

**THE USE OF GRAIN AND FRUIT AND BERRY RAW MATERIALS AS A BASIS FOR
THE PRODUCTION OF SOFT DRINKS
(ВИКОРИСТАННЯ ЗЕРНОВОЇ ТА ПЛОДОВО-ЯГІДНОЇ СИРОВИНИ ЯК ОСНОВИ
ДЛЯ ВИРОБНИЦТВА БЕЗАЛКОГОЛЬНИХ НАПОЇВ)**

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В публікації було порушено питання щодо необхідного використання зернової та плодово-ягідної сировини, для підтримки здоров'я людини та уникнення онкологічних захворювань. Були проаналізовані інгредієнти та їх найпоширеніші види для приготування безалкогольного напою, вплив вітамінів на організм.

***Ключові слова:** натуральна їжа, безалкогольні напої, плодово-ягідна сировина, онкологічні захворювання, дикорослі ягоди, здоров'я.*

The publication raised the issue of the necessary use of grain and fruit and berry raw materials to maintain human health and prevent cancer. The ingredients and their most common types for the preparation of a soft drink, the effect of vitamins on the body were analyzed.

***Key words:** natural food, non-alcoholic beverages, fruit and berry raw materials, oncological diseases, wild berries, health.*

Non-alcoholic drinks are traditional for our country, our ancestors knew how to prepare them since ancient times. Currently, the market for soft drinks is still in demand and tends to expand from year to year. For many hundreds of years, the quality of the produced beverages has been improved, the search for new tastes, technologies and production methods has been going on [1, 2]. As a result, in the modern world we have a fairly extensive range of natural soft drinks [3].

More and more people tend to eat one hundred percent natural foods or foods with a minimum amount of artificial food additives. This is due to the fact that in recent years there has been an increase in diseases of the endocrine system, oncological diseases associated with unhealthy diet, eating nonnatural foods or with E-supplements. In the context of all of the above, it is relevant to expand the range of natural food products, in particular soft drinks.

Soft drinks can be produced from fruits, berries, leaf extracts and other plant materials. The most promising is the production of non-alcoholic beverages from cereal raw materials. This direction of production is promising, the market of soft drinks from such raw materials is still little studied and filled.

Oats is a cereal crop that belongs to the genus *Avena*, is not a whimsical crop, does not require special conditions for farming, it can be grown on almost all types of soil, in various climatic conditions. The most widely cultivated varieties in the Nonblack Soil Zone are Krechet, Argamak, Berber and others. These varieties are distinguished by increased productivity, relatively short growing season, and are resistant to drought, lodging and diseases of cereal crops [4].

According to a number of studies, the fiber contained in oat grain helps to lower cholesterol levels, reduce the risk of cardiovascular diseases, and normalize blood pressure. Silicon contained in oat grain contributes to maintaining the strength of the bone apparatus, raising immunity, strengthening the vascular system [5].

Oat grains can also be used for the production of alcoholic beverages, because it contains carbohydrates, with the proper functioning of enzymes, it is quite well-digested sugars [6, 7].

The usefulness of wild berries was already known to ancient people. At a time when medicine was not yet so developed, it was the main source of medicines for humans. Wild berries are rich in vitamin C, fructose, glucose, organic acids, flavonoids, etc. Berries have a general

strengthening, antimicrobial effect, restore the functioning of the gastrointestinal tract. Strawberries contain easily digestible sugars, vitamin C, B vitamins, nicotinic, salicylic and other organic acids.

Wild berries contain pectin, which helps to lower cholesterol, improve metabolism and the functioning of the circulatory system [9, 10].

With a high sugar content (up to eleven percent), raspberries are low in calories, since their composition mostly contains the simplest sugars – fructose and glucose. Also, raspberries contain a significant amount of organic acids – malic, citric, tartaric, etc. Raspberries also contain coumarin, which normalizes blood clotting, contains anthocyanins, whose effect strengthens blood vessels, capillaries, and has an anti-sclerotic effect.

The Northwest region is characterized by widespread growth of plum trees. The most frequently grown varieties are Alyonushka, Alleynaya, Anna Shpet, Vengerka. Plum trees belong to the genus Rosaceae, which includes over 250 species. Plum fruits are very tasty and healthy, they are a source of multivitamins. They contain vitamins of group B, C, A, E, K, trace elements, fiber. Due to its high fiber content, plums are beneficial for improving the functioning of the intestinal tract. Pectin and organic acids help cleanse excess cholesterol from the body.

Apple trees are the most common type of fruit trees that are harvested for the food industry. Apple trees belong to the same genus Rosaceae, the Apple tribe (Maleae) of the Plum subfamily. The most widespread apple tree is *Malus domestica*, which includes the majority of cultivated varieties.

Apples have less fiber than other fruits. It stimulates bowel movements and helps reduce the risk of cancer. The pectin contained in apples improves the functioning of the intestines, cleanses it of toxins.

In the greatest amount than in other fruits and berries, apples contain iron, which is necessary to maintain a high-quality blood composition, and calcium to maintain the cardiovascular system and the musculoskeletal system. Apples also contain vitamins E, B, A, ascorbic acid, trace elements. The benefits of apple fruits also lie in their antioxidant properties, which prevent the processes of cell oxidation and, as a result, not only the aging of the body, but also prevent the penetration of ultraviolet radiation into the body, and reduce the risk of cancer [8].

Currently, there is a wide variety of non-alcoholic beverages, a significant number of industries are engaged in the production of these products all over the world. The modernization of the equipment available at the enterprises continues everywhere, new sites are being built and launched. Technological features of the new product “Non-alcoholic drink made from oats and berryfruit ingredients” will not necessitate a significant changeover of the equipment existing at the enterprises. The resulting drink becomes not only tasty, but also healthy.

Summing up, it can be noted that the raw materials for the production of soft drinks from cereals and berry-fruit components are mainly seasonal. Fresh berries and fruits can be harvested and used in production only in the summer and a little in the autumn. However, the drink itself can be attributed to all-season, because oats have good keeping quality and, if stored properly, retain their quality and useful properties for a long time, and berries and fruits in the off-season can be used frozen or pre-processed from fresh to juice.

Consumption of the product due to its useful, dietary and therapeutic and prophylactic properties can also be attributed to all-season. It does not depend on the time of year, like a non-alcoholic drink like kvass, the highest consumption of which is observed in May and June during the hot period, before the appearance of seasonal berries and fruits. Any person who monitors their health will be interested in including this high-quality and healthy product in their diet.

The technology for the production of a new soft drink from grain raw materials will not require a significant changeover of the equipment operating at the enterprise for the production of drinks from plant ingredients.

The drink can be sold in retail outlets all year round. With a competent marketing strategy, this direction can be successfully developed.

All of the above can lead to an increase in demand, an increase in capacities for the production of non-alcoholic products, the emergence of new enterprises, an increase in the capacity

of existing enterprises for the production of non-alcoholic products, the reorientation of some enterprises to the production of this promising product in all respects. The resulting product, in comparison with the existing analogues, has a more pronounced pleasant taste and richness.

Thus, the possibility of expanding the range of drinks based on herbal ingredients exists and can be technically implemented in the production of the Northwest region of our country. Consumers are looking for healthier products, and their choice would be obvious.

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