UGC:57. 574:608

INTERNATIONAL STANDARDS OF ECOLOGICAL PRODUCTION

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Abstract. *The article describes the results of an analysis of existing international standards in the production of ecologically clean agricultural products, their comparison with the international framework of European standardization, which regulates the rules of organic agriculture, animal husbandry and labeling of organic farming products. Also made an analysis of the use and control of food additives, which are used in the production of organic plant products. It was found that the majority of Ukrainian standards require the renovation and development of new approaches and standards. A significant disadvantage is a relatively low diversity of accepted norms in comparison with other developed countries. It is expedient to revise the existing list of objects of quality standards for the environment, increasing their realism and ensure control over their execution, using existing European standards. Requires Distribution Certification of corporate environmental management systems and audit, as evidence of the process of cleaner production in the specific enterprises taking into account their specific features.*

Keywords: ***environment, standards, production, agriculture, food raw materials.***

Relevance. The last decade of the acute problem of quality food products and food raw materials. The main source of huge amounts of carbohydrates, minerals, vitamins, essential person was and still farm products. Most discussion about the need for a mechanism of production and sales of environmentally friendly products, which is able to interest AIC employees.

Eco-friendly products is considered to be compliant with the requirements of the law, that is, having the nutritional value, improves health and has no carcinogenic, mutagenic or other adverse effects on the human body as a result of its consumption; the legal status of environmentally friendly products is determined by the relevant sanitary and veterinary regulations.

The traditional food industry is the only way to ensure the growing population with food sees the use of the achievements of chemistry and genetic engineering, which allows to increase productivity. Organic production requires the preservation of natural resources and human health through the use of only natural farming methods. This idea is stressed, for example, the president of the Federation of Organic Food Industry in Germany (BOLW) Felix Prince Loewenstein. He was confident that the correct method of agriculture - not genetic engineering, and organic production, which is able to feed the world.

Analysis of recent research and publications. The concept of "ecological (organic, biological) production" has been fixed in the EU directive "Pan-European agreement on organic production of agricultural products number 2092/91 of 24 June 1991". On June 1, 2009 there is a new directive under the number 834/2007. It defines:

1) Standards for Organic Agriculture. The ban on the use of the farms that produce environmentally friendly products, genetically modified seeds, cloning and irradiation, and synthetic chemicals soil cultivation and crop protection. Using only the inoculum grown in farms.

2) The rules of ecological farming. Using feed exclusively environmental, non-synthetic additives, growth promoters and gene technology. Free paddock and grazing animals in summer. The ban on livestock tethered.

3) Marking of organic farming products. Until July 2010 the same for all manufacturers of the EU Member States the logo was used on a voluntary basis, at the same time there were private and national logos. Now has a new compulsory logo - the so-called Bioleafe. To obtain permission to use it is necessary that 95% of the ingredients were of organic origin, and the product was packaged itself in such a way as to change its contents could only having opened the packaging. This still does not prohibit the use of private and national logos, but they do not occupy a central position in relation to the EU label. Also new labeling requires a special code next to the logo, which identifies the country of origin and control point number. For products imported from countries outside the European Union, the logo can be used freely - as well as for marking bulk product. Goods issued before July 1, 2010 are not subject to the new labeling.

The ecological farms EU produced legumes and cereals, milk, tea, honey, mushrooms, eggs, meat, milk and dairy products, vegetables, marine aquaculture, yeast, wine. According to the agency RosBusinessConsulting (RBC), the global bio market turnover is 36.4 billion euros, the average annual increase - 4 billion euros. Moreover, the

organic products market was practically not affected by the economic crisis. Since 2008, Europe recorded a 10 percent increase in sales ecoproduction. In terms of size of the market leaders are Germany, France and the UK (according to Agrarmarkt Informationsgesellschaft AMI (D)). This is a low rate compared with the 2000-2008 years, but against the backdrop of the global economic situation, they are very impressive.[1]

The aim of research was to study the basic provisions of European standards of production eco-products, as well as compared to international standards of quality at all stages of production.

Materials and methods of research. Due to the fact that ecology as a science is interdisciplinary in nature, in addition to biological principles, on the basis of geographical, technical, economic and social sciences, mathematics, health, weather in the analysis of existing standards, we used the methods of compilation, analysis and interpretation of material.

Results and analysis. All products are marked with such signs, subjected to careful control at all stages of production and sale. Control over the quality of production means:

— organic food production in isolated areas, in order to prevent mixing products

— supervising organizations produce annual inspections of places of production, also have the right to unannounced inspection and control. After each inspection report is compiled, the inspecting organization.

— businesses must prove the origin of the document, the number and type of fertilizer, feed, protection of plants and animals, including their use.

— accounting should reflect the daily number of products sold, its appearance, as well as information about the buyer, which sells its products. And, of course, keeping the products sold to the final buyer.

— labeling organic products can have only those products that pass inspection by the inspecting organizations.

These requirements are spelled out in the "Ordinance on organic farming and the corresponding labeling of agricultural products supply» №2092 / 91 dated 06.24.91. and include all the EU countries.

In order to get the brand «Demeter» or "Biodin", the farmer has to use biodynamic method of production under the supervision of a representative of the Association of Demeter or Biodin' Association for two years, as well as to sign a contract with these organizations. Evaluation of farmers' activities held each year.

All organic food production process should be made in accordance with the "course of lectures on agriculture", Rudolf Steiner described.

Lectures require that pets and feed them to be produced and grown on the farm as much as possible. The basis of soil fertility - are organic fertilizers, compost from plant residues, biodynamic compost preparations. If you need a delivery of feed, fertilizer, it should be thoroughly checked for compliance with the Demeter requirements.

Do not use nitrogen, phosphate, synthetic fertilizers, potassium salts containing chlorine and lime, phosphorus, ground rocks may be used, depending on local conditions. It is also forbidden to use waste water, garbage, composted waste production, due to the high content of lead, mercury, chromium, zinc, etc. It is strictly forbidden to use synthetic and toxic plant protection products (herbicides, fungicides, insecticides, chemical growth regulators, etc.)[2]

Farmers must comply strictly with the instructions prescribed up to painted the diet of domestic animals and poultry. Feed them must not contain antibiotics, synthetic additives. And the processing of farm products is unacceptable to use nitrites, artificial fillers, etc.

All the activities of the farmer, his planned activities fertilization site, the use of feed for animals and birds must be reported in writing and be approved by the representatives of the Association of Demeter or Biodynamic Association or the local farmer groups. In addition, the annual certification of quality Demeter Association. Admitted to the use of food additives and auxiliary technological means, in accordance with the requirements of

Consider the production of plant products[3]:

- When growing organic plant products is necessary to ensure elimination of the effect of other industries not related to the production of organic products to prevent contamination by radioactive, chemical and biological substances and their compounds, microorganisms and other biological organisms, which constitute a danger to the health of present and future generations (hereinafter - the pollutants).
- Plots of land used for the production of organic products must comply with hygienic standards, requirements for soil. Plots of land, which exceeded hygienic standards for the pollutant content of the soil, should be withdrawn in the production of organic products from the crop rotation.
- Water used for washing or processing of crops, must comply with sanitary and epidemiological requirements for drinking water.
- The use of materials based on polyethylene, polypropylene and other polycarbonate, approved for use in the prescribed manner, to cover the protected structures, synthetic mulch, nets against insects and wrapping of silage. Do not use products based on polyaluminum.

- Allowed to be dried culture air or other physical methods, including the use of heaters, but the combustion products must not pollute it. Using these methods should provide complete combustion. Drying room should be equipped with a forced ventilation system.
- Admitted to the use of food additives and auxiliary technological means, in accordance with the requirements.
- Are allowed to use only the means of monitoring the number of pests and plant disease control, and agrochemicals, which took place in accordance with established procedure the state registration.
- Do not use fertilizer, obtained by processing of abattoir by-products, and fresh blood, as well as urea and Chilean nitrate.
- Do not use synthetic herbicides, fungicides, insecticides and other pesticides.
- Do not use products containing copper in excess of 3 kg / ha per year.
- Do not use synthetic growth regulators and synthetic dyes. An exception is the ethylene as a plant growth regulator.
- Storage of organic products must be kept clean and sanitized means permitted for this purpose.
- Recommended rotation: To maintain balance and stability of the ecosystem should be maintained following the interest proportion of the harvest: Root plants 20% of the total landings Leaves (bushes, trees) - 20% 70% Tsvety- Seeds / plody- 70-80%
- The seed and planting material. Used only for the seed and vegetative propagation material produced in accordance with organic farming methods Organic farming / organic farming suggests that in the case of seed mother plant, and in the case of vegetative propagation material parent plant (plants) a) is produced without the use of genetically modified organisms and / or products manufactured on the basis thereof, b) produced at least one generation or in the case of perennial crops for the growing season 2 in accordance with paragraphs a) and b) par 1. (3) a) seed and vegetative propagation material produced in accordance with the methods of organic farming / organic farming may be used during a transitional period expiring on 31 December 2003, and with the approval of the competent authority of the Member State, if farming using such material for breeding, can provide the inspection agency or inspection bodies, the member state is sufficient evidence that they were not able to buy on the market satisfies the

requirements of para 2 of a suitable material for breeding varieties of the plant species. In this case, it should be applied for the reproduction of material not treated with products not listed in Annex II Part B. The EU Member State shall make known to the other Member States and the EU Commission issued in accordance with this paragraph permits. a) when used to control pests or plant diseases, or for cleaning and disinfecting rooms and stables for the animals - they are necessary for the fight against dangerous pests, as no other biological, agro-technical, physical or breeding alternatives, and - their use preclude any direct contact with the seed material, plants, plant products or animals and animal products; when processing perennials. However, in some cases, for example in direct contact - but only outside the period of fruiting - if it will not have indirect effect on the deposition of product residues in the edible parts of the plant, and their use does not lead to negative impacts on the environment and will not cause environmental pollution;

1. Dietary supplements used in the production of organic products of vegetable origin

№ p/p	Name of food additives	Conditions of use
1	*2*	*3*
1	Calcium carbonate (E 170)	In accordance with the SanPiN 2.3.2.1293-03 *
2	Sulphur dioxide (E220)	For wine products in accordance with SanPiN 2.3.2.1293-03
3	Lactic acid (E270)	For fermented vegetable products, in accordance with SanPiN 2.3.2.1293-03
4	Carbon dioxide (E290)	In accordance with the SanPiN 2.3.2.1293-03
5	Malic acid (E296)	In accordance with the SanPiN 2.3.2.1293-03
6	Ascorbic acid (E300)	In accordance with the SanPiN 2.3.2.1293-03
7	Tocopherols, natural concentrate mixture (E 306)	In accordance with the SanPiN 2.3.2.1293-03
8	Lecithins (E322) - obtained without the use of bleaching agents and organic solvents	In accordance with the SanPiN 2.3.2.1293-03
9	Citric acid (e330)	For products of the fruit and vegetables in accordance with SanPiN 2.3.2.1293-03
10	Sodium tartrate (E 335)	For pastries and cakes in accordance with SanPiN 2.3.2.1293-03
11	Potassium tartrate (E 336)	For cereals, pastry, cakes, in accordance with SanPiN 2.3.2.1293-03
12	Calcium ortho-phosphate 1-substituted (E341i)	Only for lifting in accordance with the test SanPin 2.3.2.1293-03
13	Alginic acid (E400)	In accordance with the SanPiN 2.3.2.1293-03

14	Sodium alginate (E 401)	In accordance with the SanPiN 2.3.2.1293-03
15	Potassium alginate (E 402)	In accordance with the SanPiN 2.3.2.1293-03
16	Agar (E 406)	In accordance with the SanPiN 2.3.2.1293-03
17	Carrageenan (E 407)	In accordance with the SanPiN 2.3.2.1293-03
18	Locust bean tree (410)	In accordance with the SanPiN 2.3.2.1293-03
19	Guar gum (E 412)	In accordance with the SanPiN 2.3.2.1293-03
20	Tragacanth gum (E 413) v	In accordance with the SanPiN 2.3.2.1293-03
21	Gum arabic (E 414)	For dairy products, fats and confectionery products in accordance with SanPiN 2.3.2.1293-03
22	Xanthan gum (E 415)	For products of the fruit and vegetables, based on fats, for cakes and cookies, salads, in accordance with SanPiN 2.3.2.1293-03
23	Karaya gum (E 416)	In accordance with the SanPiN 2.3.2.1293-03
24	Pectin (E 440)	In accordance with the SanPiN 2.3.2.1293-03
25	sodium carbonates (not modified) (E 500)	For cakes and biscuits, confectionery products in accordance with SanPiN 2.3.2.1293-03
26	potassium carbonates (E 501)	For cereal products, cakes and biscuits, confectionery products in accordance with SanPiN 2.3.2.1293-03

1	*2*	*3*
27	Ammonium carbonate (E 503)	In accordance with the SanPiN 2.3.2.1293-03
28	magnesium carbonate (E 504)	In accordance with the SanPiN 2.3.2.1293-03
29	Potassium chloride (E 508)	For frozen fruits and vegetables, canned fruits and vegetables, sauces, vegetables, ketchup and mustard, in accordance with SanPiN 2.3.2.1293-03
30	Calcium chloride (E 509)	For dairy products, products based on fats, fruits and vegetables, soy products, in accordance with SanPiN 2.3.2.1293-03
31	Magnesium chloride (E 511)	For soybean products in accordance with SanPiN 2.3.2.1293-03
32	calcium sulphates (E 516)	For cakes and biscuits, soy products, in accordance with yeast SanPin 2.3.2.1293-03.
33	Sodium hydroxide (E 524)	For cereals, in accordance with SanPiN 2.3.2.1293-03
34	Argon (E 938)	In accordance with the SanPiN 2.3.2.1293-03
35	Nitrogen (E 941)	In accordance with the SanPiN 2.3.2.1293-03
36	Oxygen (E 948)	In accordance with the SanPiN 2.3.2.1293-03

***** - SanPiN 2.3.2.1293-03 "Hygienic requirements for the use of food additives"

Since 2013, the Ukrainian steel producers follow international standards for the production of eco-products. Up to this point the organic stream Federation of Ukraine, founded in 2005, followed by temporarily

used methods of production of organic food. And though the economic crisis in Europe hardly affected the scope of organic production, for the production of all the Ukrainian turned serious. However, in 2011 it adopted a law on organic farming, which gives impetus to the revival of production. Installed the first rules that served as the foundation for further development.[3]

Before the main requirements for organic farming are[4]:

- ensure the proper use and reproduction of natural resources;
- implementation of land conservation technologies in growing crops, which prevent the occurrence of soil erosion or other degradation processes;
- development of organic farming products, which is a biologically valuable qualities and wellness properties;;
- use only certified seed and planting material;
- ban on the use of genetically modified seeds, planting materials and other producers of genetically engineered;
- use of plant species and varieties adapted to the land and climatic conditions; and resistant to pests and diseases;
- prohibition of the use of synthetic pesticides, agrochemicals and dyes;
- implementation of fertilizer application system which provides for the prevention of loss of nutrients into the soil of heavy metals and other substances that have a negative impact on soil biota, as well as the use of mineral fertilizers is only in accordance with special regulations, which do not provide a replacement, but only the addition of nutrients fertilizers;
- use as a fertilizer material of microbial, plant or animal origin, which in organic farming biologically degraded;
- use of fertilizers with animal and human excrement for the cultivation of crops that will be used by people only, subject to the established sanitary requirements;
- use to control pests, plant diseases and weeds of pesticides obtained in the economy based on local plants and animals, as well as thermal and physical methods, as well as mechanical cleaning pests and damaged parts of plants;
- increase the population of beneficial insects, microorganisms and parasites as a natural biological control of pests and plant diseases;
- thermal soil sterilization constraints, which is carried out to control weeds and diseases if it can reduce the productivity of crops and reduce the quality of crop production;

- creation of necessary conditions for the reproduction of natural enemies of pests and diseases of agricultural plants;
- use of properly treated agricultural implements.

All these rules are naturally similar to the European. And rightly it is on the same rules based European standards. Finally, in 2013 Ukraine introduces the management of organic production standards, which comply with international standards. Statistics also shows the growth of exports of organic products.

In 2014, Ukraine adopted a law on organic production: ECO, BIO, organic matter in the Ukraine will now have a single value, friendly to all. Ukrainian law requires all products that have these prefixes have certificates on organic production, or not use these prefixes in the product name, advertising, etc. This was done in order to give a guarantee to the consumer confidence in the products and raw materials labeled as organic, and support organic growing market in Ukraine.

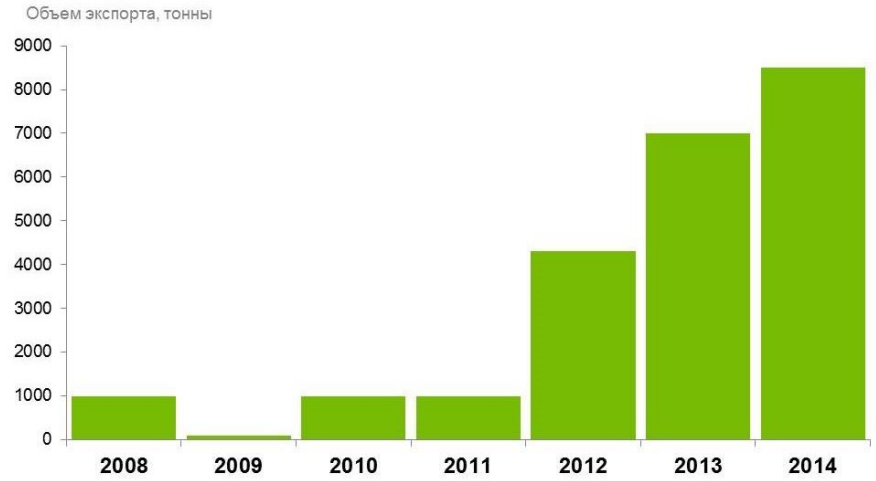

Figure 1. The growth of Ukrainian exports of organic products

However, market participants fear that the issuance of certificates of any corruption. There is a risk that in the context of corruption, far from organic production, can obtain this certificate in Ukraine. On the contrary – his extradition may be difficult for those companies that, for example, already have an international certificate [2].

Results and Prospects. So, the majority of Ukrainian standards require the renovation and development of new approaches and standards. A significant disadvantage is a relatively low diversity of accepted norms in comparison with other developed countries. It is expedient to revise the existing list of objects of quality standards for the environment, increasing their realism and ensure control over their execution, using existing European standards. Requires Distribution Certification of corporate environmental management systems and audit, as evidence of the process of cleaner production in the specific enterprises taking into account their specific.

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МЕЖДУНАРОДНЫЕ СТАНДАРТЫ ПРОИЗВОДСТВА ЭКОЛОГИЧЕСКИ ЧИСТОЙ ПРОДУКЦИИ

Наумовская Е. И., Скобцов А. Ю., Молдаван Л. П.

Аннотация. *В статье рассмотрены результаты анализа действующих международных стандартов в области производства экологически чистой сельскохозяйственной продукции, их сравнение с международной европейской базой стандартизации, которая регулирует нормы экологического земледелия, животноводства и маркировку продуктов экологического сельского хозяйства. Также осуществлен анализ применения и контроля пищевых добавок, которые используются при производстве органических продуктов растительного происхождения. Установлено, что большинство украинских стандартов требуют обновления и разработки принципиально новых подходов и нормативов. Значительным недостатком есть относительно низкое разнообразие принятых норм в сравнении с другими развитыми странами мира. Целесообразно пересмотреть существующий перечень нормативов качества объектов окружающей среды, повысив их реалистичность и обеспечить контроль за их исполнением, используя уже существующие*

европейские стандарты. Требует распространения сертификация корпоративных систем экологического управления и аудита, как свидетельство процесса экологизации производства на конкретных предприятиях учитывая их специфику.

Ключевые слова: ***экология, стандарты, производство, сельское хозяйство, продовольственное сырье.***

МІЖНАРОДНІ СТАНДАРТИ ВИРОБНИЦТВА ЕКОЛОГІЧНО ЧИСТОЇ ПРОДУКЦІЇ

Наумовська О. І., Скобцов О. Ю., Молдаван Л. П.

Анотація. *У статті розглянуто результати аналізу чинних міжнародних стандартів в галузі виробництва екологічно чистої сільськогосподарської продукції, їх порівняння з міжнародної європейської базою стандартизації, яка регулює норми екологічного землеробства, тваринництва та маркування продуктів екологічного сільського господарства. Також здійснено аналіз застосування та контролю харчових добавок, які використовуються при виробництві органічних продуктів рослинного походження. Встановлено, що більшість українських стандартів вимагають поновлення і розробки принципово нових підходів і нормативів. Значним недоліком є відносно низька різноманітність прийнятих норм в порівнянні з іншими розвиненими країнами світу. Доцільно переглянути існуючий перелік нормативів якості об'єктів навколишнього середовища, підвищивши їх реалістичність і забезпечити контроль за їх виконанням, використовуючи вже існуючі європейські стандарти. Поширення вимагає сертифікація корпоративних систем екологічного управління та аудиту, як свідчення процесу екологізації виробництва на конкретних підприємствах з огляду на їх специфіку.*

Ключові слова: ***екологія, стандарти, виробництво, сільське господарство, продовольча сировина.***