

Natalia G. Tsaruk<sup>1</sup>

## IMPROVEMENT OF STATISTICAL REPORTING ON VEGETABLES PRODUCTION AND SALE TAKING INTO ACCOUNT QUALITY CRITERIA

*The article substantiates the necessity to improve the existing reporting system of statistical indicators due to the development of a new appendix to form # 50-ag "The main economic indicators of agricultural enterprises", "Information about production and sale of vegetable products according to the criteria of their quality compliance with certification requirements". The article suggests giving the data on vegetables compliance with certification requirements in terms of manufactured and sold products and distribution channels. Such reporting will serve as the basis for stimulating the certification of vegetable production.*

*Keywords:* vegetables production; statistical reporting; ISO quality; agriculture; free trade zone with EU.

Наталія Г. Царук

## УДОСКОНАЛЕННЯ СТАТИСТИЧНОЇ ЗВІТНОСТІ ПРО ВИРОБНИЦТВО ТА ПРОДАЖ ОВОЧІВ З УРАХУВАННЯМ КРИТЕРІЇВ ЯКОСТІ

*У статті обґрунтовано необхідність удосконалення існуючої системи звітних статистичних показників за рахунок розробки нового додатку до форми № 50-сг «Основні економічні показники роботи сільськогосподарських підприємств» «Інформація про виробництво та продаж овочевої продукції за критерієм відповідності її якості сертифікаційним вимогам». Запропоновано подавати дані про відповідність овочів сертифікаційним вимогам у розрізі виробленої і реалізованої продукції та каналів збуту. Така звітність слугуватиме основою для стимулювання сертифікації овочевої продукції.*

*Ключові слова:* овочівництво; статистична звітність; якість відповідно до ISO; сільськогосподарство; зона безмитної торгівлі з ЄС.

*Рис. 1. Табл. 1. Літ. 14.*

Наталія Г. Царук

## УСОВЕРШЕНСТВОВАНИЕ СТАТИСТИЧЕСКОЙ ОТЧЕТНОСТИ О ПРОИЗВОДСТВЕ И ПРОДАЖЕ ОВОЩЕЙ С УЧЕТОМ КРИТЕРИЕВ КАЧЕСТВА

*В статье обоснована необходимость совершенствования существующей системы отчетных статистических показателей за счет разработки нового приложения к форме № 50-сх «Основные экономические показатели работы сельскохозяйственных предприятий» «Информация о производстве и продаже овощной продукции по критерию соответствия ее качества сертификационным требованиям». Предложено подавать данные о соответствии овощей сертификационным требованиям в разрезе производимой и реализуемой продукции и каналов сбыта. Такая отчетность будет служить основой для стимулирования сертификации овощной продукции.*

*Ключевые слова:* овощеводство; статистическая отчетность; качество согласно ISO; сельское хозяйство; зона беспошлинной торговли с ЕС.

**Problem statement.** Competitiveness of domestic agricultural production, including the vegetable one, depends not only on price factors, but also on quality indicators. In the light of Eurointegration process, in particular, the free trade zone

<sup>1</sup> Nizhyn Agrotechnical Institute, Ukraine.

with the EU, indicators of vegetable quality are becoming the main condition for the possibility of their trouble-free sales at neighbouring.

The interest of our country in stable development of national vegetable production should be demonstrated through creating mechanisms stimulating and supporting certification. To determine the amount of resources and scale of activities related to this support, the government must have full information on the current state of quality assurance in vegetable production. No less important is information about vegetables production meeting European requirements for the purposes of assessing the export potential of the industry.

Such information with the appropriate level of confidence can be received by authorities only from one source – internal information systems of agricultural enterprises, in particular, accounting. Therefore, the question about the importance of preparation and presentation of reporting on production and sale of vegetable products according to the criteria of their certification state is literary the vital one.

**Recent research and publications analysis.** Researchers pay much attention to importance of adaptation of national system of agrarian product standardization and certification according to the EU standards, but along with it, the issue of information support for the proposed reforms is out of their attention. However, establishment and further support of the well functioning system of standardization and certification of agricultural products in Ukraine is possible only through a system of registration and further analytical support for vegetable production, which is confirmed both by foreign and domestic experience.

**The purpose of the article** is to substantiate the need to expand the information capacity of statistical reporting in vegetable production according to the European quality standards and to develop appropriate approaches to it.

**Key research findings.** Today the demand for ecologically clean agricultural products is growing in the world. Ukraine has significant competitive advantages: black soils, small amount of fertilizers, herbicides and chemicals in soils. Product certification according to the standards of environmental cleanliness in the future should facilitate the access of domestic producers to European markets.

The key organic vegetable crops in our country are cucumbers, tomatoes, cabbage, onions, beets, carrots, peppers and salad. However, only 12 regions are involved in certified organic vegetable-growing.

Ukraine has prospects for entering international markets primarily through deepening partnership with the European Union by creating the free trade area. However, unlike the EU, Ukraine has no clear, adequate to current threats and challenges agricultural policy, because the current management system in national agro-industrial complex is inadequate to realities, determined, above all, by the lack of analytical support of food industries. Therefore, without scientific justification and practical implementation of such a system the negative impact of this factor on the competitive position of Ukrainian agricultural sector in the world will only grow over time, increasing the vulnerability of national agriculture to external and internal influences.

In the context of increasing the EU common agricultural policy effectiveness, and as a consequence – effectiveness of its agricultural sector, it is more urgent for Ukraine to solve the problem of safety standards and food quality accordance to

requirements of the World Trade Organization (WTO) and their harmonization with laws, regulations and standards of the EU, which will give Ukraine more access to markets and financial support programs of the European Union, as well as provide significant foreign direct investments into the agro-industrial sector.

Information on quality standards in vegetable production is an important component of the information support system for development management of vegetable production (Decree of the President of Ukraine, 23.02.2001, # 113/2001). Standardization is a normative method of management in the form of regulations that are legally binding. Standards in vegetable growing can be divided into 6 major groups: terms and definitions; seed production and seed quality; resulting product quality; post-harvest care, storage and transportation of processed products.

In addition to these major groups, vegetable growers should know and use the standards of soil science, agricultural chemistry, plant protection, environmental protection, labor safety, agricultural machinery, methods of chemical composition analysis and other regulatory documents.

The basis for the development of these standards and amendments are the laws of Ukraine, Orders of the President of Ukraine, Resolutions of the Cabinet of Ministers, since 2003 – also the Bulletin of information materials on standardization, metrology and certification.

Application of international standards will help Ukrainian agricultural producers better assess their capabilities and introduce new technologies into production, which will help develop more effective European markets (Sych, 2007).

Organizational and legal basis for state regulation of safety and quality of food products and raw materials in Ukraine practically has not undergone any significant changes since Soviet times. As a result, the existing mechanism primarily serves the interests of state control but not public interests.

Accordingly, the reform of control system of food products quality in Ukraine should start with creation of an enforcement system for state functions, which, as international experience shows, are in the development and adoption of relevant legislation; providing risk analysis area; taking necessary steps to prevent, eliminate or bring risks to an acceptable level; organizing official control for verification of legal requirements realization by enterprises and taking sanctions against enterprises when necessary.

Since 2000 the European Union has started a large-scale reform of state food control system. Standards of information system of food safety are based on the concept "Analysis of hazards and critical control points". On the basis of the concept such basic European standards are developed: ISO 22000: 2005 system of food safety management; IFS (International Food Standard) – international standard for retailers; FSSC 22000: 2010 – standard for producers of certain categories of foodstuff ([icps.com.ua](http://icps.com.ua)).

In Ukraine since July 1, 2003 the national standard ISO 4161-2003 "Systems of food safety management. Requirements" is in force working and on August 1, 2007 the national standard of ISO 22000: 2007 (identical to the international standard ISO 22000: 2005) came into force. However, there is no systematic introduction of these standards in management practice because of the lack of appropriate information support ([www.certsystems.kiev.ua](http://www.certsystems.kiev.ua); [www.agcensus.usda.gov](http://www.agcensus.usda.gov)).

The current system of food control in Ukraine without analytical maintenance of food products quality is characterized by the following potential risks:

- there is no clearly defined organizational structure, thus leading to function duplication between different control bodies, creation of additional obstacles for enterprises, inefficient use of budget funds and uncoordinated actions between authorities;
- there is no single database of information on food quality control, standards of its analytical processing;
- there is no system for evaluating effectiveness and efficiency of measures taken by control organs;
- standardization and certification are significant financial and organizational burden on enterprises, that have to pay for state control twice or even more times: first, to the national budget through taxes, and then directly to these control bodies or other organizations that cooperate with them;
- clear separation of control bodies' power is not established and principles and mechanisms of control system management are not determined at national level;
- Ukraine envisages the mandatory certification of products, which has a storage period of more than a month, such certification systems does not exist in the EU at all, mandatory certification is used only for the purposes of export-import operations;
- Ukraine envisages control/supervision by 2 or (in some cases) 3 regulatory bodies for almost the same indicators, while in the EU official control is carried out by one specific control body;
- there are requirements for development of a quality control national plan and annual reporting on its implementation in the EU, there is nothing like that in Ukraine;
- there is the requirement for the system of quality control in laboratories based on 180 17025 standard as an obligatory condition for official control in the EU, there are not any in Ukraine.

The existing control system of agricultural products without proper information support system not only hampers the overall development of the sector, but also can becomes serious barrier for Ukrainian exports. In our view, the main purpose of reforms on product quality and safety control system as part of trade expansion into the EU is to bring the standard of health and interest protection of people, living in Ukraine, in line with the EU standards on food consumption. As a part of quality control in vegetable production it is possible to achieve this goal only by creating a reporting system on the quality of products at vegetable enterprises in Ukraine, which will make it possible:

- to create a uniform database on food quality;
- to make authorities decisions within the scope of food law, related to vegetable products safety;
- to create an effective and efficient system of official control that meets the principles of market economy and enables removing some barriers for export of products from Ukraine to developed countries;
- balance the public interest in consumers' health and interests protection, on the one hand, and the interests of entrepreneurs involved in vegetable growing, on the other.

In the future, accounting and analytical support for vegetable production management in the context of European integration should be considered, and not just by those engaged in direct vegetable production, but also by those that determine the level of consumption and influence on it. Each of the related groups has its own interests, which may not be the same (Table 1).

*Table 1. Analysis of motivational mechanisms for the free trade zone of Ukraine with the EU by the groups of interests (vegetable production sector), author's development*

Market subjects	Positive effects	Negative effects
Ukrainian manufacturers of vegetables	Expanding of sales markets. Increase of product quality. Production efficiency increase	Increased competition. Additional expenses on certification
Trade intermediaries	-	Reducing the number of intermediaries between manufacturers and sellers
European manufacturers of vegetable products	Expanding sales markets	Increased competition
Ukrainian consumers of vegetable products / National economy of Ukraine overall	Increasing the supply of vegetable products to the markets. Improving product quality. Reducing product price. Development related to services, retail and logistics	Increasing public expenditure on laboratories
European consumers of vegetable products / EU economy	Increasing the supply of vegetable products to markets. Reduced prices	Increasing costs of technical assistance to Ukraine

To achieve the goal of domestic vegetable market integration into the European one by improving its quality, it is important to reform the control system of product quality and safety within deep free trade zone through standards harmonization. This will ensure the implementation of the following measures:

- preparation of necessary regulations to harmonize food laws with the documents of relevant international and national organizations and the EU legislation;
- providing information for decision-making, in particular on terms regulating vegetable products quality;
- information support for food legislation related to vegetable products safety;
- creating an effective and efficient system of official control that meets the principles of market economy and enables removing some barriers for exports from Ukraine to developed countries;
- providing a balance of society's interests as for health and consumers' interest protection, on the one hand, and interests of vegetable sector entrepreneurs, on the other.

Control over safety and quality of vegetable products should be based on the following principles: comprehensiveness and integrity; allocation of responsibility and ensuring product safety, consumer information; transparency; compliance with international standards.

Accounting and analytical support for vegetable production management quality control, in our view, will provide:

- increased efficiency, effectiveness and transparency of official control over vegetable production quality;
- removal of unjustified (in terms of vegetable products safety and their individual quality indicators) obstacles to entrepreneurial activity.

Concluding an agreement on free trade zone with the EU, it is important for Ukraine to prove that its control system will be able to provide the level of product safety, as required by the EU. The reporting system of enterprises on the quality of products they produce and sell is necessary for this. Transparent system of quality control will facilitate the flow of European investments to domestic enterprises of the vegetable sub-sector of agriculture (Order of the State Statistics Service of Ukraine, 17.07.2012, # 301).

In order to take necessary steps towards standardization and certification of vegetable production, the state needs relevant information on actual correspondence of vegetable growing to established standards. Currently, the contents of agricultural enterprises' reporting on production and sale of agricultural products, including vegetable products, is governed and regulated by the State Statistics Service of Ukraine. Thus, state statistical observations on the gross crop yields and further sales are made.

Therefore, one of the main functions of accounting and analytical support in vegetable management in terms Eurointegration processes is the improvement of statistical reporting of agricultural enterprises on production and sales of vegetable products.

Instruments for drawing up a statistical report on vegetable production are the form # 29-ag "Results of harvesting crops, fruits, berries and grapes" and # 29-ag (reclamation) which is on agricultural products from irrigated lands (Order of the State Statistics Service of Ukraine, 14.06.2013, # 181).

At the regional level state statistics bodies calculate all indicators as for all crops and harvested areas, volumes of crop production in small enterprises; current and annual indicators in farms. Later this is delivered to the state level in the relevant forms within the existing statistical information electronic processing.

The results of state statistical observations of crop statistics by forms 29-ag and 29-ag (reclamation) are formed:

- at the district level – aggregate district information as a whole, on organizational and legal forms of entities (annually) and the database of enterprises;
- at the regional level: regional information as a whole, on categories of development, on organizational-legal forms of entities (annually), for a region and enterprises (monthly, annually, classified by individual indicators);
- at the national level: country summarized information; on regions (oblasts); on organizational and legal forms of management at enterprises (annually, classified by individual indicators); on categories of development according to the classifier.

In addition to statistical reporting, which reflecting information of agricultural crops, one of the major statistical reports on agricultural enterprises activities, including vegetable production, is form # 50-ag "Main economic indicators of agricultural enterprises" (Order of the State Statistics Service of Ukraine, 2.07.2014, # 206). Detailed information agricultural production by types is contained in the form # 21-ag "Realization of agricultural products" (Order of the State Statistics Service of Ukraine, 2.07.2014, # 206).

Thus, current statistical forms, compiled and submitted by agricultural enterprises, allow the state receive information from vegetable producers on:

1. Vegetable production on indoor and outdoor soil (forms # 29, # 50).
2. Vegetable sales from indoor and outdoor soils (forms # 21, # 50).
3. Results of vegetable enterprises, which produce and sell vegetables from indoor and outdoor soils (form # 50).

At the same time, the issue of the quality of vegetables produced and sold by agricultural enterprises remains open (Figure 1).

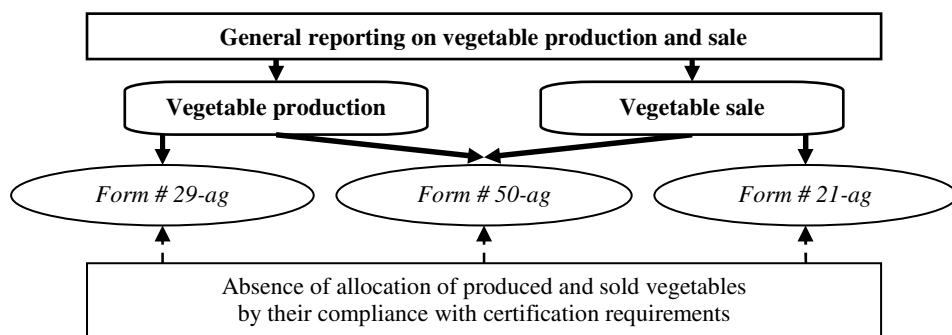


Figure 1. The current state of statistical reporting on the quality of vegetable production, author's development

Solution to this problem could be achieved by either of the following two approaches:

1. By developing a new form of statistical observation (e.g., monthly form Report on vegetable production and sales according to quality criteria) and instructions for their filling.

2. Through addition of this information to the existing statistical forms.

Considering the complexity of accounting work, and the fact that general information on production and sales of vegetable products is already contained in three existing forms, the first option has no logical ground. On the basis of information about production and sale of vegetable products, which is formed by enterprises by the requirements of the State Statistics Service of Ukraine, the development of the addition to the form # 50-ag "Information on production and sale of vegetable products according to conformity of its quality to certification requirements" is acceptable. As we can see in Figure 1, in form # 50-ag data on production, sales and information about crops is consolidated. The same here should be given to information on compliance of vegetable products to certification requirements both in production and sale. Thus, the proposed section should contain information on:

1. Manufactured and sold vegetable products, that meet the certification requirements as for the quality of such products, sold in Ukraine and also exported.

2. Manufactured and sold vegetable products that do not meet the certification requirements to quality of such products, in terms of sale of such products channels (to other enterprises, population, workers as partial salary payment etc.).

Statistical information on the quality of vegetables in the proposed statements are formed separately for each outdoor and indoor vegetable crop. Information on

grown and sold vegetable products will provide the state with relevant data on the current state of vegetable production certification and export capacity of the branch overall. In turn, this will give an opportunity to develop and implement concrete steps to support the certification process as well as to support enterprises that have such certification, ensuring quality competitiveness (Nepochatenko, 2013) in vegetable production. Except vegetable enterprises such statements should be also given by agricultural cooperatives which are also engaged in sales of vegetable products grown by their members.

According to the data of report processing on the quality of vegetable products it will be possible to implement such measures to reform the system of quality control:

- harmonizing food law acts with the provisions of relevant international and national organizations and the EU legislation;
- providing science-based information for decision-making related to food laws, in particular, the implementation of risk assessment system;
- creating an efficient system of official control that meets the principles of market economy and enables removing barriers for exports from Ukraine to developed countries;
- providing state support for certification of vegetable producers and for production that meets environmental and other European standards.

**Conclusions and recommendations for further research.** Creation of the free trade zone between Ukraine and the European Union increases competition in domestic vegetable production. This increases the requirements to quality of vegetables produced by agricultural enterprises in Ukraine. Setting up an actionable certification system on vegetable product quality at the state level will not only contribute to product competitiveness and improvement of domestic producers' image, but would also increase the export potential of the branch in the future. State initiative in the matters of such certification must come from the Ministry of Agrarian Policy and Food of Ukraine. To provide this body with information on current vegetable production compliance with certification requirements is necessary for stimulation of certification, since all producers are offered to submit reporting on manufactured and sold vegetable products according to the criteria of their quality.

#### References:

Про заходи щодо підвищення якості вітчизняної продукції: Указ Президента України від 23.02.2001 № 113/2001 // Голос України.— 2001.— №24.— С. 5–6.

Про затвердження інструкції щодо заповнення форми державного статистичного спостереження № 50-сг «Основні економічні показники роботи сільськогосподарських підприємств»: Наказ Державної служби статистики України від 02.07.2014 № 206 // [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua).

Про затвердження інструкції щодо заповнення форми державного статистичного спостереження № 29-сг «Підсумки збору врожаю сільськогосподарських культур, плодів, ягід та винограду»: Наказ Державної служби статистики України від 14.06.2013 № 181 // [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua).

Про затвердження інструкції щодо заповнення форми державного статистичного спостереження № 29-сг (меліорація), яка складається на збирання сільськогосподарської продукції з политих зрошуваних земель: Наказ Державної служби статистики України від 14.06.2013 № 181 // [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua).

Про затвердження інструкції щодо заповнення форми державного статистичного спостереження № 21-сг «Реалізація сільськогосподарської продукції»: Наказ Державної служби статистики України від 02.07.2014 № 206 // [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua).

Про затвердження форм державних статистичних спостережень у галузі сільського та рибного господарства: Наказ Державної служби статистики України від 17.07.2012 № 301 // [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua).



*Артиш В.І.* Організаційно-економічні передумови формування ринку екологічно чистої продукції в Україні // Економіка АПК.— 2009.— №2. — С. 117—120.

*Бачуріна І.В., Капустіна Т.А.* Тенденції споживання свіжої та переробленої плодоовочевої продукції у світі та Україні // Економіка АПК.— 2008.— №2. — С. 146—151.

*Близький Р.С.* Аналіз експортно-імпортних обсягів продажу овочів в Україні // Економіка-менеджмент-підприємництво.— 2012.— №24, Ч. 1. — С. 46—51

*Непочатенко О.О.* Забезпечення фінансової безпеки аграрних формувань // Формування ринкових відносин в Україні.— 2013.— №12. — С. 110—113.

Реформування системи державного регулювання безпечності та якості харчових продуктів у контексті угоди про поглиблену вільну торгівлю з ЄС // icps.com.ua.

Системи управління безпекою харчових продуктів за ДСТУ 4161 або ISO 22000 // www.certsystems.kiev.ua.

*Сыч З.Д.* Стандартизація в допомогу українському овочеводу // Овощеводство.— 2007.— №5. — С. 10—14.

Publications // USDA Census of Agriculture // www.agcensus.usda.gov.

Стаття надійшла до редакції 8.07.2015.