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INFORMATION SUPPORT AND DEVELOPMENT OF ORGANIC PRODUCTION

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Abstract. The *purpose* of the paper is to justify the organizational and methodological provisions and to develop practical proposals for improving the information support of organic production delineating ways to advance the accounting system. To achieve this goal, we were focused on the next *tasks*: determination of the essence of the state and directions of development of organic production, research of legislative requirements for accounting of organic production and improvement of its accounting information support. *Methodology*. During the research, the following general and specific scientific methods were used: theoretical generalization, analogy, statistical observation, analysis, synthesis, scientific abstraction, critical analysis of accounting issues. *Results*. In the paper, the following issues were investigated: the place of Ukraine in the organic products market, the main advantages and disadvantages of organic products, ways to improve the information support for the development of organic products. It is proved that the establishment of organic agricultural production in Ukraine requires the development of its accounting support. According to the emergence of such support, it is possible to expect the development of this segment of the agricultural sector. *Practical implications.* In this paper, the accounting of organic production is improved considering the necessity of coordination of economic, social, and ecological activities of agricultural enterprises by making documentation of business operations related to organic production, confirming the need for internal control of organic production costs to improve their management efficiency, establishing a work plan of accounts regarding the formation of separate analytical accounts for the process of receipt of biological assets, producing organic products and selling them, as well as creating separate analytical accounts to determine the financial result (based on the proposed analytical calculations, the process of creating production costs and determining revenues can be simplified; if cross-production is carried out at an enterprise, then this technique will help to determine the benefits of organic production over conventional production easily), developing a system of financial and statistical reporting indicators for organic enterprises. *Value/originality.* The improvement of accounting and internal control system can provide the information with the required level of detail to meet the needs of interested users and to make such management decisions that will help to preserve natural resources and reduce the negative impact of enterprise activity on the environmental situation in Ukraine.

Key words: organic production, accounting, agriculture, sustainable development.

JEL Classification: M41, Q01, Q16, Q56

1. Introduction

The use of chemical fertilizers and other synthetic substances in the production process, non-compliance with crop rotation, huge mechanical impact on the soil harm the product's quality. Land degradation is a direct threat to the livelihoods of the billions of people who depend on the environmental situation. Therefore, it is not a problem of the individual, but a global and complex issue that must be solved in the short term. Thus, the problem of increasing the efficiency of agricultural production becomes more acute with every passing year. Especially, if it reduces anthropogenic pressure on the environment.

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One way to overcome these issues is to improve organic production, in which all factors that adversely affect human health and the environment are minimized or eliminated. As a result, organic products will be made.

As of 2018, 186 countries have certificates for the organic production (Research Institute). Overall, according to FiBL, the main indicators of organic production in the world and Ukraine continue to grow.

After analyzing data of 2018, we can conclude that the first largest agricultural area, where organic products are made, is Oceania (50%), and the second is Europe, which occupies 22% of the total area of organic lands. Africa is last on the list with 3% or 2 million hectares (Research Institute).

The sales of organic food and beverage reached 96.68 billion EUR in 2018, an increase of 41.87 billion EUR compared to 2013. Although organic sales are growing at a normal pace, there are still ongoing problems. These include an increase in standards and regulations, concentration of demand (about 90 % of sales in North America (43.01 billion USD), and Europe (the European Union – 37.77 billion EUR)), shortfalls in supply, and competing eco-labels (Research Institute).

Europe ranks second in organic products' sales. It is known that two of three leading countries are located in Europe. In this case, Ukrainian producers have to work on a strategy for efficient organic production for a very long time. But the major solution is the issue of the economic growth in Ukraine, since improving the living standards of people leads to a change in priorities for consumption.

In Ukraine, the decrease started in 2016 may be caused by the new legislation entered into force. However, compared to 2012, the number of such territories has increased. But already in 2018, the situation tends to improve.

In general, organic agriculture in Ukraine is only 0.7% of total agricultural production. However, over the last 10 years, the area of agricultural land has increased by 14.4%. The number of registered organic producers in 2018 also increased to 501, compared with 304 in 2017.

In 2017, for the first time in 5 years, deterioration of the organic products' market had been observed but it is worth mentioning that the volume of the organic production increased in 2018. Compared to 2005, the value of sole organic products has increased by 147 times and amounted to 33.0 million EUR as of 2018 (Research Institute). Overall, according to FiBL, key performance indicators of the organic production in Ukraine and globally continue to rise. Thus, it is reasonable to suspect that the organic production in Ukraine has evolved extremely rapidly. That, in turn, can have a positive impact on realizing the competitive advantages of the Ukrainian economy. The distribution of agricultural lands shows that in Ukraine 309 100 hectares is employed under the organic farming. Currently, Ukraine ranked 23rd in the world ranking and 13th in Europe (Research Institute).

2. Literature review

The following scientists investigated theoretical and practical aspects of accounting support for organic production: V. Zhuk (Zhuk, 2010), V.V. Pyndus, S.D. Horban (Pyndus & Horban, 2018), O.I. Shkuratov (Shkuratov, 2015), V. Ratoshniuk (Ratoshniuk, 2016) and others. A system of accounting and statistical reporting of organic production and information resources for reporting was proposed by Yu.S. Tsal-Tsalko (Tsal-Tsalko, 2018). Nizova L.Yu. and Zolotareva N.S. identified problems of accounting for the production of organic crop products and methods for solving them (Nizova & Zolotareva). Podolianchuk O.A. outlines a new approach to the system of accounting for finished products of agricultural enterprises (Podolianchuk).

Despite the large number of researchers considering this issue, it is possible to note the lack of research and innovative developments in the field of organic production. Also, many issues remain unresolved; accounting support for the development of organic production requires special attention.

3. Results

3.1. Development of organic production

Organic production is a holistic food management and production system that combines best practices taking into account environmental protection, biodiversity conservation, protection of natural resources, the application of high standards of animal housing, and providing such a production method that meets certain requirements.

The development of organic production began in the 60s-70s of the 20th century. That is when a large number of the world's population became

interested in environmental issues and common well-being. Everyone was interested in protecting the environment by minimizing the harmful effects on it. Over time, more and more people have been paying attention to the environmental issues. That is why in the 80-90s of the 20th century the number of producers and consumers of organic products has increased and continues to grow (Pyndus & Horban, 2018).

Organic agricultural production is one of the leading and most promising forms of management in the agricultural sector of the country's economy with the most intensive development of environmentally oriented activities. Therefore, it is worth noting the general trends of organic product development in the agricultural sector of the economy:

1. an increase in the number of producers of organic products;
2. a gradual increase in yields (after the end of the transition period, which indicates a more complete use in the organic production of existing soil cultivation);
3. the growth of sales in the domestic markets;
4. increasing the environmental awareness of the population due to the deterioration of health and the environment;
5. a steady increase in demand for organic products (Shkuratov, 2015).

Despite the prospects of developing export potential, preserving and restoring the quality characteristics of soils, the lack of a legislative framework is a deterrent to organic farming in Ukraine. Another important problem is the low level of awareness, environmental culture, education, and innovation activity of agricultural producers. Thus, to solve the environmental problems of agriculture in Ukraine, it is advisable to develop the legislative framework, to provide state support to farms in the process of certification for conformity to organic production, to create the infrastructure of the market for organic products.

However, despite the legal enshrining of organic production, a methodological toolkit for accounting for organic production, as an information system for internal and external users, has not been developed yet. Therefore, all organic producers also apply regulations that are designed to legally account for conventional agricultural production, which have significant differences in definition and quality, but not in accounting.

3.2. Prospects for the development of information support for organic production

To determine the features of accounting and analytical support of organic production, it will be appropriate to determine its main advantages. Among them there are: a positive impact on the environmental, economic, and social spheres. However, despite all the advantages of organic production, it has several disadvantages. It is the price of organic produce that is the main disadvantage for consumers. According to the State Statistics Service, Ukrainians began to spend less on food, but the cost of food is almost half the income (47%) (Official website of the State Statistics Service). Although the prices for products in Ukraine and Europe are practically the same, the wages of the average Ukrainian differ significantly from the wages of the same citizens in neighboring countries. According to statistics, the average monthly salary in Belarus is 488 EUR, in Hungary – 1 132 EUR, in Poland – 1 188 EUR, in Spain – 1 992 EUR, in Ukraine – 382 EUR. Prices for daily demand products in Ukraine are at or above European levels (The prices of some products). People are often unable to secure necessities, let alone purchase expensive organic products.

The transition to organic production in the initial stages may be accompanied by losses. For this reason, the area used for organic production in Ukraine is less than 1% of the total cultivable area.

Today, most Ukrainian farms are engaged in growing organic products in parallel with conventional ones. A large number of producers are experimenting with organics as a complement to the main conventional production. The transition from conventional to organic production is often complicated. If part of the production is already organic, it is necessary to separate the production of organic products from the production of inorganic and transitional products.

As many Ukrainian enterprises only plan to switch from conventional production to organic (today more than 91 000 hectares of land (24%) have the status of "lands transitioning to organic production" in Ukraine), and in such transition, it is obligatory to observe the terms, during which the products are not considered organic. That is why it is advisable to separate the documents for the products of the transition period.

However, the development of new forms may not be very effective, so to accurately separate costs, existing forms can be added with a line specifying

what kind of production is documented by this document. It will also help external and internal control bodies to reduce the amount of resources available to audit the enterprise.

Documents on accounting for organic crop products may be as follows: invoices for domestic use, acts on the use of mineral, organic and bacterial fertilizers limit-picking cards, etc. In animal husbandry they use their special documents. All of them should include a line stating what products are produced: organic, conventional, or transitional.

Documents regarding the use of working time and work performed are common to plant growing and livestock production. The Working Time Sheet is the main document for the accounting of time spent on agriculture. As the document is drawn up separately by departments and crews, it is not a problem to isolate the cost of labor for the production of organic products in parallel production.

Therefore, all operations related to the production and sale of organic agricultural products should be separated from those relating to conventional agriculture. This can be done through the organization of the documentation process, by marking each primary document that draws up the accountant.

The activity of organic production enterprises must be confirmed by a certain analytical accounting system. The storage of organic products in storage shall ensure the identification of such products, their lots, and the prevention of any mixing or exchange with inorganic products and substances which do not meet the requirements of organic production or contamination with such products and substances.

Documentation is very important for organic production. Following organic standards, each holding shall:

– keep original documents confirming that all goods are organic;

– calculate the data on plant protection products and fertilizers used in each organic area annually (detailing);

– adhere to the developed crop rotation plan and indicate the risks of harmful substances from neighboring fields. For the same purpose it is necessary to have schemes of production premises and warehouses;

– to keep a register of the harvest, its storage and disposal;

– separate conventional and organic products.

Incorporating all of this information in the original document, that is, into a specially designed form, will allow internal and external users to accurately know the organic composition of the products being manufactured.

Due to the large number of additional requirements for accounting for the cultivation of organic products, the enterprise should make adjustments to accounting policies. At the same time, the government should also address this issue by developing methodological guidelines for accounting for organic production. Based on these recommendations, beginners will be able to avoid accounting errors. Additions to the specialized accounting policy should include a work plan of accounts, specialized forms of primary documents, charts of documents, and a list of nomenclature of costing articles and determining the method of calculating production cost of production.

There are the important issues of the distribution of species for organic production, costs related to several crops or works, and which are reflected in different analytical accounts during the year; this information in the financial and statistical reporting is presented in Table 1.

Production costs depend on industry, culture, production organization, region, and its climate. The analysis shows that the cost of production on an organic farm is lower than on conventional farming. For example, in organic farming, the following costs are lower: maintenance of fertility (50%), disease control (97%), energy use (50%) (Organic agriculture).

Four models can be used to organize the recording of production costs when the company produces:

1. organic and inorganic products in parallel for the same types of products;

2. only organic products in all their types;

3. organic and conventional products in parallel for selected species;

4. organic products, inorganic products, and transitional organic products.

Specific costs for organic production are certification costs, which can be classified as marketing and displayed in 93 account "Marketing expenses". The justification for this is that the primary purpose of the certificate is to confirm the high quality and safety for consumers, and therefore to create an additional incentive for the growth of sales. Since such a certificate is valid for 15 months from the date of its issuance, there are two tools that help to differentiate expenses over the periods

Table 1

Specific costs for organic production

No.	Cost element	Types of costs
1.	Material costs	• raw materials and materials used in the organic production process, for example: – tillage; – plant protection; – fertilizer application; – organic feed materials; – crops, etc. • packaging materials suitable for organic products
2.	Labour and social contributions	• payments to workers in the organic sector; • accruing ERUs to such employees; • the cost of upgrading the workers' skills (in the field of organic production); • other benefits (bonuses) for workers in the organic sector; • provision of social packages for workers in organic production
3.	Depreciation	for non-current assets used in the organic production process, such as: • property, plant and equipment; • intangible assets; • other non-current assets
4.	Other costs	• certification costs; • management costs, such as participation in seminars related to organic production; • costs of compliance with organic production requirements; • costs of storage; • other costs

during which they produce income – depreciation and account 39 "Expenses of future periods". In this case, only the second option is appropriate, since depreciation is used only for non-current assets.

Since the accounting shows information about current business activity and there is no separate information on product quality, this means that it is more difficult for users to verify that products are produced in compliance with all organic requirements. In order to avoid this problem, it is necessary to introduce a detailed account.

The organization of analytical accounting is influenced by various factors, which include the type of production, the range of products, the level of automation of accounting work, the structure of enterprise management. Analytical accounting helps to refine the information according to the specifics of the activity.

The objects of accounting in organic production are resources, products, and processes that fall under the definition of "organic products", which is why it would be advisable to use analytical accounts that indicate the type of products produced. To achieve the most effective detailing of accounting the organic production accounts can be applied to the method shown in Figure 1.

According to this scheme, the costs of organic production can be written off on account 23 "Production", sub-account 231 "Production of crop products", analytical account 231.1 "Cultivation of organic crop production", 231.1.1 "Growing of organic wheat". Accordingly, other accounts can be divided according to the same principle, such as 131.1 "Depreciation of property, plant and equipment used for organic production", 90.1 "Cost of organic production", 66.1 "Calculation of wages for workers of organic production". This also applies to accounts: 10 "Property, plant and equipment", 16 "Long-term biological assets", 20 "Production inventory", 21 "Current biological assets", 27 "Products of agricultural production", 70 "Sales revenue", etc.

It is advisable to register the analytical accounts, according to the scheme in Figure 1 in the work plan of the accounts, which is an annex to the order on accounting policies of the enterprise.

These approaches will allow you to analyze information with a certain level of detail according to the needs and specifics of organic production management, calculating the cost of each technological process and monitoring the effectiveness of the use of available resources.

In general, accounting for organic products differs little from accounting for conventional products, so it is necessary to take into account the features of conventional agricultural production.

It is also possible to improve accounting through the production of environmental

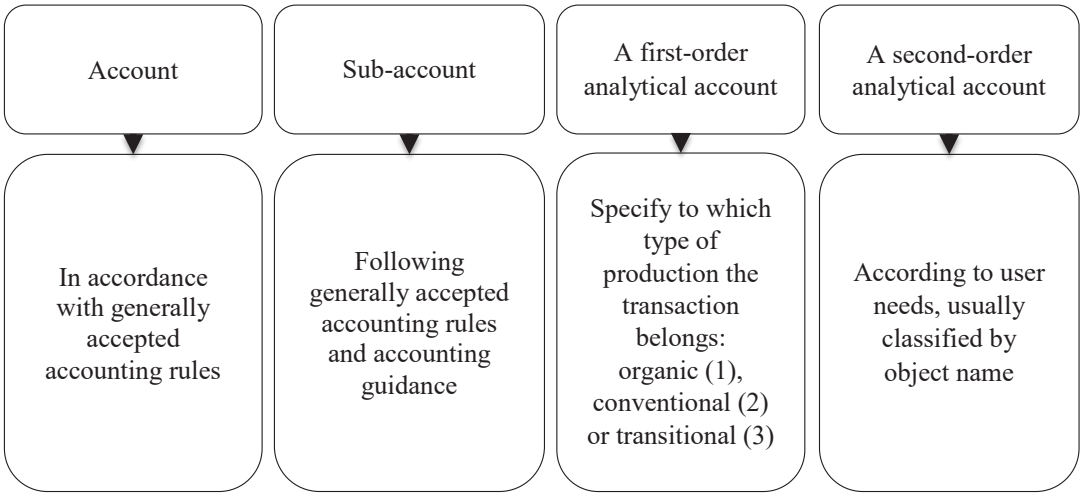

Figure 1. Methods of forming analytical accounts for accounting organic production

reports in order to fully reflect organic production operations. The experience of the EU countries should be introduced in Ukraine as well. That is, information on the development of organic production should be provided by all certification bodies operating in Ukraine and organizations in the organic field.

In order to obtain statistical information on the development of organic production in Ukraine, it is recommended to use the existing form of the State statistical report on the main economic indicators of agricultural enterprises, including organic data production in section with the same name. It should include all data related to organic agriculture, such as information on the availability of non-current assets and inventories of organic processes.

Therefore, we see that the improvement of accounting system can provide the information with the required level of detail to meet the needs of interested users and to make such management decisions that will help to preserve natural resources and reduce the negative impact of enterprise activity on the environmental situation in Ukraine. However, the lack of perfect legislative regulation of accounting for organic agricultural production in Ukraine significantly hinders its development.

4. Conclusions

The Ukrainian organic sector is growing rapidly, both in terms of the number of operators and the quality of products. According to the FiBL Research Institute, the main driving force for the formation and development of organic food production in Ukraine is the demand for organic food in the EU, where consumption of organic products is twice as high as existing agricultural land.

The main factor hindering the development of organic production in Ukraine is the low solvency of domestic consumers which determines the feasibility of establishing a consumer orientation of state support for organic production. However, intensive marketing of organic products online in Ukraine has considerable potential for developing the internal market for organic products and can generate and promote consumer demand. This will help society to begin to embrace the organic sector as a whole and stimulate the consumption of organic products.

In this paper, the accounting of organic production is improved taking into account the necessity of coordination of economic, social, and ecological activities of agricultural enterprises by:

– Organizing the documentation of business operations related to organic production by adding to the original documents lines with the names: "Organic production", "Conventional production" and "Transitional production". Choosing one of the available options would divide the agricultural documents into three types and thus facilitate further processing of the information. Organic enterprises should also accurately identify and document all non-current assets, inventories and manufactured products, from obtaining materials for production to selling finished products;

– Confirmation of the need for internal control of organic production costs to improve their management efficiency;

– Establishment of a work plan of accounts regarding the formation of separate analytical

accounts for the process of receipt of biological assets, producing organic products and selling them, as well as the creation of separate analytical accounts to determine the financial result. Based on the proposed analytical calculations, the process of creating production costs and determining revenues can be simplified. If cross-production is carried out at an enterprise, then this technique will help to determine the benefits of organic production over conventional production easily;

– Developing a system of financial and statistical reporting indicators for organic enterprises. In order to improve statistical reporting, it is recommended that the existing State statistical report on the main economic indicators of agricultural enterprises to be supplemented with organic production data and to provide information on all organic farming data there.

Thus, the establishment of organic agricultural production in Ukraine requires the development of its accounting support. According to the emergence of such support, it is possible to expect the development of this segment of the agricultural sector.

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