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*A.V. FURSA, candidate of economic sciences, senior research fellow,
leading research fellow
Institute of Bioenergy Crops and Sugar Beet of NAAS*

Improvement strategy of competitive ability in the production of sugar beet and sugar

Scientific problem. During conversional changes and settling of market mechanism the units of sugar beet subcomplex APK of Ukraine incurred a stable come-down, a destruction of logistical (material and technical) base of branch, a decreasing in the production volumes of sugar beet and sugar; they got a little differentiated stock of output, a deficient orientation on the demands of consumer, a high costs for the production, matters, components, an undevelopment of communications and other problems. The negative tendencies had induced a discord and a randomness in the sugar market, that, in turn, lead to a bankruptcy and grinded a lot of factories to a halt. Conditions, outlined above, enhance an orientation in sugar beet production on the market economy, internal and external competition, that is they promote forming of a decent competitive environment. In essence, we agree up to a point of M. Porter, "competition – is a dynamic process, that is evolving, ever-changeable landscape, on which it appears new commodities, new marketing

ways, new processes of production and market segments" [5, p. 158].

Current definition of economical competition is fixed in the Act of Ukraine "About defense of economical competition" – contest between the subjects of economical management for the purpose of getting advantages over other subjects due to own achievement, thereby the consumers, subjects of economical management can choose between a few of sellers, buyers, but individual subject of economical management can't determine the conditions of commodity circulation in market [3].

To sum up, it appears pretty acute necessity to supply the current level of competitive ability of domestic sugar beet production in the globalization, to reform the sugar branch, which is foreknown to start on 1st October 2017 in the EU countries.

Analysis of recent researches and publications. Many well-known domestic scientists devoted their works to the problems of exploration of competitive ability of sugar-beet and sugar, among whom the noticeable places are held by V. Bondar [1], M. Kodenska,

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V. Mesel-Veseliak [4], O. Shpychak, M. Yarchuk [7] and others.

The objective of the article – to point out the problems of the lagging in a number of proofs in a branch of Ukrainian sugar beet behind European level, to insure economical level of its competitive ability and to set up the conditions reforming of all the market system on

the subject of tendencies, that are being observed in the EU countries.

Statement of main results of the study. The current level of competitive ability of domestic sugar beet production is obviously insufficient to successfully compete in the world market due to number of proofs (Table 1).

1. Comparative characteristics of the main indexes in a sugar beet production of Ukraine and economically developed countries

Index	Ukraine	Economically developed country
Sugar content, %	16,6...17,1	17,5...18,5
Sugar output, %	13,8...14,2	15,5...16,0
Average crop productivity of sugar beet, t/ha	42...48	60...90
Sugar output per 1 ha, t	4,5...6,2	10,0...14,5
Non sugar content in the dry matter of root crops, %	7,5	1,4
Alpha-amine nitrogen and sodium content	twice or threefold as many as the content in the root crops, being grown in the West	
Goodness of cellular fluid, %	85,9...88,6	88...91
Index of production	81...83	88...90

Source: formed by author according to the National Association of Sugar Producers «Ukr sugar» and International sugar organization.

The same is happening with the indexes of sugar quality, that don't measure up the requirements of European quality standards, with the content of ash especially (3,7 times more), with the indicator of color (sugar in Ukraine is 2,3-4,7 deeper).

Furthermore, it produces precious few the 1st category sugar. For example, for the 2014, 1st category is 9,2 % (192 thousand tons), 2nd category is 21,4 % (446 thousand tons), 3rd category

is 68,9 % (1934 thousand tons), 4th category is (approximately 0,5 %) [7, p. 17].

In a case of fair assessment, we must emphasize, that the lagging in a number of proofs in a branch of sugar beet behind European level is due in equal part to natural agents. A vegetational period of sugar beets e.g. in France is 220 days in the comparison to maximal in Ukraine, which is 160 days. Damping is much better on this geographical axis than in Ukraine (Table 2).

2. An influence of a natural indicators (the vegetational period) on a crop capacity level

The vegetational period, days	Average crop capacity, t/ha	Countries
220	80-90	France, Spain, Belgium, Great Britain
190	70-75	Italy, Luxemburg, Austria, Germany, Denmark
160	50-60	Turkey, Ukraine, Poland, Belarus, Baltic countries, Sweden, Finland

Source: formed by author according to the International sugar organization.

The reason is obvious. Yet it can't justify the lagging of Ukraine behind its neighbours: Poland, Belarus, even behind Russian Federation, which has far shorter vegetational period of sugar beets. It happens, when the last generation of Ukrainian hybrids don't fall behind the foreign in crop capacity and sugar content, even exceed them in a resistance to difficult natural conditions and diseases in a number of cases [6, p. 96-97].

Therefore, the bulk of lagging is the subjective indicators, which are induced in the number of negative occurrences such as: a direct breaches of principles of market economy in the sugar beet subcomplex APK; an absence of state strategy to progress branch in rather complicated competitive environment; an inability to perform a modern business projects, to use up the achievements of the world and domestic science for stabilization and increasing of pro-

duction efficiency. If we analyze the West European sugar beet production technologies and compare them with our, they'll essentially differs in the expenses per crop unit, amount and quality of activities. In the West the bulk of expenses are utilized on the machines (materialized labour), the excuses on a fertilizer, seeds, means of protection, fuel are 35-40%. The situation is just the opposite in Ukraine – 80% of expenses are used up on the fertilizer, seeds, means of protection, fuel and payment for work, which determines overly large prime cost and low level of profitableness.

We still can see the number of waste operations, which are applied in agricultures: breaking up of soil, collecting and transporting of haulm, regulation of plants, selection of root crops, extraction of weeds. The main technological operations are failed to be done in time and in good quality, especially it concerns to sowing, struggling with weeds, pests and diseases; there is a lot of losses in collecting.

Meanwhile, there are number of measures, which don't demand an extra expenses at all. Well-organized discharging of them provides the noticeable crop capacity growth (Table 3).

3. Potential Indicators that Influence on the Crop Capacity Growth and Sugar Content of Sugar beet per 1 ha

Indicator	Crop capacity growth, c/ha
Choosing the best available precursor	4
Optimal work periods in the same volumes of them	5
The balance of NPK + liming of sour soils	12,9 sugar content + 1,3 %
Even placing of stairs	6,8
The quality of works in spacings (don't cut out the plants)	4,2
Selecting and correct usage of means of protection	12,9
Adjusting of the harvesting machineries and carefulness during its transportation and piling	11,5
GRAND TOTAL	57,3 sugar content + 1,3 %

Source: Formed by author according to the data [1, p. 4].

The same situation occurs with usage of progressive technologies in the sugar industry: a number of sugar factories haven't been updating and still have been working at the old, high cost schemes; sugar factories have significant areas (in the amount of hectares) of clamp fields, while West sugar factories use an archaic method of root crop supply on the rod by the way of water-wash; overly huge expenditure of electrical and thermal (heat) energies; a high prices of sugar beets, which in the company with energetics, forms 80% of total expenditures on ton of

sugar; a large amount of workers with low level of salary, which forms 3,5-4,0% in the expenditure structure, while that indicator abroad is 12-15%; unregulated raw materials zones with big radius of root crop delivery on the processing.

The last point induces the reducing of getting juice period and production duration. This way, in 2014 the whole production duration throughout the sugar industry per one factory formed on average 85 workdays. But in the cut of factories it looks somewhat in a different way [7, p. 15]:

Quantity of factories	Quantity of workdays
1	20-30
21	31-45
7	46-60
20	61-90
18	More than 90

There is a difference in a sugar output between sugar factories. For example, in notorious 2014:

Quantity of factories	Sugar output, %
1	Lesser than 12
10	12-13
13	13-14
17	14-15
7	More than 15

The indexes of the number of factories even lesser – 80,1-83,5, especially in Volyn region, Kirovograd region, Lviv region, Cherkassy region. The index of sugar output (the production index) is low, too. It is in the range 76,6-79,0. Only 4 sugar factories – Sokolovskyy, Pervuhinskyy, Zhdanivsky, Zasilskyy – have index 85 and more [7, p. 17, 34].

The usage of fuel and energy resources in sugar industry is pretty important point. So, the component of fuel and energy of technological aims in the sugar prime cost is more than 27%. According to the counts of an experts of The National Association of Sugar Producers of Ukraine “Ukrsugar”, the total expenditures of conventional fuel are approximately 656 K tons and 445 mln kw-hr of electrical energy. In 2014 sugar factories expends on the production needs 460,2 mln m³ of natural gas, 22,8 K tons of pellets, 6,8 mln m³ of biogas, 8,2 K tons of peat [7, p. 18]. That is, natural gas prevails in the current energetic balance. But there is problem for sugar industry with natural gas, concerning the limitation of its supplied amount for the processing of sugar beets. It costs approximately 7200 UAH per 1000 m³. In 2015 its total cost was 3,3 bln UAH or about 40 m³ per 1 ton of processed beets.

It became the stimulus to find some alternative energy source, making use of them to put right the situation. The number of companies and sugar factories are successfully solving that problem. In a way, 8 large enterprises of the branch have already changed over to the coal as the alternative fuel. They're: Globinskiy sugar factory (+biogas); Uzynskyy (+pellets); Zgurovsky (+peat); Gaysinskiy; Kryzhopolsky etc. Another fuel alternatives are added within parentheses.

However, the great part of enterprises are not engaged in the introduction of low-energy measures. The solution of problem is a diversification of sugar beet production – its connection with the production of bioethanol from the wastes of sugar beet processing e.g. the production of molasses and biogas from bagasse and beet leaves (tops). It's possible to organize the production of solid fuel types in the number of enterprises. First of all, all these fuel types should be used up for the providing of sugar-beet production with electrical and heat ener-

gies. The excess should be exported or turned upon the general bio-resource system of Ukraine.

There is another problem, which should be drastically decided to allow Ukraine compete in the sugar market, – the reconstruction of processing enterprises. In the conditions of limited circulating assets, an absence of soft lending, a re-equipment of sugar beet production can take decades, and being forced out from the market this period.

The main way to avoid that – is an engaging of large foreign investments to hold the reconstruction in 3-4 years. According to the accounts of experts of the Institute of Bioenergy Crops and Sugar Beet of NAAS (Ukraine), it additionally should be built an enterprises in the production of bioethanol, biogas, solid fuel types etc. Besides that, we must simultaneously solve the problem of the Ukrainian bioenergetics in general.

The creation and functioning of such bioenergetic complexes in Ukraine are well fitted in the reformation (decentralization) of the system of formation of territorial communities, which will directly be able to participate in the functioning of that complex, in a dealing out of material benefits and in the significant improvement of their material state.

However, an ending of economical reform in Ukraine, an overcoming of venal practices, a solving of a land issue and a realization of other legal and social measures are the obligatory conditions of engaging of foreign investments.

The number of agricultural enterprises and sugar beet factories introduce the leading technologies of sugar beet and sugar production, a building, reconstruction of all the sectors, departments (with a large amount of work and investments), realize the modernization and an automation of technological and heating circuits, even in the hard economical and social conditions. They are a middle-sized integrated unions, based on 1-2-3 sugar factories, with 40-50 K ha of raw material zones. They are public JSC “Salyvonkivskyy sugar factory”, Ltd “Radehiv sugar”, Ltd “Zorya Podillya PK”, sequestered subdivision “Narkevytskyy sugar factory”, etc. In 2015 sugar beet factories grew a sugar beet crop with the content of sugar more than 17 %, which hadn't been for a long time

before. It's possible that it was firstly balanced a supply and a demand of sugar in Ukraine in 2015, that had a positive influence on the wholesale-vacation prices, which were stabilized in the level of 12700-13500 UAH per 1 ton of sugar and still stand in market.

In order to estimate the work of enterprises of a sugar beet industry The National Association of Sugar Producers of Ukraine "Ukrsugar" designed a system of indexes, which determines the efficiency of their work per marketing year and the level of their competitive ability to get close to a high-developed countries. They are [7, p. 23]: a difference between a sugar beet digestion in an acceptance and output of sugar; a content of sugar output in percentage; an amount of the whole produced sugar (including the sugar of 1 and 2 categories in the percentage ratio); a sugar losses during production; a molasses content in sugar; an index of sugar confiscation from the sugar beets; a duration of production; a specific losses of equivalent fuel; a limestone expenses; an introduction of a systems according to the principles of Hazard Analysis and Critical Control Points (system of

food safety management) and ISO (quality management system).

The last index is the most important. It foreknows the realization of measures in the introduction and functioning of ISO and HACCP systems. They ensure that all the kinds of activities in the sugar factory, which influence on the safety and quality of white sugar, will be documented and effectively implemented according to the regulations' requires.

The realization of those systems in the number of factories for the last 2 years has already given the results. For example during 2013-2014 the production of a 1st category sugar was increasing to 9,23-9,44% from 1,68% in 2012. The production of a 2nd category sugar was increasing accordingly from 8,72% to 21,44-24,39% [7, p. 17].

The suggested system involves a determining of individual points, as a ratio of an index to its mean value in the branch. The best index is equal to the highest point. A sum of points determines the position of a factory between others. There is a sums of point of the first 10 sugar factories (Table 4).

4. The Sum of Points of the First 10 Sugar Factories in Ukraine

The name of sugar factory	The sum of point	Place
Ltd "Khmelnitsky" Production Enterprise Zhdanivsky sugar factory	11,581	1
Ltd "Volochnisk-Agro" Production Enterprise Narkevitsky sugar factory	11,384	2
Ltd "Agrocomplex "Green Valley" (Tomashpil)	10,982	3
Ltd "Radekhiv sugar - Radekhiv production"	10,981	4
Private JSC "Food company "Podillja" (Krizhopil)	10,973	5
Ltd "Food company "Zorya Podillja" (Gysin)	10,929	6
Ltd "NCI" Poltavazernoproduct" EP (Hlobinsky sugar factory)	10,858	7
Ltd Dovzhenko "Agricultural company" Production Enterprise Yareskiivsky sugar factory	10,616	8
Public JSC "Pervuhinsky sugar factory"	10,217	9
Ltd "Starokostyantynivtsukor"	10,123	10

Source: [7, p. 24].

The adoption of a document concerning the association with EU in Ukraine in 2014 also would promote the increasing of the competitive ability of a sugar beet industry. It foreknows the 10-year transition period to the modernization of food industry enterprises according to the requirements of technical regulations and standards, which are acting in EU. The Parliament of Ukraine adopted the law that defines the procedure of adaptation of Ukrainian standards to European standards concerning food safety [2].

Providing of sugar branch with highly experienced specialists – one more indicator of in-

creasing the competitive level of it. Experts unwillingly choose in branch due to its low level of salary, an absence of proper living conditions. The largest sugar enterprises can put that on the right way. They should pay the fiddler on a students' studies, organization of refresher courses etc.

Conclusions. There are advances to increase the competitive ability of sugar beet production in Ukraine. We should:

1) introduce an evaluation system of a work of sugar beet factories according to the next indicators: a difference between a sugar beet

digestion in an acceptance and output of sugar; a content of sugar output in percentage; an amount of the whole produced sugar (including the sugar of 1 and 2 categories in the percentage ratio); a sugar losses during production; a molasses content in sugar; an index of sugar confiscation from the sugar beets; a duration of production; a specific losses of equivalent fuel; a limestone expenses; an introduction of a food and a quality safety management systems.

2) make deeper a diversification of products and improve a technology;

3) make a harmonization of Ukrainian legislation to European standards;

4) introduce a quality standards, that are acting in EU (on a sugar beets, sugar, seeds of sugar beets);

5) restore an effectively preparation system of an entrants based on an agricultural universities, constant specialized courses, seminars, etc;

6) introduce a justice system of relationships between the subjects of subcomplex and learn a market mechanism. An aim – to decrease a risks related with appearing of zones of instability and branch depression.

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Новини АПК

Сільському господарству однозначно потрібен спеціальний режим оподаткування

Сільське господарство не має розглядатися лише як донор державного бюджету. Про це зазначив директор Національного наукового центру «Інститут аграрної економіки», академік НААН Юрій Лупенко, коментуючи питання щодо доцільності збереження податкових пільг для аграріїв.

На його думку, при переведенні сільського господарства на загальну систему оподаткування слід пам'ятати, що аграрний сектор економіки – це не лише бізнес. Це і продовольча безпека держави, і зайнятість сільських жителів, і збереження довкілля тощо.

У тому, що Україна має сильні позиції в експорті агропродовольчої продукції, і навіть за умов спаду в економіці та проведення АТО має прибутки, вирішальна роль належить тій системі пільгового оподаткування, яка була запроваджена в 1998–1999 роках, зауважив академік.

За його словами, у багатьох країнах світу й не лише у розвинутих сільське господарство є переважно дотаційним. Пільги по ПДВ для фермерів – це звична практика в Європейському Союзі, до якого Україна прагне приєднатися. Тож цю європейську норму слід використовувати і в нашій державі.

Сільському господарству однозначно потрібен спеціальний режим оподаткування, наголосив Юрій Лупенко. Його зміст та умови можуть і повинні обговорюватися. Система оподаткування в АПК потребує вдосконалення, оскільки вона має виконувати регулюючу і стимулюючу функції, підсумував академік.

Національний науковий центр
«Інститут аграрної економіки»