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PRODUCTION OF ALTERNATIVE PLANT MILK

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Abstract
the reason for the growing popularity of plant-based milk is that an increasing number of people refuse animal products. Oat milk is much easier to absorb than nuts, so it has a relatively large amount of beta-glucan, protein, amino acids, lipid and starch components, therefore, it benefits the body.

Keywords: Oats, alternative, vegetable milk, chemical composition, vegetable protein.

Introduction

Oat grain is distinguished by a significant content of phosphorus, and in terms of fat content it surpasses other cereals. Up to 40% of the oat grain is starch, which is in the endosperm in the form of starch grains. In terms of the content of vitamin B1 (thiamine), oats are superior to wheat, rice and barley [2].

Oat milk is a product based on oat flakes or oat grains and plain water. Some manufacturers add a little sunflower oil, salt and vitamins to the drink. During production, most of the nutrients from oats remain in the water. The drink is especially suitable for people with a sensitive stomach, as it has enveloping properties. Oat milk is perfectly absorbed by the body, provides it with all the necessary substances, including protein (up to 4-5 g can be obtained per serving of oat milk), fiber, B vitamins, iron, calcium, phosphorus and silicon [4]. This drink is often recommended for those who play sports to build muscle mass, and for children who are in the active stage of growth. Also, oat milk can be advised to people with high cholesterol levels, as this type of milk contains B vitamins, which help to remove cholesterol plaques. In addition, it is recognized as an excellent antioxidant! And, of course, such alternative milk is ideal for weight loss, as it affects the normalization of metabolism and has a low calorie content" [1].

The well-known technology for processing the production of oat milk includes the following steps:

- Mixing flour with water and active mixing;
- Enzymatic processing (various types of enzymes and bacteria);
- Heat treatment to stop enzymatic activity;
- Separation of suspensions on centrifugal equipment;
- Preparation of the final formulation of the product;
- Homogenization, sterilization;
- Packaging (for the end user).

A new innovative technology for processing oatmeal to obtain a new product - oat milk concentrate.

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Oat milk concentrate is the basis for the production of a wide range of drinks such as "vegetable milk" and other non-dairy products: cream, yogurt, cheese, ice cream and others [3].

A feature of this concentrate is the ability to obtain a product with a high protein content, which significantly increases the nutritional value of the products and brings them to the level of cow's milk or even exceeds it.

The new technology has the following differences:

• The end product is an oat milk concentrate with an absolute solids content (a.d.m.) of at least 40% (10-12% a.d.h. in milk obtained by conventional technology).

Table 1. Chemical composition of oat milk concentrate

Options	Content, % (per total weight)	
	Oat milk concentrate	regular oat milk
crude protein	12.0 resp. 30% on a.d.v.	1.2 resp. 10% on a.d.v. .
Non-protein nitrogen	1,5	t.p
Starch	16,0	6,0
Total Sugar	0,5	0,1
crude fat	8,0	2,0
raw ash	2,0	1,0
crude fiber	0,0	1,0
Humidity	60,0	88,0

The protein content in oat milk concentrate increases by more than 2 times - up to 30% per a.d.w., which is 3 times higher compared to 10% protein per a.d.w. in regular oat milk.

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