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# **Improving the Quality and Expanding the Range of Mayonnaise**

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**ABSTRACT:** The proposed technological stage of production of the classic range of mayonnaise using cottonseed oil and its products. The main technological stages of the production of mayonnaise are methods for preparing raw materials, mixing the constituent components and homogenizing them, obtaining finished products, packaging, and storage. Recommended options for the range of production of mayonnaise. Cotton oil is used as vegetable oil. The following assortments of mayonnaise (Provencal, Olive, Cheese, Classic) are made. The organoleptic characteristics and physicochemical parameters of the resulting mayonnaise were determined. Determining were the taste, smell and color of the final product. The quality improvement has been achieved and the food safety of mayonnaise has been ensured.

**KEY WORDS:** mayonnaise, assortment, components, production technology, quality and food safety of products, organoleptic and physico-chemical characteristics.

## **I. INTRODUCTION**

Mayonnaise is a multicomponent product based on liquid vegetable oils and flavorings. In addition to vegetable oil and water, it includes egg powder, sugar, mustard, vinegar or lemon juice, milk powder, salt, spices. It has a lot of what our body needs - fats, proteins, carbohydrates, minerals.

Depending on the purpose, mayonnaise is divided into two groups:

- seating

- for baby and diet food.

Treats mayonnaise table, with spices, spicy with flavoring and gelling additives.

Mayonnaise with flavoring and zheliruyuschim additives, sweet, mayonnaise cream, dietary are intended for children's and dietary food.

## **II. SIGNIFICANCE OF THE SYSTEM**

Mayonnaise is produced in both batch and continuous processes.

The production technology of mayonnaise, both traditional and new, has been modernized using food additives and flavoring substances. This is done through the efficient and rational use of cottonseed oil, its products, as well as food additives and flavoring substances derived from local raw materials.

## **III. LITERATURE SURVEY**

In the organization of production of mayonnaise, the development of its range in the Russian Federation and also, in foreign practice, a large role was played by well-known works [1-4].

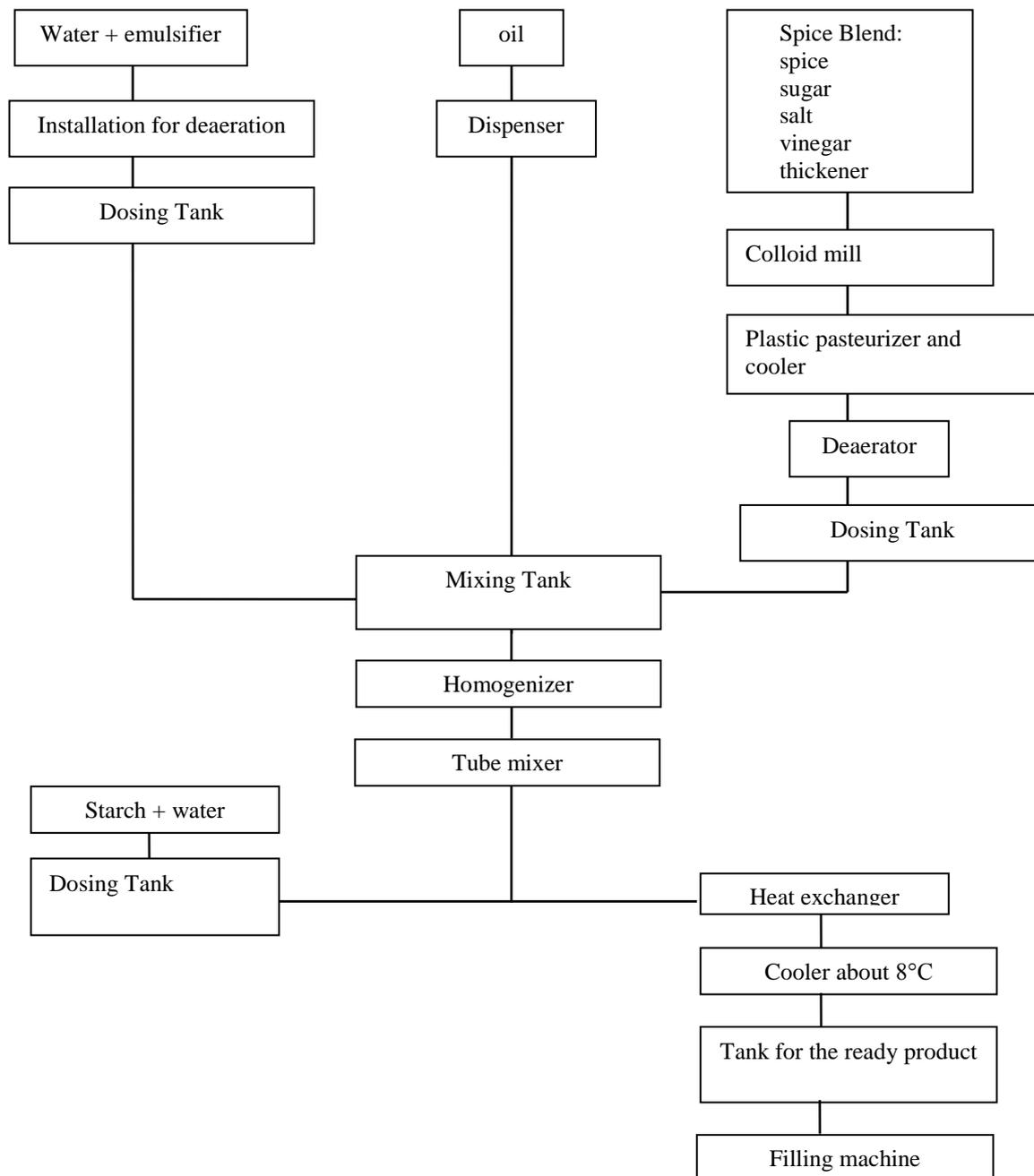
The foundations were laid for a scientific approach to the selection of prescription composition and technology for the preparation of a wide range of mayonnaise that can satisfy the diverse needs of consumers [2-4].

## **IV. METHODOLOGY**

For analysis quality, composition and physical and chemical specifications using modern methods physical and chemical study, particular methods thin layer and gas-liquid chromatography, dilatometry, nuclear magnetic analyses.

**V. EXPERIMENTAL RESULTS**

The main stages of the modernized production technology of mayonnaise are shown in Figure 1.



**Fig.1. Upgraded technology and main production stages of mayonnaise**

As can be seen from Figure 1, the technology of cooking mayonnaise involves the implementation of several stages in the system. Each stage is aimed at changing the properties and characteristics of raw materials and additives introduced into the formulation of the product. In this regard, the improvement of existing production technologies of mayonnaise, the creation of low-waste and highly efficient technologies, the

establishment of optimal modes of their implementation is essential. The advanced stages of the production technology of mayonnaise are effectively used in manufacturing practice. It should be noted that the main stages of the preparation of mayonnaise consist of preparing food additives and flavoring substances, balancing their quantitative content, mixing, homogenizing and obtaining homogeneous emulsions. The range of mayonnaise obtained is very diverse. The most common are mayonnaise brand "Provencal" (Table. 1).

**Table 1. Component composition of mayonnaise  
"Provencal" in the well-known recipe**

Ingredients	Composition, %	
	Option 1	Option 2
Water	22.67-20.04	24.48-21.1
Vegetable oil	72.00	72.00
Modified starch	2.0-3.5	-
Compound	-	1.7-3.0
Emulsifier	0.1-0.3	-
Stabilizer	0.05-0.2	-
Flavoring "Egg"	0.02-0.08	-
Sugar - sand	1.6-2.2	1.6-2.2
Mustard Flavor	0.02-0.04	-
Flavoring "Provence"	-	0.02-0.05
Salt	1.2	1.2
Acetic acid (80%)	0.1-0.3	0.1-0.3
Beta Carotene	0.01-0.04	0.01
Preservatives	0.05-0.1	0.05-0.1
Baking soda	0.05	0.05
Total	100.0	100.0

As can be seen from the data of Table 1, the main raw materials for mayonnaise are: refined vegetable oil, milk powder, enzymatic (egg) yolk, sugar, salt, mustard flavor, baking soda, etc. Each of these components performs certain functions, so thickener, the yolk and gelling agents act as an emulsifier; salt has a preservative effect; soda maintains a certain pH.

A serial release of a new type of mayonnaise "Classic" has been carried out.

The peculiarity of the new type of mayonnaise are prescription components, their quantitative content and ratio (Table 2).

**Table 2. The composition of the new type of mayonnaise "Classic"**

Ingredients	Composition, %		
	Option 1	Option 2	Option 3
Vegetable oil	54.0	54.0	54.0
Combined system	1.4-2.5	-	-
Compound (Kamel, guar.)	-	1.3-2.5	-
Modified starch	-	0.0-2.0	0.1-0.4
Stabilizer	-	-	0.01-0.03
Emulsifiers E 475	-	-	1.0-3.0
Granulated sugar	1.5-2.2	1.5-2.2	1.5-2.2
Salt	1.0-1.5	1.0-1.5	1.0-1.5
Baking soda	0.0-0.05	0.0-0.05	0.0-0.05
Mustard Flavor	0.02-0.08	0.02-0.08	0.02-0.08
Flavoring "Egg"	0.0-0.06	0.0-0.06	0.0-0.06
Aromatic Additive	0.0-0.05	0.0-0.5	0.0-0.5
Amplifier taste	0.0-0.02	0.0-0.2	0.0-0.2
Acetic acid (80%)	0.0-0.4	0.1-0.4	0.1-0.4
Dye	0.0-0.2	0.0-0.2	0.0-0.2
Antioxidant	0.06-0.10	0.06-0.10	0.06-0.10
Water	45.92-41.95	46.2-39.95	46.21-41,02
Total:	100.0	100.0	100.0

As can be seen from the data of Table 2, a relatively low amount of vegetable oil is used in the formulation of a new type of mayonnaise. Particular attention is paid to the use of combined systems, flavors and antioxidants.

The range of mayonnaise has been expanded with the use of food additives and flavoring substances of the new generation (Table 3).

**Table 3. Assortment and component composition of a new type of mayonnaise "My dream"**

Ingredients	Range, composition,%			
	Provence	Olive	Cheese	Classical
Vegetable oil	34 ... 37	34 ... 37	34 ... 37	48 ... 52
Vinegar	0.15 ... 0.35	0.15 ... 0.35	0.15 ... 0.35	0.10 ... 0.40
Granulated sugar	2.1 ... 2.3	2.1 ... 2.3	2.1 ... 2.3	1.5 ... 2.2
Salt	1.1 ... 1.3	1.1 ... 1.3	1.1 ... 1.3	1.0 ... 1.5
Water	54.2..56.9	54.2..56.9	54.2..56.9	39,9..46,2
Polysaccharides	3.1 ... 3.7	3.1 ... 3.7	3.1 ... 3.7	0.1 ... 2.2
Flavors	0,05..0,09	0,05..0,09	0,05..0,09	0.02-0.26
Nutritional supplements	0,69 ... 0,71	0,69 ... 0,71	0,69 ... 0,71	1.69 ... 1.75

In the preparation of new types of mayonnaise special attention is paid to the use of various types of food additives and flavoring substances. The quantitative content and the ratio of additives were changed in different limits. As a result, created new types of mayonnaise.

Introduced food additives and flavoring substances provided the necessary organoleptic characteristics (Table 4) and physico-chemical characteristics (Table 5) of mayonnaise.

**Table 4. Organoleptic characteristics of mayonnaise**

Name of the indicator	Characteristic
Appearance, consistency	Homogeneous creamy product with single air bubbles
Taste and smell	Gentle, slightly pungent, with mustard and vinegar
Colour	From white to cream, uniform throughout the mass

**Table 5. Physical and chemical indicators of mayonnaise**

Name of the indicator	Value
Mass fraction of fat, % not less	50.0
Mass fraction of moisture, % not more than	46.5
Acidity in terms of acetic or citric acid, % not more than	0.7
The stability of the emulsion, % not-destroyed not less	98
Energy value, kcal	465

## VI. CONCLUSION AND FUTURE WORK

A feature of new types of mayonnaise is the relatively low content of vegetable oil and fat additives in their recipe. This provides a low calorie end product.

Thus, the development of technology and the production of mayonnaise of a new range allowed to expand the production of oil and fat products under production conditions.

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