by suppliers based on preliminary agreements.

¹ See Appendixes B and C

Three cars are at the disposal of the firm, each covering on average 120 km. daily consuming 12 liters of gasoline. As can be seen from the pro-forma income statement¹ the transportation costs will equal \$4,536 per year on average.

Taxes

Given the taxation system currently existing in Armenia, the following taxes have been accounted for in our calculations. They are presented in the order they appear on the income statement. The taxes are figured on an average basis.

① Property Tax

0.6% property tax will be due for the building, 0.2% – for the cars and equipment totaling to \$39 annually (the tax for the equipment is included in the cost of goods sold and equals \$30 per year)

② Other Taxes

This item represents several different taxes, encountered in the pro-forma income statement. They are as follows:

- *Tax on Salaries and Wages.* It equals 36% of the total amount of salaries and wages to be paid within a year (\$2,765 annually).
- *Municipal Service Tax* – amounts to the 30% of the product of the minimal salary in Armenia (\$2) and the square of the facility (100 m²), which is \$2,765 annually.
- *Value Added Tax.* VAT is equal to 16.67% of total sales and constitutes the bulk of the taxes to be paid by the firm. It totals \$ 94,659 per year.

③ Special Tax

It refers to the Tax for Road Exploitation and Repair and amounts to 0.4% of the net income figure before income tax (\$93 annually).

④ Income Tax

The amount of income tax is calculated based on the 20 or 30% provisions for income tax for net income before income tax smaller than \$10,000 annually and greater than \$10,000 respectively. The provision for income tax on average equals \$4,883 per annum.

¹ See Appendix A

8. Pro Forma Income Statement

The previous sections of this chapter set forth the results of the analysis of anticipated revenues and expenses for the proposed venture. These results have been used to develop the pro-forma income statements shown in Appendix A. The income before income taxes is calculated as follows: cost of sales - \$443,352 and expenses - \$108,212 are subtracted from the total sales revenue. Income taxes - \$4,883 - were then subtracted to arrive at the final figure for the net income. As can be seen from the pro-forma income statement, it was \$11,393.

9. Break-Even Analysis

In order to construct a break-even analysis the following estimates of fixed costs and variable costs per unit were obtained.

Table 10.
Cost Classification

Fixed Costs	Variable Costs
Salaries and wages	Cost of goods sold
Property tax	Transportation
Other taxes	
Depreciation	
Supplies	
Special tax	

$$\text{Breakeven point} = \frac{FC}{P - V}$$

where FC= Fixed Costs

P= Sales Price per Unit

V=Variable Cost per Unit

The result of the break-even point calculation is

	Per day:	Per year:
Smoked sausages	256 kg.	79,919 kg
Luncheon meat	350 kg	109,349 kg
Total	606 kg	189,268 kg

$$\frac{189,268}{700} = 270 \text{ days}$$

Given that the average daily output of the plant is to be 700 kg per day (280 kg. smoked sausages and 420 kg. luncheon meat), the above results show that the anticipated sales revenue will cover the fixed costs in 270 days of operation after this starting generate profits.

10. Analysis of Return on Investment and Payback Period

The return on investment (ROI) is defined as the ratio of net income and total investment required for the project. In the case of the proposed venture this would be equal to 59% on average. This figure has been obtained by using \$19,208 as the total capital requirements for the plant. This figure represents a sound level for ROI for the proposed venture.

The payback period is an estimate of the time it will take for the investment to pay for itself. In this study the payback period is calculated as the ratio of net investment and net annual cash flow benefits. Thus 15 months' average payback period was computed.

CHAPTER V CONCLUSION

Thus, we have completed the analysis of the economic feasibility of the proposal to establish a meat processing operation in Martuni based on the local supplies of livestock. What are the conclusions to be drawn from this investigation? Before addressing this question, we would like to make a comment concerning the applicability of the obtained results.

The present study was conducted within the framework of the assumptions stated in the earlier chapters. Thus, the conclusions reached are tenable only provided these assumptions hold. For example, it was assumed that the demand in the area for the firm's production will be on average 218,400 kg sausages annually. Any change in this amount and, hence, in the level of output, will cause fluctuations in the net income and other indicators of the business standing of the enterprise. Thus, the reader is cautioned for the inappropriate use of the finance of this particular study in different circumstances.

Based on the analysis conducted by the group the following can be stated with a reasonable level of confidence – the proposal is economically feasible in that it generates net income of \$2,297 annually even in the worst case scenario. Another important indicator of the feasibility of the proposal, namely, the return on investment of 59 percent on average implies that the business will be able to reinvest vastly in its future growth. This means that the establishment of the business is seen as realistic and feasible economically, as well as in view of the future development of the community.

* It is necessary to keep in mind that the investment is expected to be in the form of a grant so no outflows of capital in the form of repayments will occur.

**Pro Forma Income Statements
Year 1997**

	<u>Low</u>	<u>Average</u>	<u>High</u>	
	<u>Daily Produced</u>			
	<u>(500 kg.)</u>	<u>(700 kg.)</u>	<u>(1,000 kg.)</u>	
Cost per 1 kg. (smoked)	3.04	2.96	2.91	3.5
Cost per 1 kg. (Luncheon Meat)	1.42	1.41	1.39	2.00
Sales:				
Smoked Sausages (by price = \$3.5 per 1 kg.)	\$ 218,400	\$ 305,760	\$ 436,800	
Luncheon Meats (by price = \$2 per 1 kg.)	\$ 187,200	\$ 262,080	\$ 374,400	
Total Sales	\$ 405,600	\$ 567,840	\$ 811,200	
Cost of Sales:				
Smoked Sausages	\$ 189,696	\$ 258,586	\$ 363,168	
Luncheon Meat	\$ 132,912	\$ 184,766	\$ 260,208	
Total Cost of Sales	\$ 322,608	\$ 443,352	\$ 623,376	
Gross Margin	\$ 82,992	\$ 124,488	\$ 187,824	
Operating Expenses:				
Salaries and Wages	\$ 4,200	\$ 4,200	\$ 4,200	
Transportation	\$ 3,490	\$ 4,536	\$ 5,583	
Property Tax	\$ 39	\$ 39	\$ 39	
Other Taxes	\$ 71,098	\$ 98,144	\$ 138,712	
Depreciation	\$ 1,233	\$ 1,233	\$ 1,233	
Supplies	\$ 60	\$ 60	\$ 60	
Special Tax	\$ 11	\$ 65	\$ 152	
Total Operating Expenses	\$ 80,120	\$ 108,212	\$ 149,827	
Net Income before Income Tax	\$ 2,872	\$ 16,276	\$ 37,997	
Provision for Income Tax	\$ 574	\$ 4,883	\$ 11,399	
Net Income after Income Tax	\$ 2,297	\$ 11,393	\$ 26,598	
Return on Investment	12%	59%	138%	
Payback	54	15	7 months	

APPENDIX A

BREAK EVEN ANALYSIS

	Low	Average	High
Fixed Costs Total	76,642	103,741	144,396
Fixed Costs for Smoked Sausage	30,657	41,496	57,758
Fixed Costs for Luncheon Meat	45,985	62,245	86,638
Variable costs per kg			
Variable Costs per kg of Smoked Sausage	\$ 3.06	\$ 2.98	\$ 2.93
Variable Costs per kg of Luncheon Meat	\$ 1.44	\$ 1.43	\$ 1.41
Price per kg			
Price per kg of Smoked Sausage	\$ 3.50	\$ 3.50	\$ 3.50
Price per kg of Luncheon Meat	\$ 2.00	\$ 2.00	\$ 2.00
Break-even for Smoked Sausage per Year in kg	70,052	79,919	100,958
Break-even for Luncheon Meat per year in kg	82,465	109,349	146,322
Total Break-even in kg	152,517	189,269	247,279
Break-even for Smoked Sausage per Day in kg	224.5	256.2	323.6
Break-even for Luncheon Meat per Day in kg	264.3	350.5	469.0
Total Break-even in kg	488.8	606.6	792.6
Break-even in a time frame	218	270	353 days

APPENDIX B

Chicken Meat

For obtaining 110kg.
Amount

Price Total

Manufacturing Costs:

Materials Cost:

Raw Materials:

Beef	81 kg.	\$ 1.46	\$ 118.26
Pork Fat	16 kg.	\$ 1.55	\$ 24.85
Milk	1 kg.	\$ 0.19	\$ 0.19
Starch	2 kg.	\$ 1.36	\$ 2.72
	<u>100 kg.</u>		

Spices:

Salt	3 kg.	\$ 0.15	\$ 0.45
Saltpetre	0.1 kg.	\$ 0.15	\$ 0.02
Sugar	0.1 kg.	\$ 0.49	\$ 0.05
Pepper	0.04 kg.	\$ 5.80	\$ 0.23
Kardamon	0.03 kg.	\$ 6.80	\$ 0.20
Garlik	0.065 kg.	\$ 1.07	\$ 0.07
Hose	12.5 m.	\$ 0.20	\$ 2.50

Total Materials Cost

\$ 149.54 \$ 1.36 per 1 kg.

Wages
(per month)

Direct Labor:

Mixer	1 person	\$ 60	\$ 60.00
Breaker	1 person	\$ 50	\$ 50.00
Operator	2 persons	\$ 50	\$ 100.00
Assistant	1 person	\$ 50	\$ 50.00
Total Direct Labor Cost	5 persons		<u>\$ 260</u>

Manufacturing Overhead cost:

For Low Estimates

Indirect Labor:			
Maintenance worker	1 person	\$ 30	\$ 30
Utilities:			
Equipment Power	1,092 kW	\$ 0.04	\$ 42.41
Light and heat	130 kW	\$ 0.04	\$ 5.05
Property tax			\$ 30
Depreciation of equipment			\$ 124
Total Manufacturing Overhead			<u>\$ 231</u>

Manufacturing Overhead cost:

For Average Estimates

Indirect Labor:			
Maintenance worker	1 person	\$ 30	\$ 30
Utilities:			
Equipment Power	1,404 kW	\$ 0.04	\$ 54.52
Light and heat	130 kW	\$ 0.04	\$ 5.05
Property tax			\$ 30
Depreciation of equipment			\$ 124
Total Manufacturing Overhead			<u>\$ 244</u>

Manufacturing Overhead cost:

For High Estimates

Indirect Labor:				
Maintenance worker	1 person	\$ 30	\$ 30	
Utilities	1,404 kW	\$ 0.04	\$ 54.52	
Equipment Power	130 kW	\$ 0.04	\$ 5.05	
Light and heat			\$ 30	
Property tax			\$ 124	
Depreciation of equipment			\$ 244	
Total Manufacturing Overhead				\$ 244

Luncheon Meat

Per month
300 420 600 kg.daily

Manufacturing costs:

Materials	\$ 10,604	\$ 14,846	\$ 21,208
Direct Labor	\$ 260	\$ 260	\$ 260
Manufacturing Overhead	\$ 231	\$ 244	\$ 244
Total Manufacturing Costs	<u>\$ 11,095</u>	<u>\$ 15,349</u>	<u>\$ 21,712</u>

Cost of Sausage (1 kg.)

\$ 1.42	\$ 1.41	\$ 1.39
733	724	717 dram

Smoked Sausage

For obtaining 70kg.
Amount

Price Total

Manufacturing Costs:

Materials Cost:

Raw Materials:

Beef	75 kg.	\$ 1.46	\$ 109.50
Pork Fat	25 kg.	\$ 1.55	\$ 38.83
	100 kg.		

Spices:

Salt	4 kg.	\$ 0.15	\$ 0.60
Saltpetre	0.075 kg.	\$ 0.15	\$ 0.01
Sugar	0.2 kg.	\$ 0.49	\$ 0.10
Pepper	0.15 kg.	\$ 5.80	\$ 0.87
Kardamon	0.025 kg.	\$ 6.80	\$ 0.17
Hose	83.3 m.	\$ 0.20	\$ 16.66

Total Materials Cost

\$ 166.74 \$ 2.78 per 1 kg.

Wages
(per month)

Direct Labor:

Mixer	1 person	\$ 60	\$ 60.00
Smoker	1 person	\$ 50	\$ 50.00
Injector	2 persons	\$ 50	\$ 100.00
Bonestripper	1 person	\$ 50	\$ 50.00
			<u>\$ 260</u>

Total Direct Labor Cost

Manufacturing Overhead cost: For Low Estimates

Indirect Labor:

Maintenance worker	1 person	\$ 30	\$ 30
Utilities			
Equipment Power	728 kW	\$ 0.04	\$ 28.27
Light and heat	130 kW	\$ 0.04	\$ 5.05
Property tax			\$ 894
Depreciation of equipment			\$ 124
Total Manufacturing Overhead			<u>\$ 1,081</u>

Manufacturing Overhead cost: For Average Estimates

Indirect Labor:

Maintenance worker	1 person	\$ 30	\$ 30
Utilities			
Equipment Power	936 kW	\$ 0.04	\$ 36.35
Light and heat	130 kW	\$ 0.04	\$ 5.05
Property tax			\$ 894
Depreciation of equipment			\$ 124
Total Manufacturing Overhead			<u>\$ 1,090</u>

APPENDIX C

Manufacturing Overhead cost:	For High Estimates			
Indirect Labor:				
Maintenance worker	1 person	\$ 30	\$	30
Utilities				
Equipment Power	936 kW	\$ 0.04	\$	36.35
Light and heat	130 kW	\$ 0.04	\$	5.05
Property tax			\$	894
Depreciation of equipment			\$	124
Total Manufacturing Overhead			\$	<u>1,090</u>

Smoked Sausage	Per month		
	200	280	400 kg. daily
Manufacturing costs:			
Materials	\$ 14,451	\$ 20,232	\$ 28,902
Direct Labor	\$ 260	\$ 260	\$ 260
Manufacturing Overhead	\$ 1,081	\$ 1,090	\$ 1,090
Total Manufacturing Costs	<u>\$ 15,793</u>	<u>\$ 21,581</u>	<u>\$ 30,252</u>
Cost of Sausage (1 kg.)	\$ 3.04	\$ 2.96	\$ 2.91
	1564	1527	1498 dram