

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ ХАРЧОВИХ ТЕХНОЛОГІЙ  
НАЦІОНАЛЬНИЙ ЕРАЗМУС+ ОФІС В УКРАЇНІ**



## **МАТЕРІАЛИ**

**І МІЖНАРОДНОЇ НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ**

### **Проблеми і практичні підходи виробництва та регулювання використання харчових добавок в країнах Європейського Союзу та в Україні**

в рамках проєкту програми ЄС ЕРАЗМУС+  
Жан Моне Модуль (#620521-EPP-1-2020-1-UA-EPPJMO-MODULE)



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in the European Union countries and in Ukraine**

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В збірнику представлено тези доповідей Першої міжнародної науково-практичної конференції «Проблеми і практичні підходи виробництва та регулювання використання харчових добавок в країнах Європейського Союзу та в Україні», що проходила 30 листопада 2021 р. у Національному університеті харчових технологій, Київ, Україна (онлайн) у рамках проекту програми ЕРАЗМУС+ Жан Моне Модуль (#620521-EPP-1-2020-1-UA-EPPJMO-MODULE). В представлених матеріалах висвітлено актуальні питання та результати досліджень щодо регулювання використання, практичних рекомендацій застосування, контролю харчових добавок в різних галузях харчової промисловості країн Європейського Союзу та України.

**Proceedings of the I<sup>st</sup> International Scientific and Practical Conference "Problems and practical approaches to the production and regulation of the use of food additives in the European Union countries and in Ukraine", November 30, 2021. - K.: NUFT, 2021**

Proceedings of the I<sup>st</sup> International Scientific and Practical Conference "Problems and practical approaches to the production and regulation of the use of food additives in the European Union countries and in Ukraine" present abstracts of the reports of the conference, which was held on November 30, 2021 at National University of Food Technologies, Kyiv, Ukraine (online) in term of the EU Erasmus+ project Jean Monnet Module (#620521-EPP-1-2020-1-UA-EPPJMO-MODULE). The abstracts of the reports present topical issues and results of research on regulation of use, practical recommendations for use, control of food additives in various sectors of the food industry in the countries of the European Union and Ukraine.

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## **FEATURES OF CONTROL OF FOOD ADDITIVES FROM NATURAL RAW MATERIALS**

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With the development of the chemical industry, the share of natural ingredients, due to the use of various additives in food products is gradually decreasing every year, which negatively affects human health. Today, among the priorities of the XXI century, it is the rational nutrition of the world's population that has put in the first place the search for natural sources to create food that should be environmentally friendly, affordable, nutritious and useful, and fully ensure human nutrition. Technical hemp is such a traditional natural raw material for Ukraine with great potential for food production.

At present, many countries around the world use seed hemp - as a promising biologically active ingredient for the food industry. The energy value of industrial hemp seeds is 553 kcal, which is a mediocre indicator among oilseeds. IN100 g the seeds are contained 31.56 proteins, 23.45 carbohydrates and 48.75fats. For comparison, sesame (664 kcal), peanuts (620 kcal) and sunflower (584.4 kcal) have the highest energy value, and mustard (508.1 kcal) and flax (534 kcal) have the lowest [1]. Hemp seeds are an analogue of flax seeds, but they have more Omega-3 and Omega-6 acids than any other nut and seed. This unique composition of hemp seeds allows us to call this raw material Superfood [2].

Research centers around the world have joined the active search for new, unconventional sources of protein that would allow to obtain cheap, biologically complete products [3]. In the hemp seeds, for example, the protein content (17-25%) is second only

to soybeans, and the proteins contained in the seeds are digested much easier than soybeans [4]. The high nutritional value and functional and technological properties of proteins in hemp seeds determine a wide range of applications of food products from hemp seeds around the world, including for the creation of food additives (meal, bran, protein, etc.).

Hemp seed meal is a plant food supplement in the form of a powder from low-fat hemp seeds. Due to the content of B vitamins, zinc, magnesium, potassium, calcium, iron, carotenoids, Omega-3 and Omega-6 fatty acids, this food supplement normalizes the work of the gastrointestinal tract, improves digestion, promotes the excretion of toxins and toxins [5].

Hemp bran is used in food as a product that restores and improves digestion. They contain 65% fiber, which removes toxins that have accumulated in the human colon, and prevents their further formation, also help to lose weight, restore metabolism and reduce blood sugar. Hemp bran differs from similar products from corn, wheat, oats, flax, mustard and sesame in that they have a high content of vitamin B6 and mineral elements, %: iron - 78.06, zinc - 51.88, phosphorus - 6.46, magnesium - 1.75 [6]. In addition, they found a significant content of coarse fibers (cellulose, hemicellulose, pectin and lignin) [6].

Hemp protein is a complete protein from hemp seeds; contains highly digestible proteins, hemp oil and essential fatty acids. Ground hemp seed powder contains about 50% protein, has all 20 amino acids, including 8 essential, 12% fat (valuable Omega-3 (2.4%), Omega-6 (6.6%) and Omega-9 (1.8%) fatty acids), vitamins, trace elements, rich in plant fiber (21.0%). The energy value of hemp protein is 447 kcal [6].

In Ukraine, there are more and more producers of organic products from hemp seeds. Thus, the Ukrainian company VITEO Hemp grows hemp and makes Superfood from it - a protein that can completely replace meat [7]. Due to imperfect legislation, Ukrainian producers can only work with seeds and fiber. At present, technical hemp seeds in Ukraine are mainly exported to Europe and the Middle East, and cooperation with Iran is planned. Several companies work under contracts for South and North America, but this market is only opening up for our manufacturers [6].

According to Article 189 of Regulation (EC) 1308/2013 of the European Union, all cannabis imports are currently subject to an import license. In addition:

- raw true hemp under CN code 5302 10 must have a tetrahydrocannabinol (THC) content of not more than 0.2%;
- hemp seeds for sowing must be accompanied by proof that the THC content of the respective variety does not exceed 0.2%;
- hemp seeds that have not been used for sowing may only be imported with the permission of the EU countries, and authorized importers must provide evidence that the seeds have been placed in a condition that precludes their use for sowing;

- EU countries may also apply more restrictive rules in accordance with EU treaties and international obligations [8].

Thus, in the EU, food additives are regulated by Directive № 2002/46 / EC of 10 June 2002 on the approximation of the laws of the Member States relating to food additives. Regulated dietary supplements include only vitamins and minerals. In addition, dietary supplements may contain only the vitamins and mineral salts listed in Annex I to the Directive and the vitamins and minerals listed in Annex II (individually or in combination).

In Ukraine, the issue of regulating the production and use of dietary supplements is regulated by the Hygienic Requirements for Dietary Supplements. According to the legislation of Ukraine in the production of food and products in circulation, can use only those food additives that are included in the State Register of food additives permitted for use in food products. However, to date, such a register has not been created, and there is no current list of permitted or prohibited food additives. Therefore, in practice, the manufacturer or market operator should be guided by the register of permitted EU dietary and food additives.

On 16 December 2008, the European Union adopted a package of legislative measures on food additives, which significantly changed the set of specific regulatory requirements that previously existed in the EU and significantly increased the level of harmonization of legislation in the member states. The package includes: EU Regulation №1331 / 2008 on the establishment of a single procedure for authorization of food additives, food enzymes and food flavors; EU Regulation №1332 / 2008 on food enzymes; EU Regulation №1333 / 2008 on food additives; EU Regulation №1334 / 2008 on flavorings and certain food ingredients with flavored properties, used in foodstuffs.

In Ukraine, the issue of terminology and registration of food additives is defined in the law "On basic principles and requirements for food safety and quality". According to the law, food additives, flavorings (except for a separate group of flavorings defined by the Ministry of Health), enzymes are subject to state registration. Sanitary rules and regulations on the use of food additives, approved by the order of the Ministry of Health of Ukraine, apply to food additives and products with them, which come for sale in Ukraine, are produced at the food industry and catering [9].

Currently, work on the development of a modern regulatory framework in Ukraine is ongoing and is very necessary to eliminate barriers to trade in food products from technical hemp seeds. All this in the future will give impetus to the development of primary and in-depth processing of hemp products. This, in turn, will pave the way for attracting investment income, which will ensure the development of various sectors of the economy as a whole.

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**ВИЗНАЧЕННЯ ПРИСУТНОСТІ БАРВНИКА  
У МОЛОЦІ ЗГУЩЕНОМУ З ЦУКРОМ**

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Питання виявлення та попередження потрапляння на ринок і безпосередньо до споживачів неякісної та небезпечної продукції покладено на Держпродспоживслужбу. Нині на офіційному сайті організації та часто із посиланням на повідомлення міжнародної системи RASFF, що вказує на масштабність проблеми, оприлюднюється інформація про вилучення та відкликання



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