Evaluation of the efficiency of the production potential of meat delicacies in the Russian Federation

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Abstract. The paper considers the main indicators of the efficiency of meat products production (using the example of meat delicacies) and the conditions for their achievement, taking into account the influence of various factors on them. The study analyzed the main production potential of the meat complex, within which the positive and negative effects of the functioning of such meat processing companies were revealed. The paper proposed a system for achieving sustainability of meat processing enterprises in Russia.

1. Introduction

The analysis of the development of the meat and meat products market in the Russian Federation is quite stable. Meat processing companies are introducing innovative development of meat products, taking into account the purchasing power and trends in healthy eating [1-6]. Particular attention is paid to the quality indicators of products and the compliance of production with international standards for product and production safety [7-10]. The high attractiveness of the meat products market is due to its significant capacity, stable demand for products from consumers [11-15] and a fairly fast turnover. However, this market is characterized by rather high competition; therefore, the efficiency of a company operating in this market is a key criterion for success.

The effectiveness of its work largely depends on management activities that ensure the independence of the enterprise, its competitiveness and position in the market [16-18]. In turn, management activities should be based on a modern and effective information system, since accounting does not provide managers of all levels with operational information and cannot provide the necessary data for developing the strategy and tactics of an enterprise in a market environment [19-21].

In the conditions of market relations, the center of economic activity moves to the main link of the entire economy - the enterprise. Trade has large reserves of cost reduction, but these opportunities are not fully used. In this regard, maintaining the current cost control in order to constantly reduce their
value becomes one of the most important tasks of every trading enterprise. This determines the relevance of this topic.

Cost analysis allows you to reflect them in a timely manner and control the progress of the plan for costs, expenditure of material, labor and financial resources.

2. Materials and methods
Let's consider the operation of the cost analysis system in the production of gourmet meat products, using the example of pork loin. Below are the formulas used to calculate the main economic indicators needed to analyze the costs of the production process.

3. Results and Discussion
Calculations were made to launch a line for the production of meat delicacies, at the initial stage it is planned to produce 3 items. The recipe composition and cost calculation are presented in table 1.

| Ingredient            | Cost rub / kg | Raw material weight, kg | Raw material cost, rub. |
|-----------------------|---------------|-------------------------|-------------------------|
| Pork loin             | 108.50        | 0.9479                  | 102.84                  |
| Sodium nitrite        | 12.15         | 0.0079                  | 0.10                    |
| Table salt            | 6.88          | 0.00995                 | 0.07                    |
| "Zaltech" blend       | 831.00        | 0.0085                  | 7.09                    |
| Antioxidant           | 309.32        | 0.0114                  | 0.35                    |
| Water                 | 0.01          | 0.2559                  | 0.003                   |
| Total                 |               |                        | 110.45                  |
| Pork loin             | 108.50        | 0.9551                  | 103.63                  |
| Sodium nitrite        | 12.15         | 0.0079                  | 0.10                    |
| Table salt            | 6.88          | 0.01003                 | 0.07                    |
| "Zaltech" blend       | 610.00        | 0.0143                  | 8.74                    |
| Antioxidant           | 309.32        | 0.00115                 | 0.35                    |
| Water                 | 0.01          | 0.2426                  | 0.002                   |
| Total                 |               |                        | 112.89                  |
| Pork loin             | 108.50        | 0.9606                  | 104.23                  |
| Sodium nitrite        | 12.15         | 0.0080                  | 0.10                    |
| Table salt            | 6.88          | 0.0101                  | 0.07                    |
| "Zaltech" blend       | 644.91        | 0.0173                  | 11.15                   |
| Antioxidant           | 697.2         | 0.0029                  | 2.01                    |
| Water                 | 309.32        | 0.0012                  | 0.36                    |
| Total                 | 0.01          | 0.2498                  | 0.002                   |
| Pork loin             |               |                        | 117.91                  |

Thus, the cost of raw materials using the Zaltech complex mixture will amount to 110.45 rubles / kg. The cost of raw materials using the complex mixture will be 116.08 rubles / kg, the cost of raw materials using the control mixture will be 117.91 rubles / kg.

One of the important elements included in the cost of goods manufactured is wages. Consider the cost of staff salaries and deductions to extra-budgetary funds.

First you need to determine the number of workers and the cost of wages.

The total number of employees will be 10:

- Chief technologist - 0.5 rate;
- Shop manager - 0.5 rate;
- Deboner - 1 bet;
- Resident - 1 rate;
- Thermal department operator - 1 rate;
- Shaper - 1 rate;
- Packer - 2 stakes;
- Loader - 1 rate;
- Cleaner - 1 stake.

According to the current tariff rates at the meat processing plant. The monthly payroll amounted to 467 thousand rubles, monthly contributions to extra-budgetary funds amounted to 141 thousand 960 rubles.

The annual payroll is 5,604 thousand rubles, contributions to extra-budgetary funds - 1,703 thousand rubles.

The next step is to calculate the cost of the equipment and its depreciation. The list of equipment required for production includes 7 items: Gunter injector, VFRIO-VAC massager, VEMAG heat chamber, mold, smoking chamber, refrigerating chamber, smoking chamber, packing machine, the total cost of the equipment will be 6156 thousand rubles. The annual amount of amortization deductions is 556 thousand rubles.

Next, we will calculate the production capacity of the equipment and the costs for them. The total capacity of the line is 102.25 kW / h. The cost of 1 kW / h of electricity is 5.47 rubles, the power consumption per machine, kW / h, will be 102.25 rubles, the cost of electricity per batch is 559.3 rubles.

Packaging costs per month will amount to 42,000 thousand rubles.

We also take into account the costs of promoting the goods, the value for the enterprise is standard and when the product enters the market will be 405 200 rubles.

When starting a new production line, it is necessary to take into account the investment in engineering systems to ensure fire safety. The cost of drawing up a fire safety declaration will be 15 thousand rubles, the purchase of fire extinguishing equipment will be 900 rubles. per unit of production, building fire insurance - 200 thousand rubles, fire alarm service will be 30 thousand rubles. per year, these costs include checking all fire-fighting equipment: panels, devices and related fire-extinguishing systems, fire warning systems and evacuation control systems, smoke protection, elevators.

The total expenses for fire safety will amount to 784 thousand rubles. Financial investments in this project amounted to 1 million 720 thousand 225 rubles.

Next, we will calculate the financial costs for the production of pork loin. Financial investments in this project amounted to 1 million 720 thousand 225 rubles.

Raw materials costs amounted to 9 million 118 thousand 473 rubles. This cost item includes the raw material cost for 500g, which amounted to 55 rubles 23 kopecks and the volume of products produced for the year, this figure was 82 tons 550 kg or 165,100 packages of 500g each. finished product. Payroll costs for the year amounted to 5 million 607 thousand rubles, deductions to non-budgetary funds for the year amounted to 1 million 703 thousand rubles. Social contributions make up 30.2% of the payroll. The cost of production equipment amounted to 6 million 156 thousand rubles. Depreciation costs amounted to 556 thousand rubles. Electricity costs for the month amounted to 102 thousand 500 rubles. and 1 million 203 thousand rubles. Other expenses included the cost of fire safety, these costs amounted to 784 thousand rubles. Based on the data, the total cost of the finished product was calculated, the total cost was 19 million 954 thousand 523 rubles.

\[
\text{Unit cost} = \frac{19\,954\,523}{165\,100} = 120 \text{ rubles}
\]

Next, consider the production and implementation plan.

The annual production volume is 82,550 kg, the production cost is 120 rubles per kilogram, taking into account the wholesale margin of 30%, the selling wholesale price will be 156 rubles per kilogram,
the volume of commercial products will be 27,755,600 rubles, including VAT at 10% and the final price of 171.6 rubles per kilogram, the revenue will be 28,331,160 rubles.

Commodity output is an indicator of the volume of production that characterizes the value of all products produced by a commercial enterprise and intended for sale on the market or for their own needs. This figure was 27 million 755 thousand 600 rubles, the VAT rate was 10%, since the meat industry is taxed at a rate of 10%. The annual amount of proceeds including VAT will amount to 28,331,160 rubles. Next, let's calculate the effectiveness of the implementation.

Profit and profitability are some of the main indicators characterizing the efficient operation of an enterprise. To do this, you need to calculate the profit per unit of production, the total annual profit and the profitability of sales (table 2).

| Indicator                  | Total, rub. |
|----------------------------|-------------|
| Unit profit, rub.          | 51.6        |
| Total profit, rub.         | 8,519,160   |
| Return on sales,%          | 32          |
| Return on costs,%          | 41          |

Thus, according to the calculation of profit and profitability, it can be seen: the total is 8,519,160 rubles, the profitability of sales indicates that the company received 32 kopecks from each ruble of proceeds, the amount of income received from one spent ruble shows the profitability of costs - 41 kopecks.

Next, we will calculate the economic effect and other performance indicators. Let's calculate the net present value (NPV). The essence of the criterion consists in comparing the current value of future cash receipts from the project with the investment costs required for its implementation (table 3).

| Articles   | 0th Year | 1st Year | 2nd Year |
|------------|----------|----------|----------|
| Investments| -1,720,225 | -        | -        |
| Income     | -        | 28,331,160 | 33,920,640 |
| Consumption| -        | 19,983,071 | 25,922,195 |
| Net cash flow | -1,720,225 | 8,348,089 | 7,998,445 |
| Discount rate | -        | 12%      | 12%      |
| Discount coefficient | 1.000 | 0.8929 | 0.7972 |
| Discounted cash flow | -1,720,225 | 7,454,008.67 | 6,376,360.35 |
| NPV        | 12,110,144.02 |

Thus, the net present value will be 12,110,144.02 thousand rubles. The project is effective because NPV is greater than 0.

\[
\text{PI} = \frac{6,678,471}{1,720,225} = 3.9
\] (2)
The project is efficient because PI > 1
The net profit of this project will amount to 6 million 678 thousand 471 rubles for the year.

\[
\text{To} = \frac{1,720,225}{6,678,471} = 3 \text{ months}
\] (3)
The project pays off in less than six months.

Calculation of the break-even point allows you to determine the safety zone - the distance of the enterprise from the critical level at which the profit is zero. Let's define the sales volume at the break-even point using the formula, which looks like:
5

Unit price - 171.6 rubles.
Fixed costs = 8,651,556 rubles.
Variable costs per unit of production - 68.6 rubles / kg.

\[
Q_m = \frac{8651556}{170.6 - 68.6} = 83,995 \text{ kg} \quad (4)
\]

Thus, the sales volume at the break-even point will amount to 83,995 kg for the project. loin per year.

\[
K-NT = \left(\frac{28,331,160 - 11,331,515}{28,331,160}\right) \times 100\% = 60\% \quad (5)
\]

After the calculations, we will present the compliance of the project with the break-even criteria (table 4).

| Table 4. Determining whether the project meets the break-even criteria. |
|---------------------------------------------------------------|
| Indicator                                      | Break-even point | Project forecast |
| Production and sales volume (packages)          | 83,995           | 165,100          |
| Production and sales volume (rub.)              | 14,419,260       | 28,331,160       |

4. Conclusion
In the work, indicators such as the break-even point were calculated, the break-even point is understood as such a volume and revenue of production when the enterprise completely covers the losses and the activity begins to bring real profit.

Due to the fact that the forecast indicators exceed the break-even point of production, it can be concluded that the financial strength of the project is quite high.

The introduction of new products into production will make it possible to obtain a net profit in the amount of the net profit of 6,678,471 rubles. The introduction of a new product opens up the opportunity for consumers to satisfy a new need, the payback period will be 3 months.

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