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## **Competitiveness and prospects for development of berry production in Ukraine**

**Summary.** The demand for raspberries and blackberries has risen sharply in Europe and North America in recent years. Ukraine is almost one third of the world's black earth, a favorable climate for growing vegetables, fruits and berries, as well as a good ratio of daytime and night-time temperatures and optimal length of sunny day. Therefore, the authors consider that Ukraine could become a reliable supplier of berries in Europe and America. Berries will not give the same high gross production as cereals. But these products are perspective in terms of processing, value added and profitability for the manufacturer. Considering the strategic importance of growing berries in Ukraine the subject of the research is to study the competitiveness and prospects for production of berries in Ukraine. The conducted assessment of the status and prospects of growing berries shows that Ukraine has been steadily producing within the range of 130-135 thousand tons of berries in recent years. Due to the fact that the products of private households and horticultural societies are not actually taxed, they have significant competitive advantages over agricultural enterprises, which is one of the reasons for the curtailment of industrial horticulture in Ukraine. But, on the other hand, they are inferior to large enterprises because of not failing to implement sanitary, technical standards, certification etc. In order to ensure the competitiveness of domestic producers in the external market, berry producers need to be more actively involved in the process of improving product quality, since in Ukraine only five agribusinesses have a Global GAP certificate, which is a minimum condition for access to the EU market. According to the results of the study, the authors consider organic production of berries as another perspective direction for the development of domestic berries.

**Key words:** Ukraine, berries, prospects of development, competitiveness, export, organic production

### **Introduction**

Considering Ukraine it should be noted that berries are the most prominent among Ukrainian growing crops. The high winter hardiness and short growing season of these plants contributes to their widespread spread throughout Ukraine.

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The Global Fruits Market overview shows, that Ukraine ranks 3<sup>rd</sup> place in global currant production, 4<sup>th</sup> in gooseberry production, 6<sup>th</sup> in raspberry production<sup>1</sup>. Each year, our country exports more and more berries, for 2018 the amount of export is \$ 78 million, which is 17% more than in the previous year.

The demand for raspberries and blackberries has risen sharply in Europe and North America in recent years. The current stock of raspberries, blackberries and berries on the market is declining. The supply from the current producers is falling and other countries are still starting up. Therefore, the authors consider that Ukraine could become a reliable supplier of berries in Europe and America. Berries will not give the same high gross production as cereals. But these products are perspective in terms of processing, value added and profitability for the manufacturer. Considering the strategic importance of growing berries in Ukraine the subject of the research is to study the competitiveness and prospects for production of berries in Ukraine.

### Literature review

The study of the growing berries in Ukraine and its competitiveness are dedicated to the works of domestic scientists, among which are A. Burliai, O. Burliai & O. Svitoyi. Scientists note that at this time, the berry market is not optimal either for the structure or for volumes. A problem today is that the main entities forming berry supply in the market are households, accounting for about 97% of the output. The consequence is high labor costs, supply instability, poor quality of berries and low payback of their production<sup>2</sup>.

Mickey Parish, Michelle Danyluk & Jan A. Narciso in their research analyze safety of fruit, nut, and berry products as a precondition of berries competitiveness<sup>3</sup>. They refer that there is no comprehensive protocol to guarantee that raw products will be free of pathogens, but careful management, record keeping, and continuous consumer education can reduce the chances of illness from contaminated fresh commodities.

The issues of the competitiveness of Polish horticulture are considered in the works of Polish scientists, among which the following scientists should be distinguished: Jablonska, Filipiak, Gunerco. Scientists have proved the importance of constant control of costs in horticulture in order to ensure its competitiveness<sup>4</sup>.

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<sup>1</sup> Overview in Berry, <https://www.tridge.com/categories/berry> (accessed: 28.11.2019).

<sup>2</sup> A. Burliai, O. Burliai, O. Svitoyi: Assessment of organic berries production in Ukraine. *Prychornomorski ekonomichni studii* 2019, No. 45, p. 16–22. DOI: <https://doi.org/10.32843/bses.45-3> (accessed:).

<sup>3</sup> M. Parish, M. Danyluk, J.A. Narciso: Safety of Fruit, Nut, and Berry Products. In: Oyarzabal O., Backert S. [in:] *Microbial Food Safety*. Food Science Text Series. Springer, New York 2012, pp. 109–125. [https://doi.org/10.1007/978-1-4614-1177-2\\_8](https://doi.org/10.1007/978-1-4614-1177-2_8) (accessed: 28.11.2019).

<sup>4</sup> J. Jablonska, T. Filipiak, L. Gunerka, 2017: Cost competitiveness of horticultural farms in Poland and selected EU countries (Konkurencyjność kosztowa gospodarstw ogrodniczych w Polsce i wybranych krajach UE), <https://doi.org/10.22630/PRS.2017.17.1.6> (accessed: 28.11.2019).

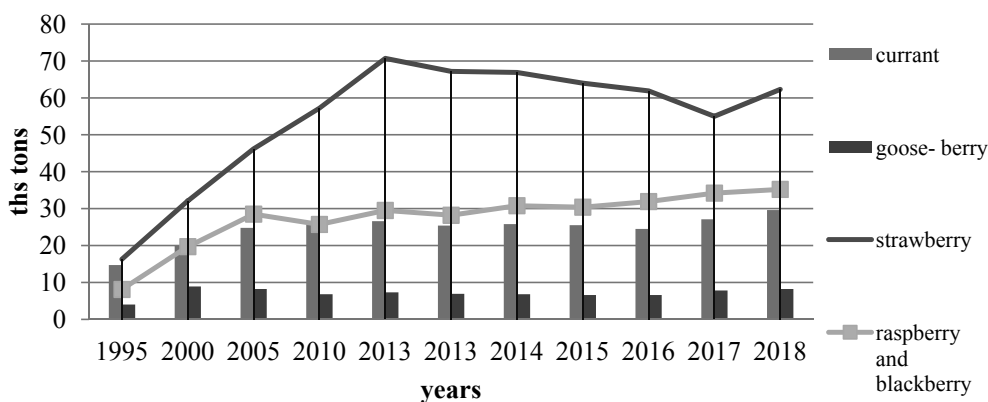
### Research methods

During writing of the article we use both general science methods and applied methods of research. In the study of economic processes, national legislation, works of domestic and foreign authors we use systematic and complex approaches, a combination of historical and logical. Our research is aimed at assessment of the competitiveness and prospects of Ukrainian berry productions. To study this issue we use dialectical method of cognition, trend analysis to see the tendency and to make a forecast, comparative analysis.

### Results

Ukraine is almost one third of the world’s black earth, a favorable climate for growing vegetables, fruits and berries, as well as a good ratio of daytime and nighttime temperatures and optimal length of sunny day. In recent years, Ukraine has been steadily producing within the range of 130–135 thousand tons of berries. In the general structure of production of fruit and berry crops berries occupy about 6%. The leading crops among the berries are strawberries and raspberry, which account for almost half of the entire crop (Fig. 1). The estimation of the tendency in the volume of berry production for 1995–2018 showed that the largest increase in the volume of production is in strawberries. The annual average increase is 3.44 thousand tons for the analyzed period (linear model of time series:  $\hat{y}_t = 3.4409x + 33.882$ ). The smallest increase in the volume of production is in goose-berries, the annual average increase of which, for the analyzed period, is 0.099 thousand tons (linear model of time series:  $\hat{y}_t = 0.0991x + 6.5055$ ).

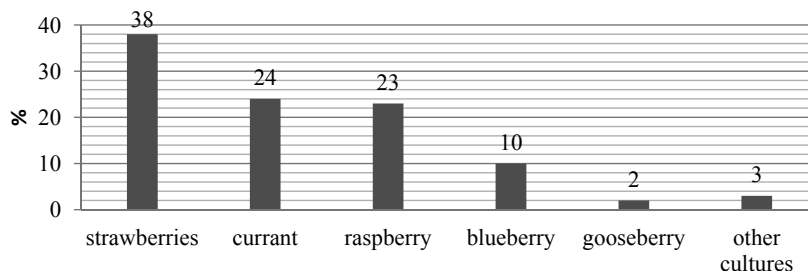
To determine the main factors for the growth of gross production of berries, the main factors of influence are considered: the area of plantations and the yield. The areas under berry crops in Ukraine are stable (within 20 thousand hectares), mostly used for grow-



**Figure 1.** Dynamics of berry crops production, all categories of farms, thousand tons, 1995–2018

Source: own author’s research, based on data <http://www.ukrstat.gov.ua> (accessed: 28.11.2019.)

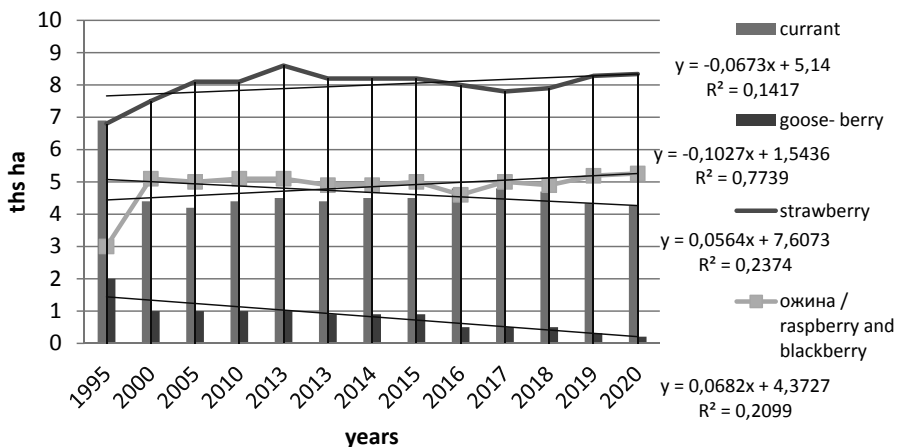
ing strawberries (8.2 thousand hectares), raspberries (4.9 thousand hectares), currants (5 thousand hectares), blueberries (2.2 thousand hectares) and others (Fig. 2)<sup>5</sup>.



**Figure 2.** Structure of berry plantation in Ukraine, all categories of farms, at the beginning of 2019, %

Source: own author’s research, based on data <http://www.ukrstat.gov.ua> (accessed: 28.11.2019).

Despite the increase in berry production in Ukraine, the area under the berries is mostly decreasing annually (Fig. 3). Slight increase in the area is observed only on strawberries, the annual average increase of which, for the analyzed period, is 0.06 thousand hectares and blackberries – 0.07 thousand hectares.



**Figure 3.** Dynamics of the area of berry crops in fruiting age plantations, all categories of farms, thousand hectares, 1995–2018 and forecast

Source: own author’s research, based on data: Harvesting of crops, fruits, berries and grapes in the regions of Ukraine. Statistical bulletins, State Statistics Service of Ukraine 2019, <http://www.ukrstat.gov.ua> (accessed: 28.11.2019).

<sup>5</sup> Harvesting of crops, fruits, berries and grapes in the regions of Ukraine. Statistical bulletins, State Statistics Service of Ukraine, 2019.

Under the unchanging conditions, the estimated area under crops in 2020 will be as follows: strawberry – 8.34 thousand hectares ( $R^2 = 0.2374$ ); goose-berry – 0.21 thousand hectares ( $R^2 = 0.7739$ ); currant – 4.27 thousand hectares ( $R^2 = 0.1417$ ); raspberry and blackberry – 2.23 thousand hectares ( $R^2 = 0.2099$ ). Analyzing the yield of berries in Ukraine, it should be noted its annual increase for the analyzed period. In particular, the average annual increase for strawberry – 4.037 c/ha and average yield – 43.24 c/ha; for goose-berry – 2.77 c/ha and average yield – 55.58 c/ha; for currant – 3.206 c/ha and average yield – 36.06 c/ha; raspberry and blackberry – 2.19 c/ha and average yield – 40.43 c/ha. Thus, it can be concluded that the main factor in the increase in gross harvest was the yield of berry crops, since the area under the plantations, for the most part, decreased.

Ukraine's official statistics show that industrial enterprises produce only 10–15% of berries in Ukraine. Thus, the production of berries in Ukraine is more concentrated in households and small farms. Due to the fact that the products of private households and horticultural societies are not actually taxed, they have significant competitive advantages over agricultural enterprises, which is one of the reasons for the curtailment of industrial horticulture in Ukraine. But, on the other hand, they are inferior to large enterprises because of not failing to implement sanitary, technical standards, certification, infrastructure improvements and knowledge of modern technologies. Such manufacturers have limited expansion of export opportunities and diversification of supplies to the external market and to retail chains.

Due to the low demand in the domestic market and high production volumes of berries, a significant proportion of berries are exported. Frozen berries accounted for a large share of export sales, which exported 41.7 thousand tons in a total of \$ 71.2 million in 10 months of 2019<sup>6</sup>. Such an increase in exports in this segment is driven by an increase in world consumption of berries. And it applies to both frozen and fresh produce. The largest consumers of Ukrainian fruits and berries in the EU are Poland, France, Italy, Netherlands and Germany. However, experts from the Ukrainian Fruit and Vegetable Association, among the most promising markets for these products, name the countries of the Middle East and Southeast Asia.

It is worth noting, that the export of fruit and berry products from Ukraine is restrained by the inconsistency of phytosanitary measures with importers. For comparison, in recent years, Poland's fruit and berry exports reach more than \$ 1 billion, while for Ukraine this amount reaches \$ 150–200 million, thus Ukraine exports 6 times less fruit and berry products than its European neighbor<sup>7</sup>. In order to ensure the competitiveness of domestic producers in the external market, berry producers need to be more actively involved in the process of improving product quality, since in Ukraine only five agribusinesses have a Global GAP certificate, which is a minimum condition for access to the EU market.

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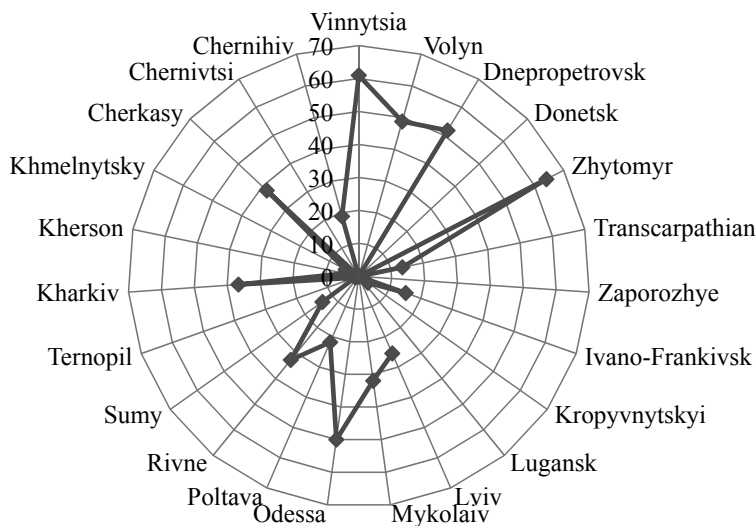
<sup>6</sup> Foreign trade of Ukraine with fresh berries, nuts and fruits. Statistical bulletins, State Statistics Service of Ukraine, 2019.

<sup>7</sup> <https://ec.europa.eu/eurostat> (accessed: 28.11.2019).

Environmental pollution caused by industrial methods of agriculture, oversaturation of agricultural products by pesticides, has led to increasing attention in recent years to the problems of production and consumption of organic products of horticulture, to substantiate the benefits of growing these products and cultivation berries. Due to the lack of areas for growing organic berries in EU countries, their import from Ukraine is promising.

Organic production is becoming important in the world and in Ukraine. The pace of development of organic production in Ukraine is 5,5 times higher than in Europe and 4,9 times – than in the world. Organic growing of fruits, berries and nuts is gaining popularity in Ukraine. According to Organic Standard, as of 2018, 106 organic berry producers were registered. According to the information: 86 farms are engaged in growing organic raspberries on an area of 582 ha; 14 operators grow organic blueberry over an area of 106 ha; 23 operators grow organic strawberries on an area of 75.5 ha; 22 operators grow other organic berry crops: gooseberry, black currant, currants, honeysuckle, goji berries; 25 operators grow two or more organic berries at a time<sup>8</sup>. The certified land area under organic berry by regions of Ukraine is shown in Fig. 4. The leader among the regions of Ukraine is the Kiev region with a certified area of 328 hectares.

Due to the low solvency and ignorance of the population 90% of the total organic sales in Ukraine are exported. Raspberries are one of the best berries for sale. Organic raspberries cost 2–3 times more expensive than usual. The cost of export of organic berries – 2–2,5 €/kg (63–78 UAH), in the domestic market – 50 UAH/kg<sup>9</sup>. Thus, one of



**Figure 4.** Certified land areas under organic berry by regions of Ukraine, 2018, ha

Source: <https://organicstandard.ua/> (accessed: 28.11.2019).

<sup>8</sup> <https://organicstandard.ua/> (accessed: 28.11.2019).

<sup>9</sup> Organic Berries Sales: Which Berries to Build a Successful Farm Business? <http://organicbusiness.com.ua/zbut-organichnih-yagid/> (accessed: 28.11.2019).

the perspective directions of domestic berry development is the production of organic berry products. Berry products grown by organic technology will be competitive in both domestic and foreign markets.

### Conclusion

The article assesses competitiveness and prospects for development of berry production in Ukraine. The main results of the study are:

- berries are the most prominent among Ukrainian growing crops. Ukraine could become a reliable supplier of berries in Europe and America. Berries will not give the same high gross production as cereals. But these products are perspective in terms of processing, value added and profitability for the manufacturer;
- the estimation of the tendency in the volume of berry production for 1995–2018 showed that the largest increase in the volume of production is in strawberries. The main factor in the increase in gross harvest was the yield of berry crops, since the area under the plantations, for the most part, decreased;
- due to the fact that the products of private households and horticultural societies are not actually taxed, they have significant competitive advantages over agricultural enterprises, which is one of the reasons for the curtailment of industrial horticulture in Ukraine. But, on the other hand, they are inferior to large enterprises because of not failing to implement sanitary, technical standards, certification etc.;
- according to the author's point of view, the main priority in berry production is to grow berries in Ukraine using organic production technologies. Due to the lack of areas for growing organic berries in EU countries, their import from Ukraine is promising. Berry products grown by organic technology will be competitive in both domestic and foreign markets;
- we also support the opinion of industry experts that it is impossible for Ukrainian farmers to be successful in foreign markets without cooperating with each other. "Only the cooperation will help small and medium-sized producers to form the necessary volumes of commodity batches of products, without which successful export is impossible"<sup>10</sup>.

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<sup>10</sup> <https://fruit-ukraine.org/2019/12/01/andrij-zhukov-potribno-robyty-stavku-na-vyrobnystvo-produktu-z-vysokoiu-dodanoiu-vartistiu/> (accessed: 28.11.2019).

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