**ОДЕСЬКА НАЦІОНАЛЬНА АКАДЕМІЯ
ХАРЧОВИХ ТЕХНОЛОГІЙ**

ЗБІРНИК НАУКОВИХ ПРАЦЬ

МОЛОДИХ УЧЕНИХ, АСПІРАНТІВ ТА СТУДЕНТІВ

**ОДЕСА
2018**

ББК 36.81 + 36.82
УДК 663 / 664

Одеська національна академія харчових технологій
Збірник наукових праць молодих учених, аспірантів та студентів
Міністерство освіти і науки України. – Одеса: 2018. – 240 с.

Збірник опубліковано за рішенням вченої ради від 03.07.2018 р., протокол № 15
За достовірність інформації відповідає автор публікації

РОЗДІЛ 6

СОЦІАЛЬНІ ТА ЕКОЛОГІЧНІ АСПЕКТИ СУЧАСНОЇ ЖИТТЄДІЯЛЬНОСТІ

– a relative reduction in the cost of the product, without compromising the quality characteristics of the raw materials;

– as a consequence of all of the above, improving the efficiency of enterprises and the industry as a whole.

If Ukrainian enterprises switch to an innovative way of development, they will use a set of innovative measures in the production process, then perhaps the domestic dairy industry will be able to produce high-quality goods at affordable prices and meet the needs of buyers, which will subsequently enable enterprises to compete with foreign producers.

Scientific supervisor – the assistant of the Department of Language Training
Obolianinova Sophia Oleksandrovna

Literature

1. Magomedov M.D., Zazdravnykh A.V. Economics of food industries: Textbook. – 2nd ed. –M.: "Dashkov and K", 2007.– 214 p.
2. Kharitonov V.D. Trends in the development of milk processing technologies. – Materials of MNPK – Dairy Industry, 2004. – 187 p.

ECOLOGICAL CRISIS OF THE KUYALNIK AND HADZHIBEY ESTUARIES

Student Artiukhova A., Faculty of Oil, Gas and Ecology
Odessa National Academy of Food Technologies

Geographically the Kuyalnik and Hadzhibey estuaries are the deltas of the Minor and the Major Kuyalnik rivers flowing into the Odessa Gulf. In tectonic terms, these are depressions, formed in the form of grabens along the main Black Sea neotectonic zone. Odessa bay is a junction of the Main Black Sea and Odessa - Sivash neotectonic zones.

The absence of stormy floods on the Minor and Major Kuyalnik rivers in recent centuries created conditions for the formation of unsealed silt without an admixture of sandy fraction, and the absence of dissolved gases, including oxygen in the hyper-saline water of the Kuyalnik estuary, formed the necessary geochemical background-the reducing conditions in the bottom sediments.

Due to the peculiarities of the geological structure, the Kuyalnik and Hadzhibey estuaries have differences in the hydro geochemical composition of the bottom sediments, and with respect to the Kuyalnik estuary, and the water stratum, which is mineralized brine. As a result of the formed deposits of therapeutic mud and the presence of brine in Kuyalnik and Hadzhibey estuaries, at the beginning of the 19th century the development of resorts began on their shores, and the estuaries acquired the status of resort and recreational zones and the corresponding level of pollution control.

It is important to note that for centuries, along with the recreational resource, a different resource was used in the estuaries.In the estuaries salt was extracted. Long-term observations showed that in the period from 1878 to 1968 the salinity in the estuary ranged from 29 to 269 grams of salt in a liter of water. For comparison, the salinity of water in the Black Sea off the coast of Odessa usually does not exceed 18, and in the oceans - 35 grams of salt in one liter. For the extraction of salt, seawater inflowwas required and it adversely affected the lithological composition of the mud. The shells and crystals of gypsum have appeared there.For example, on Lake Saki priority was given to the extraction of salt and as a result of regular

seawater inflow to the estuary, gypsum crystals began to form, as a result of which therapeutic muds lost their resource.

The water disposal was a sharp issue while developing the city. It is important to understand that the Odessa city agglomeration is located in the coastal zone, where a network of sanatoria and rest homes has been created, which excludes the traditional ways of discharging sewage water. The lowest place in the city was the "Peresyp", where the sewage drains went. In the so-called "irrigation fields", water flowed along the drainage ditches and was fed to special sections for filtration. By 1937 "irrigation fields" with nets and roads occupied 1200 hectares, of which 140 hectares were under the fields of filtration. In the early 70s in Odessa, water consumption increased to 610 thousand m^3/day. This factor and the cholera epidemic in 1970 caused the decision to use the capacity of the Hadzhibey estuary as a sewage sump. The recreational and balneological resources of this estuary have forever lost.The Kuyalnik estuary, due to the natural process of sedimentation, had been constantly "silted up" as a result of which, at the estuary levels permissible at the beginning of the 19th century, the muds of the estuary began to be denuded. The estuary became practically unfit for bathing, mud resources began to degrade. In addition, the drainage basin had begun to be subjected to intensive anthropogenic load and in the end, the mud of the estuary was contaminated with synthetic toxic substances, petroleum products and heavy metals, pesticides. According to scientists, despite the external signs, the mud resources of the estuary are practically not lost. Ecological and geochemical studies of the ecosystem of the Kuyalnik estuary at a high scientific level are studied by the physicochemical institute for the protection of the environment and human NAS of Ukraine. According to scientists, the ecological state of the estuary is close to critical and the inflow of polluted seawater into the estuary can be disastrous.

In December 2014 - April 2015, contrary to the expert opinions of the listed scientific organizations, about 9 million m^3 of water from the Odessa Gulf was discharged into the estuaryand the water level rose by 24 cm. Together with the water, about 90 thousand tons of dissolved and suspended organic substances were discharged into the estuary, including oil products, synthetic toxic substances, pesticides, heavy metals. In the spring-summer period, an outbreak of hydrobionts development was recorded in the estuary, the natural consequence of which was their death and further decomposition of organic matter in the shallow water part of the estuary. The appearance of the smell of rotting organic matter led to a practical breakdown in the resort season in 2015.In September 2015, due to the lowering of the water temperature, its solubility decreased, and the precipitation of salts began. It became obvious that the seawater inflow to the estuary had not led to a decrease in its salinity, which was the main goal of the project for pumping seawater into the estuary. The level of the estuary did not increase, as scientists had warned on the basis of centuries of observations. Obviously, the ecological and geochemical conditions of the Kuyalnik estuary deteriorated sharply.

In the case of the realization of the project on connecting the Hadzhibey estuary with the sea, unlike the Kuyalnik estuary, it will be necessary to ensure environmental safety in the Odessa Gulf. This responsibility is assigned to the state environmental inspection of the NW of the Black Sea area. So, as a result of scientifically unjustified economic activity, conditions were created for an ecological catastrophe in the estuaries of Sasyk and Hadzhibey. In the estuary of Saki and Kuyalnik as a result of scientifically unjustified economic activity in the form of the seawater inflow, the resources of therapeutic mud are destroyed, in the first case irretrievably.

In the current situation it is important to understand that for the Kuyalnik estuary the waters of the Odessa Gulf should be regarded as a source of pollution. On the other hand, for

the Hadzhibey estuary, seawater has the resource of increasing its assimilation capacity and can promote its self-purification to the level, for example, of the Tiligul estuary.

Thus, scientifically unjustified nature management with respect to estuaries in the Odessa city limits requires urgent measures to restore the ecosystem of the Hadzhibey estuary and to cancel erroneous decisions on the "rescue" of the Kuyalnik estuary.

Scientific adviser – Doctor of Technical Sciences,
Professor Bondar S.N.

Bibliography

1. https://odessitua.com
2. Encyclopaedia of the Kuyalnik Estuary, Vol. 1. Ecological and geochemical studies of the Kuyalnik estuary. - Odessa: "Osvita Ukraine", 2017. - 336 p
3. “Odessa Estuary: Local Lore Studies”. – Odessa,“Mayak”, 1980 – 72 p
4. http://odessa.club.com.ua
5. http://kuyalnik.info
6. http://dumskaya.net
7. http://wikipedia.org

BALANCED PUPPED OILS FOR FOOD AND COSMETIC PRODUCTS

Lanzhenko L.O, Ivashchenko A.A, Manukyan V.O.

Creation of safe, high-quality and full-fledged functional products, balanced by the main nutrients, has become a «right» trend for the food and cosmetics industries [1].

The concept of a healthy lifestyle involves the use of various skin care products and the consumption of foods that contain exclusively natural substances and are balanced, in particular, with polyunsaturated fatty acids (PUFA) [1, 2].

Vegetable oils provide the human PUFA with a wide range of biologically active substances; nourish, soften and moisturize the skin, prevent its aging, increase tone, elasticity and elasticity of the skin.

Today, developing formulations of food products and cosmetics that would provide the most positive effect for the body, are guided by the composition of fatty acids and the recommended proportions between the main fatty acids [3, 4].

The optimum ratio of ω-6: ω-3 PUFA is 10: 1. High PUFA products have antiatherosclerotic, antiarrhythmic, anti-inflammatory and anti-allergic properties and can be used to prevent cardiovascular disease, including atherosclerosis, angina pectoris, arrhythmia, thrombosis, as well as in the treatment of acute and chronic inflammation[5].

Therefore, **the purpose of the work** was to choose vegetable oils for the production of balanced PUFA blended oils.

The objects of research were selected unrefined sunflower, linseed, grape and mustard oil, obtained by cold pressingtechnique at LLC «AVA» (Odessa plant of stone and vegetable oils).

The selected vegetable oils have a different ratio of fatty acids and contain different amounts of saturated (SFA), monounsaturated (MUFA) and polyunsaturated fatty acids (PUFA) (Table 1).

Наукове видання

Збірник наукових праць молодих учених, аспірантів та студентів

Том 1

Головний редактор, д-р техн. наук, проф. Б.В. Єгоров
Заст. головного редактора, канд. техн. наук, доц. Н.М. Поварова
Відповідальний редактор, д-р техн. наук, проф. Г.М. Станкевич
Технічні редактори А.В. Коваль, Т.Л. Дьяченко

Ум. друк. арк. 27,9.