Feasibility study of the project of using sesame oil of its own production in a public catering enterprise

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Abstract. Development of technology for new food products with desired properties is a long-term process and requires the involvement of significant resources. At the early stages of innovation, when developing a technical and technological image of a new product, it is necessary to assess the risks and future efficiency of its production and implementation. On the basis of preliminary studies, a technology and formulation of fat and oil products based on a composition of stabilizers and structure-forming agents, including protein products from sesame seeds, have been developed. The article is devoted to the assessment of factors associated with the purchase of raw materials, their quality and availability in the conditions of a public catering enterprise.

1. Introduction

The current state of the Russian food market is undergoing global changes, both in the structure of the assortment and in production volumes. Taking into account the needs of consumers, transforming due to the increasing rhythm of life and a changing diet, manufacturers are making adjustments to the quality characteristics of products, as well as the price components of products. Recently, there has been a decrease in the consumption of traditional products with an increase in demand for products "useful for health", including functional and specialized.

The main problem of this market segment is the need to search for raw materials from Russian manufacturers (import substitution), which allows obtaining products with high consumer characteristics and competitive price.

An important point is that the use of domestic ingredients will allow manufacturers of functional products to ensure a stable supply and relative consistency in the price sector for the prescription components used. This, in turn, will help to more accurately predict the volume of products and conduct an effective marketing and sales policy [1].

Expansion of the assortment or partial replacement of the existing assortment with enriched food products is an opportunity for an enterprise to bring to the market products that meet the needs of the population, and to make a big profit [2].

One of the stages of designing a process for the production of new products is the calculation of the feasibility of using a particular technology. The economic efficiency of the project depends on the choice of production technology. Therefore, there is an acute problem of choosing one or another method of its calculation [3].
Production efficiency is the ratio of the price of goods or services to the end user and the cost of their creation. Competition and profitability of an enterprise is achieved not only by producing quality products, but also by regulating the processes taking place in the organization. The main task of increasing production efficiency is tracking the main performance indicators, optimizing production resources, monitoring consumer preferences [4, 5].

The purpose of the research is to determine the economic efficiency of the production of food additives and fortified products based on them on the technological line of traditional products.

2. Materials and methods
The objects of research are the main economic indicators of the production and economic activity of the enterprise (profit, profitability), the developed technology for the production of sesame oil and protein concentrate (sesame cake) from sesame seeds [6] in a public catering enterprise.

The work uses an analytical research method based on a systematic approach to the problem under study.

3. Results and discussion
On the basis of generalization of theoretical data and accumulated practical experience in the development and introduction of food products to the market in the conditions of a modern economy, a feasibility study is proposed for a project for the production of fortifying additives in a public catering enterprise.

Production plan.
Justification of the volume of capital investments for the project. Capital investment structure. The project is supposed to be implemented on the basis of a functioning public catering enterprise, where equipment for the production of the required amount of cold pressing oil is available, and therefore additional capital costs are not expected.

Enterprise capacities for the project. Production and sales program
Capacities for the production of sesame oil are determined based on the existing level of need of a functioning enterprise for it, capacities for the production of protein concentrate - based on the volume of production of sesame oil. As an alternative to the revenue indicator within the framework of this feasibility study, there are the costs of acquiring a similar capacity (and demand) for the volume of sesame oil and protein concentrate of industrial production at the prices in force at the time of writing the feasibility study.

The enterprise's annual demand for sesame oil is 27 kg, the average purchase price for 1 kg is at the level of 487 rubles. The production volume of protein concentrate will be 72 kg per year, the purchase price - 100 rubles per kg.

The program for the production and sale of products, works, services with a quarterly breakdown is presented in table 1.

| Table 1. Sesame oil and protein concentrate production program. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| No | Indicators | Unit of measurement | 2018 | 2019 | 2020 | 2018 | 2019 | 2020 | 2018 | 2019 | 2020 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | Sesame oil | | | | | | | | | | | |
| | The need for a chain of restaurants in sesame oil | kg | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| | Power utilization percentage | % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % |
| | Production volume in kind | kg | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 |
| | Average purchase price of 1 kg of industrial sesame oil | rub. | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 | 487.0 |
| | Acquisition costs (revenue equivalent) | rub. | 52596 | 52596 | 52596 | 52596 | 52596 | 52596 | 52596 | 52596 | 52596 | 52596 |
| | VAT | rub. | 4781 | 4781 | 4781 | 4781 | 4781 | 4781 | 4781 | 4781 | 4781 | 4781 |
| 2. | Sesame cake | | | | | | | | | | | |
| | Protein concentrate production capacity | kg | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 | 72 |
| | Power utilization percentage | % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % | 100 % |
### Production and Marketing Costs, Rub.

| No | Indicators | Unit of Measurement | 2018 | 2019 | 2020 |
|----|------------|---------------------|------|------|------|
| 1. | Direct (variable) costs, total | | 48431 | 48431 | 48431 |
|    | direct material costs | | 46800 | 46800 | 46800 |
|    | labor costs for workers, employees and engineers | | 0 | 0 | 0 |
|    | insurance premiums | | 0 | 0 | 0 |
|    | others | | 1631 | 1631 | 1631 |
| 2. | Total (fixed) costs, total | | 0 | 0 | 0 |
| 2.1. | General production costs for the project, total | | 0 | 0 | 0 |
|      | в том числе: | | | | |
|      | depreciation deductions | | 0 | 0 | 0 |
|      | other general production expenses | | 0 | 0 | 0 |
| 2.2. | General operating expenses for the project, total | | 0 | 0 | 0 |
3.2 Financial plan

Project financing volume by sources

Within the framework of this feasibility study, there is no need to finance capital investments for the project.

Calculations of the amounts of taxes and fees to the budget.

Budget effect The sum of all taxes and fees for this project under the general taxation system includes:

- VAT on sold products (works, services) - 10% (in accordance with subparagraph 1 of paragraph 2 of Article 164 of the Tax Code of the Russian Federation);
- Income tax - 20%.

The calculation of taxes and fees for the project with a quarterly breakdown is presented in table 3.

| No | Indicators | 2018 | 2019 | 2020 |
|----|------------|------|------|------|
| 1. | Income tax |      |      |      |
|    | taxable base | 5929 | 5929 | 5929 |
|    | tax rate | 20% | 20% | 20% |
|    | amount of tax (due) payable | 1186 | 1186 | 1186 |
| 2. | Value Added Tax (Investment) | | | |
|    | taxable base | 0 | 0 | 0 |
|    | tax rate | 18% | 18% | 18% |
|    | amount of tax (due) to be refunded | 0 | 0 | 0 |
|    | Value added tax (reimbursement of current activities) | | | |
|    | taxable base | 46800 | 46800 | 46800 |
|    | tax rate | 10% | 10% | 10% |
|    | amount of tax (due) to be refunded | 4680 | 4680 | 4680 |
|    | Value added tax (accrual of current activities) | | | |
|    | taxable base | 54360 | 54360 | 54360 |
|    | tax rate | 10% | 10% | 10% |
|    | amount of tax (due) to be charged | 5436 | 5436 | 5436 |
|    | VAT payable | 756 | 756 | 756 |
| 3. | Amount of taxes and fees, total | 1942 | 1942 | 1942 |

Cumulative budgetary effect from project implementation for the period from 2018 to 2020 will amount to 5826 rubles.

3.3 Project income and expenses plan

The plan of income and expenses of the project includes:

- income from ordinary activities (net proceeds from the sale of main types of products (works, services));
- expenses for ordinary activities (total costs for the production and sale of all types of products (works, services) for the project, total).
Gross profit is the difference between the revenue (net) from the sale of goods, products, works, services (net of value added tax, excise taxes and similar mandatory payments) and the total cost of goods, products, works, services sold, total.

Profit (loss) from sales - the difference between gross profit and selling and administrative expenses.

Net profit (loss) of the next period - the difference between profit before tax and current income tax.

After reaching the design capacity, the annual net profit of each regular period will increase by more than 4.7 thousand rubles.

The plan of income and expenses for the project for investors applying the general taxation regime, broken down by year, is presented in table 4.

**Table 4.** Plan of income and expenses for the project for investors applying the general taxation regime, thousand rubles

| № | Indicators                                                                 | 2018     | 2019     | 2020     |
|---|---------------------------------------------------------------------------|----------|----------|----------|
| 1. | Income and expenses from ordinary activities                              |          |          |          |
|   | Revenue (net) from the sale of goods, products, works, services           | 54360    | 54360    | 54360    |
|   | The total cost of goods sold, products, works, services, total            | 48431    | 48431    | 48431    |
|   | including:                                                               |          |          |          |
|   | material costs                                                            | 46800    | 46800    | 46800    |
|   | other costs                                                               | 1631     | 1631     | 1631     |
|   | Gross profit                                                              | 5929     | 5929     | 5929     |
|   | Gross profitability                                                       | 10.9 %   | 10.9 %   | 10.9 %   |
|   | Selling and administrative expenses                                       | 0        | 0        | 0        |
|   | EBITDA                                                                    | 5929     | 5929     | 5929     |
|   | depreciation deductions                                                  | 0        | 0        | 0        |
|   | EBIT                                                                      | 5929     | 5929     | 5929     |
| 2. | Other income and expenses                                                |          |          |          |
|   | Profit (loss) before tax                                                  | 5929     | 5929     | 5929     |
|   | Current income tax                                                        | 1186     | 1186     | 1186     |
| 3. | Net profit (loss) of the next period                                      | 4743     | 4743     | 4743     |
|   | Net return on sales                                                       | 9 %      | 9 %      | 9 %      |

3.4 Cash receipts and payments plan

At each step, the value of the cash flow is characterized by:

- an inflow equal to the amount of cash receipts (or results in value terms) at this step;
- outflow equal to payments at this step;
- balance (active balance, effect) equal to the difference between inflow and outflow.

For cash flow from investment activities:

- outflows include capital expenditures, commissioning costs, end-of-project liquidation costs, working capital increases and additional funds;
- to inflows - sale of assets (possibly conditional) during and after the end of the project, receipts due to a decrease in working capital.

The plan of cash receipts and payments by year is presented in table 5.

**Table 5.** Cash receipts and payments plan, rub.
| № | Indicators                                                                 | 2018  | 2019  | 2020  |
|---|----------------------------------------------------------------------------|-------|-------|-------|
| 4.| Net cash from continuing operations (point 2 - point 3)                    | 3987  | 3987  | 3987  |
| 5.| Net increase (decrease) in cash and cash equivalents (point 3 + point 6 + point 9) | 3987  | 3987  | 3987  |
| 6.| Cash balance at the end of the reporting period                           | 3987  | 7975  | 11962 |

For cash flow from operating activities:

- inflows include proceeds from sales, as well as other and non-operating income, including receipts from funds invested in additional funds;
- to outflows - production costs, taxes.

Financial activities include transactions with funds external to the investment project, i.e. not coming from the project. They consist of the firm's own (share) capital and borrowed funds.

For cash flow from financial activities:

- inflows include investments of own (share) capital and borrowed funds: subsidies and grants, borrowed funds, including through the issuance of its own debt securities by the enterprise;
- to outflows - the cost of returning and servicing loans and debt securities issued by the enterprise (in full, regardless of whether they were included in inflows or in additional funds), as well as, if necessary, for the payment of dividends on the company's shares.

A necessary condition for the feasibility of the project is a positive value of the cash flow indicator on a cumulative total for each time interval.

3.5 Analysis of project risks

Technological risk - readiness of the technology for use, serviceability and maintainability of equipment, availability of spare parts, additional equipment and devices, equipment with tools, training of service personnel, availability of qualified personnel (if provided for by the project), participation in the installation and training of foreign specialists:

- Technological risk is low.

Organizational and managerial risk - availability and guarantee of implementation of the project schedule, responsibility of participants for non-compliance with the schedule, availability of qualified management personnel (certification of managers) and others.

- Organizational and managerial risk is low.

Material and technical support risk - assessment of the possibility of switching to alternative raw materials, the level of incoming quality control of raw materials.

- There is no logistics risk due to the specifics of the market.

Financial risk - assessment of the current financial position, the likelihood of non-payments by the project participants, credit and interest rate risks

- Financial risk missing.

Economic risks - the stability of the applicant's economic position to changes in the macroeconomic situation in the country, assessment of the consequences of an increase in tariffs and prices for strategic resources, the possibility of reducing effective demand and prices for products in the Krasnodar Territory and the country as a whole, the presence of alternative sales markets, the consequences of a worsening tax climate.

- Economic risks are medium.

Environmental risks - possible penalties and their impact on the economic situation of the applicant.

- Environmental risks are low.
4. Conclusion

4.1 The essence of the proposed project and place of implementation
Within the framework of the initiated project, it is planned to launch the production of sesame oil and protein concentrate at the existing facilities of the public catering enterprise and replace the purchased analogs of industrial production used at the enterprise.

4.2 Efficiency of project implementation
Since the project does not imply the implementation of investment investments, the assessment of economic effects and economic efficiency of the project is given in terms of EBITDA, net profit (loss) for the next period, net profitability of sales (table 6).

| Name                             | Value  |
|----------------------------------|--------|
| EBITDA, rub                      | 5929   |
| Net profit (loss) of the next period, rub | 4743   |
| Net return on sales, %           | 9 %    |

4.3 Budgetary effect from the implementation of the project
As a result of the implementation of this investment project, the aggregate budget effect (the total amount of tax revenues to the budgets of all levels) for the period from 2018 to 2020 will be 5826 rubles.

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