UDC 633.791:338.432: 338.439.52

Beer and hop branches of Ukraine: conjuncture and integration

Pryimachuk T., Protsenko A., Rudyk R., Shtanko T.

Institute of agriculture of Polissia of NAAS, Kyiv Shose, 131, Zhytomyr, 10007, Ukraine; e-mail: isgp.ek@gmail.com

The purpose. To analyze contemporary state of beer and hop branches of Ukraine, to mark out problems and reference points of their further integration. **Methods.** Economic-and-statistical; monographic; analysis and synthesis, induction and deduction; graphical and comparative. **Results.** Contemporary state and dynamics of development of beer and hop branches is studied. Their complementarity is justified. Reference points of integration development of beer and hop branches are specified. **Conclusions.** Beer and hop markets are interconnected and response on economic (prices, purchasing capacity) and technological (change of technique, overproduction) factors. Now the basic reference point of revitalization and development of hop branch is the solution of its basic proble — absence of sales of its produce in home market that restrains development of production of hop plant in Ukraine.

Key words: *branch of hop growing, beer market, balance of alpha-acids, market condition, export and import of hop produce, integration.*

Introduction. Hops are an important branch of agricultural production, the production of which has many uses, ranging from brewing and kinkuchuyy cosmetology. More than 90% of the grown hop is used in the process of beer production, so the dependence on the brewing industry is significant and any product balance or its deficit instantly affects the price dynamics. In recent years, the brewing industry of Ukraine consumed about 107-140 tons of alpha acids, of which domestic manufacturers of hop provided 20-25%, the rest imported hops. Now the brewing industry, when choosing a supplier of raw materials, faces a number of problems, the main one of which is the volume and uniformity of supplies. For a large beer producer, a single purchase of hop-fats can exceed 100 tonnes, and the delivery condition - the whole lot must be of one grade and one quality. Taking into account the fact that the total production of hops in Ukraine in 2016 hardly exceeded 600 tons, it is almost impossible to organize a consolidated purchase of hops in several suppliers [1]. Accordingly, the beer market of Ukraine, which is represented mainly by foreign brewing corporations, prefers imported hops and products of its processing.

Analysis of recent research. The works of many Russian scientists have been devoted to highlighting the state of the world and home markets of hops, increasing the economic efficiency of its operation, and investigating the problems of hop culture. Gerasimchuk V.I., Godovany A.A., Golovach G.S., Yezhov I.S, Zinovchuk V.V., Kovtun M.G., Kostritsa M.Yu., Kurovsky I.P., Lyashenko M.I. etc. At the same time, a number of issues in the context of accelerating globalization processes require the development of measures for the rapid adaptation of the hop region to the conditions that have recently developed in the domestic and world markets of hops.

The problems of the development of the brewing industry were studied by such famous scientists as E. Mazur, B. Danilishina, V. Degtyarov, M. Lyashenko, V. Serov, A. Chirva, and others. The trends of development of the domestic beer market are devoted to the research of Ivanova A., Matvienko A., Oniskov V., Emtseva V., however, the question of integration of hop and beer markets in today's conditions remains poorly studied.

The purpose of the research to conduct a comprehensive analysis of the state, the importance of problems and guidelines for the development of the domestic beer and hop industries. The object of research is the process of integration development of the beer and hop industries of Ukraine in the context of the influence of global trends on the domestic and foreign markets. The subject of economic research is a set of theoretical, methodological and practical aspects of the functioning and development of hop and beer industries.

Methods of research. To solve the problems, the following research methods were used: economic and statistical - in determining the current state of the beer and hop industries, the effectiveness of the activities of hops enterprises; monographic - to study the positive experience on these issues; analysis and synthesis - to identify problems in the beer and hop industries and identify ways to overcome them. Using the methods of induction and deduction, scientifically based results are obtained and general conclusions are formulated.

Results of the research. The brewing industry is one of the leading industries in Ukraine, which produces more than 400 kinds of beer products and delivers it to 42 countries.

Now a great interest in hops processing products is observed from the crafting (small) brewing, which recently began to develop intensively both in the world and in Ukraine. In their technologies, in general, they use flavor-aromatic profiles of foreign advertised hop varieties, such as: Cascade, Mandarin Bayern, the like. Ukrainian hop varieties are not inferior in quality to foreign analogues, but, unfortunately, the Ukrainian market of hop products does not have proper marketing, a significant number of hop-farms do not have strategies for entering international markets. The main channels for marketing hop products in Ukraine are regional breweries, Company Obolon and private breweries, which still benefit from buying domestic hops, rather than importing it.

In recent years, the domestic brewing industry requires about 107-140 tons of alpha acids, of which only 20-25% is provided from own production, the rest - imported hops (Figure 1) [2].

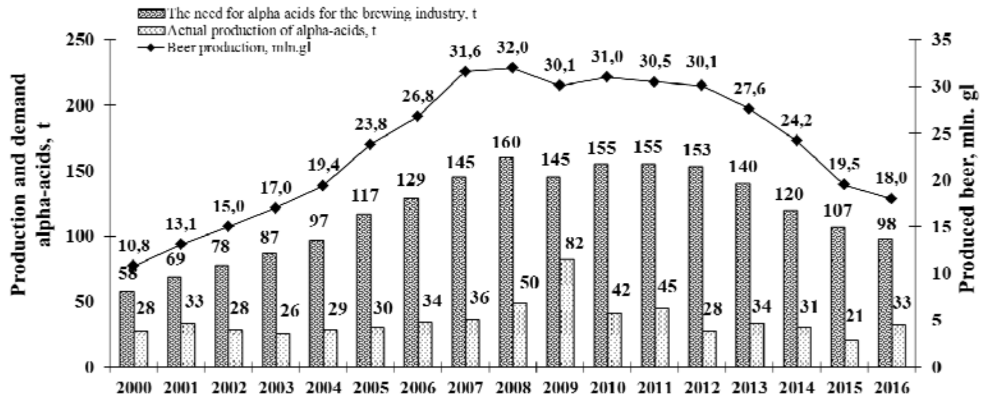

Figure 1 - Dynamics of beer production and the needs of the brewing industry in Ukraine in alpha-acids

Peak for the domestic beer producers for the period 2000 - 2016 was 2008 (320 million Dal). Since 2011, we have observed an annual decline in production, in 2016 only 180 million decaliters of beer (1.7 times) were delivered to the market. According to Ukrpivo, the fundamental reasons for the loss of the fifth part of the production of Ukrainian brewers are closed markets in the West of Ukraine and Crimea, as well as the economic crisis [3,4]. During the period from 2014 to 2016, the excise tax on beer increased threefold: from 0,87 to 2,48 UAH. per liter, which also affected the fall of the beer market.

The main giants of the Ukrainian brewing industry are SUN InBev Ukraine, Carlsberg Ukraine and Obolon company (Table 1).

The Efes-Ukraine corporation ceased its activity (it was in Donetsk), since 2011 its segment in the market was occupied by "Persha Privatna Brewery" - 10%. In addition to large players, smaller breweries operate on the market, accounting for 6.6% of the beer market in 2016. These are such regional enterprises as: Poltavpivo Company, Berdichevsky Brewery, Level of LTD, Rovenkivsky Brewery, Stariy Brovar, Khmelpivo, Umanpivo, Opolye Brewery and others. Now the beer market can be considered oligopoly [5].

Table 1 - Positions of leading companies in the Ukrainian beer market, 2008 - 2016

Brewing companies	Start of work in the market, year	The share of companies on the market (in physical terms),%								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
«SUN InBev Ukraine» (Belgium)	2000	37,5	38,7	36,9	35,4	34,2	28,0	24,9	26,0	27,0
«Carlsberg Ukraine» (Denmark)	1996	23,7	26,5	28,6	28,8	29,3	27,2	23,8	31,0	32,0
Obolon Company	1980	30,2	26,0	26,5	23,7	22,7	23,2	29,7	28,0	24,4
"Miller Brends Ukraine" (Corporation Efes Ukraine)	2008	3,6	3,8	3,9	5,8	6,9	9,1	11,4	-	-
Company "Persha Privatna Brewery" + PBM "Radomyshl"	2011	-	-	-	2,5	4,5	5,9	6,2	8,5	10,0
Others	-	5,0	5,0	4,1	3,8	2,4	4,9	4,1	6,5	6,6

The main consumers of Russian beer in recent years were Russia, Moldova, Belarus, Georgia and Lithuania, to which 97% of all exports came. The export of Ukrainian beer to Russia stopped in the fall of 2014, Moldova and Belarus reduced the number of purchases, there was an increase in demand for the Ukrainian product in Poland (12% of the total exported beer). In 2015, compared to 2014, Ukrainian brewers reported a 2-fold fall in exports. The cost of beer exports in 2015 was - 22002.0 thousand dollars USA, the cost of imports - 236703.3 thousand dollars USA [4, 6].

In 2016, the main importers of Ukrainian beer were Moldova, Belarus and Lithuania. At the same time, the latter increased import of Ukrainian products 2 times - from 6% to 12%. Georgia and Israel are the closest five. Poland in 2016 significantly reduced the import of Ukrainian beer products: from 14% to 2%.

Among the exporting manufacturers, Obolon leads - 59% of all exports, followed by Slavutich (owned by Carlsberg Ukraine) with a share of 27, the third with a 14% stake in SUN InBev Ukraine.

The largest amount of beer was imported from Belgium - its share in the first half of 2016 was 54%, in 2015 it was only 21%. Germany takes the second place with a 14% share, the third - Moldova with 6% (in 2015 its share was 23%).

In 2016, the share of imported beer on the shelves of domestic stores grew almost 2.4 times: from 1.4% to 3.4%. Among the importing companies, SUN InBev Ukraine, PBU "Slavutich" and Fozzi-Food chain are leading.

Despite the significant needs of the domestic brewing industry for hop-fats, the demand for Ukrainian hops has been low in recent years. This situation arose not only due to overproduction in previous years of α-acids in the world, but also due to the lack of an established sales network, the necessary assortment of varieties and products of their processing, the lack of broadly advertising domestic varieties on the world market, norms for the introduction of α-acids into beer products and a number of other reasons. Therefore, even that part of the crop, which had the appropriate quality, did not find a sale.

In addition, a significant part of the domestic hops market is almost inaccessible to Ukrainian producers as a result of concerted anticompetitive actions by the owners of large breweries in Ukraine, which occupy a monopoly position in the market and use mainly imported raw materials. As a result, business entities that cultivate hops in Ukraine are eliminated from the domestic market for its implementation. The reason for this is the interest of brewing companies operating in the territory of

Ukraine, in deliveries under concluded contracts of foreign-made hops produced from hop varieties with low brewing estimates [7].

Such instability and uncertainty in the market led to the fact that starting from 2012, hops in Ukraine are grown only in four regions, although as early as 2004-2005, There were 9 hops producing regions. Refused to grow hops first Chernigov, Kiev (in 2006 - 2008 gg.), And then and Luhansk, Volyn and Vinnitsa regions. Now Zhytomyr Oblast occupies the leading position in the structure of hmelainadzade, almost 75% of the total area, the remaining hop-plants are located in Lviv, Khmelnitsky and Rivne regions. Throughout 2009 - 2016 years. The number of operating farms decreased from 59 to 18 or 3.3 times.

In 2016, compared to 2015, there was a slight increase in the indices of the industry: the area of hop growing increased by 5.8 hectares, the gross yield by almost 47 tons, the yield by 1.0 centner / ha (figure 2).

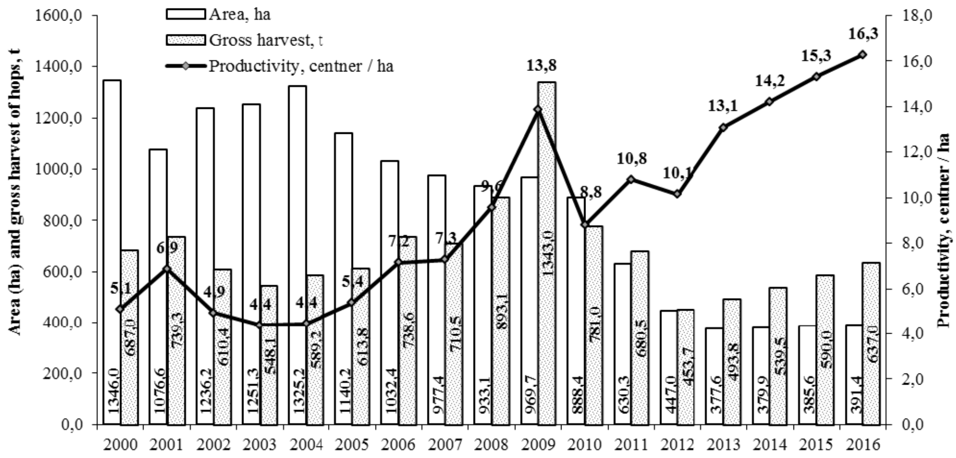

Figure 2 - Production of hops in all categories of farms in Ukraine, 2000 – 2016

Analysis of the economic situation showed that, starting in 2014, the industry becomes profitable and already in 2016 the level of profitability in Ukraine was at the level of 100.4%, whereas in previous years their activity was unprofitable. This trend was the result of higher sales prices for hop products due to a previous deficit in the market.

However, domestic hop-growing is losing ground despite the high quality of Ukrainian hops noted by the world - domestic hops are known for growing the most capricious aromatic varieties. One of the reasons for this situation is that breweries agree to conclude deals and buy only large lots of the same grade with stable quality indicators. In practice, however, most domestic hops produce one type of hops in a volume that is insufficient to load the granulator and ensure a minimum batch of delivery.

The volume of exports and imports of hops is largely dependent on the situation in the beer industry and hop market in Ukraine and other countries, especially those that have a developed brewing industry. No less significant factor of influence are the weather conditions, as evidenced by the increased demand for beer during dry years with high air temperature.

In 2016, 168 tonnes of Ukrainian hops were exported abroad, 8.7% less than in the previous year (Figure 3).

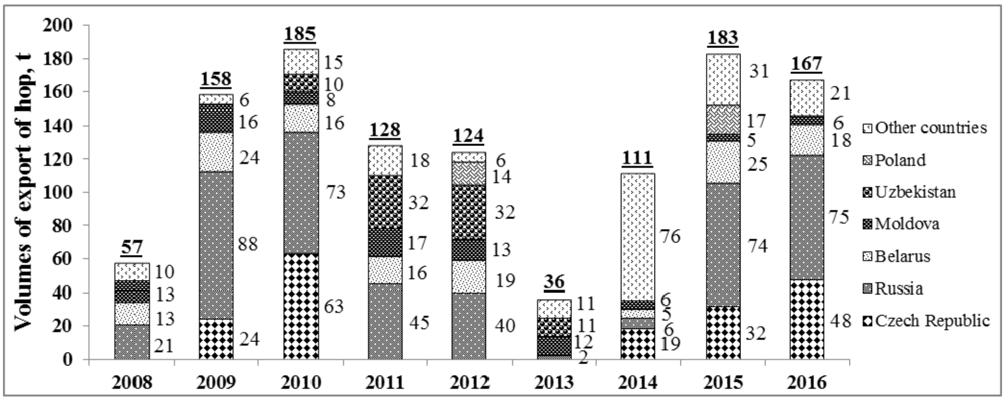

Figure 3 - Volumes of Ukrainian hops export from the country, 2008 - 2016

The data of the state customs service testify that the export of Ukrainian hop is carried out mainly to the CIS countries. The largest importers of domestic hops in 2016 were the Russian Federation (74.6 tons, 44.7 percent), the Czech Republic (47.5 tons, 28.5 percent), Belarus (18.4 tons, 11.0 percent), Azerbaijan and United Kingdom - 10.0 tons each; (6.0% each), which accounted for a total of 96.2% of total exports.

In 2016 domestic producers imported 388 tons of hops and products of its processing, Germany was the main supplier of hop in the last three years (Figure 4).

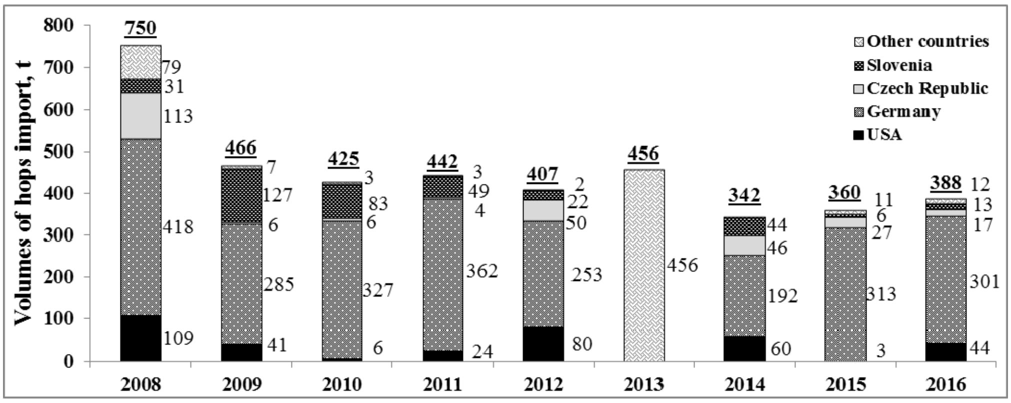

Figure 4 - Main hop-importing countries in Ukraine, 2008 – 2016

The largest producers of hops in the world are Germany, the Czech Republic, China and the United States, and play a major role in shaping the price of hops. Hops are formed according to various indicators, among which is the following: type of raw materials (aromatic or slides), content of α-acids, a particular variety and a number of other factors. So, in the years of a notable lack of hops, its market price slightly increased, and vice versa, in the years when there was an excess of commodity stocks, the price of it declined.

Monitoring of the price situation in the external and internal markets showed that in 2015 the average price of exports was at the level of $ 4.9 thousand / T, while the price of imported raw materials is 40% higher ($ 8.2 thousand / T). In 2016, the average price of exported hops increased by 16.3% ($ 5.7 thousand / T), while the price of imported products reached $ 10.1 thousand / T. So, the average price of Ukrainian hops and products its processing on the world market lags behind the price of imported analogues by Ukraine almost in 1,8 times.

The paradox is that breweries buy imported hops from contract prices at a much higher price than domestic producers have the opportunity to sell their products. This position of foreign trade creates a negative trend for the development of the domestic industry of hop.

In these conditions, there is only one way to preserve the hop-growing industry in Ukraine - government intervention to establish a constructive dialogue between hop-growers and brewers. After all, the only possible reference point for the revival of the industry is the solution of its very problem - the sale in the domestic market. It is this problem that hinders the development of hops in Ukraine, forcing producers to reduce areas under unclaimed crops to sell the products of its processing at an absolutely uncompetitive price. And it is the stabilization of domestic sales channels that will give manufacturers that they need the most for the development of the industry - stability.

To completely not lose the potential acquired in previous years and reach a competitive level, the industry should be modernized as soon as possible. Today, it is necessary to adopt the world experience of hops, which includes: technological approaches to planting plantations with high-quality planting stock of the corresponding hop varieties; scientifically based on its cultivation; processing of hops; preliminary conclusion of contracts for harvesting with brewers, pharmacists, food-stuffs; adaptation of Ukrainian standards for hop and, accordingly, the variety composition of hops grown to European requirements; regulation of the regulatory framework on the expansion of the variety policy at the request of the Brewers.

To increase the volume of production of good quality hop,hop-growing industry has everything it needs: domestic highly productive varieties; corresponding stock fund of varietal plantings; modern technologies of cultivation of planting material, which allow to develop the necessary number of seedlings for laying down industrial hmelenasadzhen; innovative technologies for laying hops, cultivation, harvesting and post-harvest processing of cones of hops; full scientific support.

The optimal solution is the combined solution of problems: the gradual decrease in the import of hops processing products as a result of the introduction of appropriate state regulation (application of special types of duties, in particular: anti-dumping, compensation, etc., stricter requirements for the correct definition of classifications of imported hops), with simultaneous development of domestic raw materials base on the basis of introduction of innovative-intensive hops production technologies due to the growth of the productivity of hops storage to processing and transfer to hop products with appropriate packaging and storage, which will improve the quality of hop products and ensure their competitiveness in European markets; legislative enactment of the mandatory rate of purchase of hops by the brewing companies in domestic honeymaking enterprises at the level of 50% of the total annual demand for such raw materials (with a growth rate of 15% to 50% over five years) on the basis of the Memorandum of Cooperation and Understanding between the Association of hop-growers of Ukraine and business entities - breweries.

At the legislative level, it is important to restore the receipt of the collection for the development of viticulture, horticulture and hops, the introduction of preferential taxation regimes for hop-growers, the improvement of customs and tariff regulation of imports of hop products (especially isomerization of intoxicants), the harmonization and implementation of sectoral regulatory and technological documentation to the requirements of European legislation.

One of the main landmarks of the strategy for the development of the beer and hop industries can be the creation of a scientific and industrial hop-growing cluster that will ensure the integrity of the interconnected processes of production, processing and sale of hop products and will unite: the governing bodies, associations of hop-growers in Ukraine and hop-growing farms, hopper enterprises, small, medium and large brewing companies that form the market of hop food consumption in Ukraine, as possible domestic investors in the implementation Innovative investment with the association, financial institutions, educational institutions of Ukraine and the Institute of Agriculture of Polesie NAAS.

Conclusions

Beer and intoxicating markets are interrelated and react to general economic (prices, purchasing power) and technological (technology change, overproduction, etc.) factors. The implementation of the integration guidelines will ensure the achievement of positive results in the development of these sectors will help improve Ukraine's foreign trade balance and increase employment and incomes of the rural population, preserve existing and create new jobs, both in agriculture, and in the processing and industrial sectors of the economy, in the countryside. The main landmark of the revival and development of the hop-growing region is the solution of its main problem - the lack of sales in the domestic market, which hinders the development of hops in Ukraine, forcing producers to reduce the area under unclaimed crops to sell the products of its processing in absolutely no competitive price.

Bibliography

1. *Dmitry Deyna*. (2016). Why do not Ukrainians drink beer from Ukrainian hops? URL: http//agravery.com/uk/posts/show/comu-ukrainci-ne-put-piva-z-ukrainskogo-hmelu. [in Ukrainian].
2. State Statistics Service of Ukraine. URL: http//www.ukrstat.gov.ua. [in Ukrainian].
3. Beer production in Ukraine in 2016 may decrease by more than 5%. URL: http//ua.interfax.com.ua/news/general/374121.html. [in Ukrainian].
4. *Yablonska N., Malatskovska O.* (2014). Modern tendencies and problems of development of the beer market of Ukraine. *Scientific Herald of the Odessa National Economic University*. № 8 (216). P. 220 – 228. [in Ukrainian].
5. The State Fiscal Service of Ukraine. URL: http//www.customs.gov.ua/dmsu/control/cstat/f11a/showstat. [in Ukrainian].
6. ACM: Ukrainian beer market in the first half 2016. URL: https//mresearcher.com/2016/08/acm-ukrainskij-rynok-piva-v-pervoj-polovine-2016.html. [in Russian].
7. *Savchenko Yu.I.* (Savchenko Yu.I Ed). (2014). Beer and Hops Industry in Ukraine: Conjuncture and Integration: Monograph. Zhytomyr: FOP Maltseva O.Iu. . 96 p. [in Ukrainian].
8. Rudyk R.I., Pryimachuk T.Iu., Ratoshniuk T.M., Sitnikova T.Iu., Shtanko T.A. (2012). Export-import operations on the market of hops. *Economy of agroindustrial complex*. № 8. P. 103 – 108. [in Ukrainian].
9. *Pryimachuk T.Iu., Ratoshniuk T.M., Shtanko T.A., Sitnikova T.Iu., Protsenko A.V.* (2014). Cooperation of Humiculture and Brewing: World and Domestic Perspective. *Bulletin of the Agrarian Science of the Black Sea Region*. V. 2 (78). P. 72 – 79. [in Ukrainian].