УДК 631.115

V.M. Sinelnikov, O.N. Shabunya; **N.L. Pavlovskaya**

Education establishment "Belarusian State Agrarian Technical University", Minsk, the Republic of Belarus

CONDITION ASSESSMENT OF A BEET SUGAR SUBCOMPLEX OF THE REPUBLIC OF BELARUS

Abstract

The economic evaluation of the performance of the beet sugar subcomplex of Republic of Belarus is made in the article. The detailed analysis of work of branches being its part is made.

***Key words*:** beet sugar subcomplex, production of sugar, export potential, cultivated areas, productivity.

Introduction

Beet sugar production in the Republic of Belarus is one of the most dynamically developing agricultural branches of the country. More than 600 farms in Brest, Grodno, Mogilyov and Minsk regions where more than 95% of cultivated areas and beet sugar gross collection are concentrated are engaged in industrial sugar beet cultivation. In recent years sugar beet is cultivated on the areas of 97-100 thousand hectares, productivity for the last years has been at the level of 395–485 c/hectare. At the same time, the achieved productivity of sugar beet across Belarus doesn't correspond to the biological potential of the cropper, and lags behind the leading agrarian countries of Europe.

Sugar industry is one of the priority directions of social and economic development of the Republic of Belarus, which ensures food safety of the country and promoting development of agricultural production. Sugar industry development positively influences economic development of the agricultural and sugar organizations. Manufacturing of sugar by-products – beet pulp, molasses, filtration sludge (sugar mud) promotes food supply strengthening and soils fertility improvement [1].

Main part

Average productivity of sugar beet at all kinds of farms of Belarus in 2013 constituted 437 c/hectare. However, in the majority of areas the crop of this culture was lower, so in Mogilyov area it constituted 341 c/hectare; in Minsk – 418 c/hectare; in Brest – 389 c/hectare and only in Grodno region the productivity exceeded all-republican value and constituted 498 c/hectare. This region was the leader in croppage (41% of total amount), Minsk region was on the second place — 34%, Brest region - on the third (20%) and Mogilyov area was on the fourth (5%) (table 1) [2].

Table 1 - Dynamics of sugar beet production indices in all kinds of farms of the Republic of Belarus in 2007 - 2013 [2]

Indices	Year						
	2007	2008	2009	2010	2011	2012	2013
Cultivated area, one thousand hectares	95,6	92,7	92,8	97,3	100,5	99,6	101,9
Crop page, thousand tons	3626	4030	3970	3773	4487	4772	4343
Productivity, c/hectare	387	439	450	395	454	485	437

Important and defining factor in of high level sugar beet productivity achievement is timely performance of all complex of technological operations, observance of agronomic rules of its cultivation taking in compliance with soil and climatic conditions. The loamy soils constituting about 37% of arable lands of the Republic of Belarus are the most suitable for cultivation of this culture. The best lands for sugar beet cultivation are Minsk and Grodno areas. On standard net income for cultivation of sugar beet in the republic about 85% of soils are favorable.

At present the State program of sugar industry development for 2011-2015 is implemented. In the frames of this program the issues of raw materials source development for the sugar production and extension of sugar beet processing are being settled [1].

So, during the first year of the program implementation the sugar beet output in the country increased to 4,5 million tons, or by 19% in comparison with the previous year. Cultivated areas under sugar beet for the next years are planned to be fixed at level of 105 thousand hectares, expected productivity will constitute 524 c/hectare, root crops gross collecting should be increased to 5,5 million tons [1].

In Belarus the improvement of sugar beet technological indices is planned to be achieved through the increase of its sugar content level. If in 2009-2010 the content of sugar in root crops failed to reach the basic size (16%), in the course of the last three years. — came nearer to this level, and by 2015 has to exceed basic sugar content by 1% and to make 17%.

Sugar beet cultivation still requires rather high labor input and material capacity, despite introduction of new processing methods of crops care and root crops collecting and mechanization of the main technological processes. At a number of farms farm labor input for one hectare of sugar beet crops appears to be 8-10 times higher, than that for one hectare of grain crops, material and monetary expenses — are 6-8 times higher.

Expediency of beet cultivation is determined by the positive influence of beet crop rotation on other crops cultivation and by high profitability of the given branch in agro-industrial complex of Belarus. So, following the results of 2013 sugar beet appeared one of the most profitable croppers: average profitability reached 17,4% while for grain crops this index made 14,6%. Profitability of sugar beet in 2013 increased in the leading farms of the Grodno and Minsk areas to level of 35-40%. Apart from that, to achieve food security of the country the republic has to increase granulated sugar production mainly from domestic raw materials.

Results of effective sugar beet production, profitability of this branch in recent years are in many respects determined by level of purchase prices of this production (Table 2).

Table 2 – Indices of realization of sugar beet agricultural organizations of the Republic of Belarus [2]

Indices	Years			
	2010	2011	2012	2013
Average price of realization, one thousand rub *	103	239	358	377
Price index as a percentage to previous year, %	133,8	317,6	200,8	129,8
Profitability of production, %	2,7	36,4	28,0	17,4

* – the given values in national rubles of Republic of Belarus

One can notice the substantial increase in average price of root crops to the processing enterprises - more than twice in 2011 in comparison with 2010 and the essential growth of sugar beet productivity and sugar content level. In 2011 purchase prices on agricultural and other types of production in Republic of Belarus rose sharply due to inflationary processes.

Improvement of sugar beet crops placement in Belarus is formed under the influence of a complex of factors, the main of which are formation of compact raw zones for the root crops processing enterprises and supply of the sugar subcomplex with labor and material resources [3]. The main direction in optimization of raw zones is the concentration of beet crops in areas adjacent to sugar plants. Now in Belarus sugar beet is processed at four enterprises: Skidelsky and Gorodeysky sugar combines, Zhabinkovsky sugar plant, Slutsky sakharorafinadny combine. All of them are joint-stock companies of open type and take stable positions on the volume of processing of root crops and output (drawing).

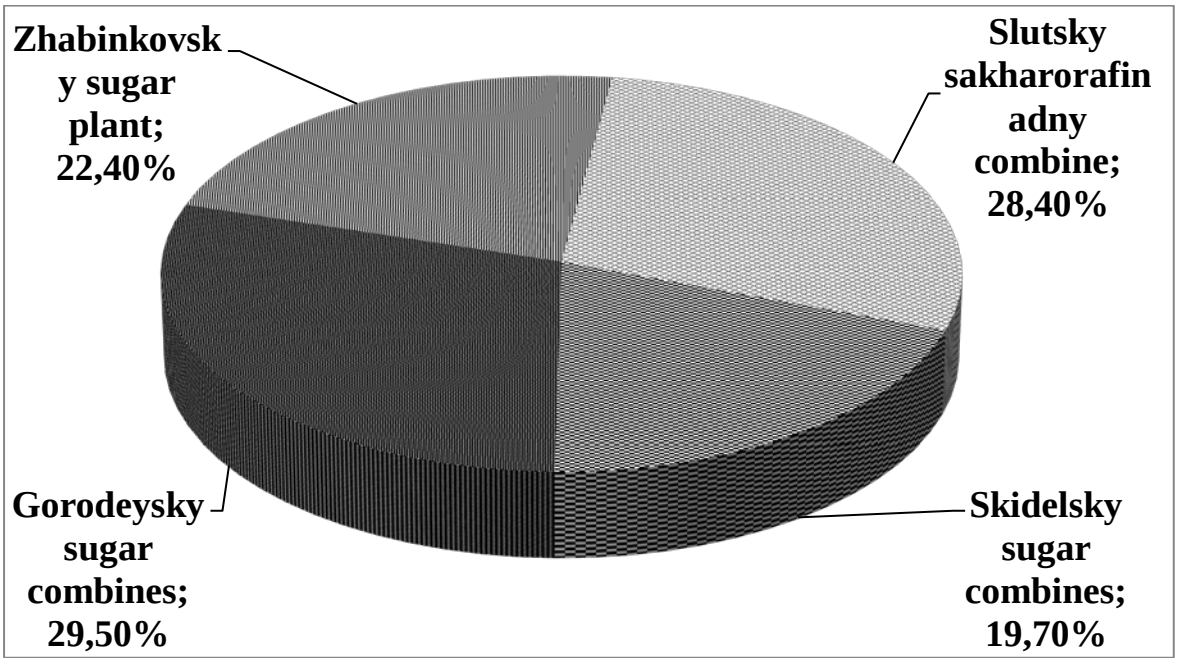

Fig. 2. Structure of sugar beet processing by the enterprises of the Republic of Belarus, %.

Among processing plants Slutsky and Gorodeysky sugar combines have the highest capacity. These enterprises process about 60% of total amount of sugar beet arriving from agricultural producers and make 57–58% of sugar.

All processing enterprises in the country have undergone modernization and develop dynamically, increasing their capacities annually. The modernization carried out in recent years allowed the sugar industry organizations to reach growth of the general sugar beet processing capacity by 5,7 thousand tons per day, (out of which JSC Skidelsky Sugar Combine - 2,2 thousand tons per day, JSC Gorodeysky Sugar Combine - 1,5 thousand tons per day, JSC Zhabinkovsky Sugar Plant - 1 thousand tons per day and JSC Slutsky sugar combine - 1 thousand tons per day) and to put in production facilities in beet pulp drying and granulation with a capacity of 650 tons of dry granulated beet pulp per day (JSC Skidelsky Sugar combine - 300 tons a day, in JSC Slutsky sugar combine - 150 tons a day and in JSC Zhabinkovsky Sugar Plant - 200 tons a day).

Now the total daily power of the sugar beet processing plants is 30% lower than necessary and constitutes 31 thousand tons a day. At the same time if beet croppage is 4,5 million tons, the processing plants capacity has to be higher in order to process the raw material in optimum

terms. For this purpose the modernization of functioning sugar plants to increase the daily power of sugar beet processing continues.

By 2015 it is planned to produce about 600 thousand tons of sugar that will allow to satisfy in full as internal needs of Belarus for sugar (about 270 thousand tons), and to fulfill obligations to export the sweet production to Russia, Uzbekistan, Moldova and other CIS countries.

Conclusion

As a result of the done researches it is possible to forecast the following: the gain in sugar production by 2015 will make about 430 billion rubles, or 28,5 percent to the level of 2009; the annual foreign currency revenue from sugar export will make about 280 million US dollars; introduction of modern technologies will allow to increase volumes of sugar beet procuring by more than 1,5 million tons.

However, despite achieved success, further stabilization of beet sugar production in agrarian and industrial complex of Belarus, ensuring of raw independence of the branch and increase in competitiveness of a domestic sugar production demand from agricultural producers and the processing enterprises to increase production efficiency on the basis of introduction of achievements of scientific and technical progress, the advanced forms of managing and production management.

References

1. About the State program of development of sugar industry for 2011-2015: The resolution of Council of ministers of the Republic of Belarus, of 24.03.2011 No. 359//National. register of legal acts of the Republic of Belarus. – 2011 . – No. 5/33535.

2. Agriculture of Republic of Belarus: statistical collection. – Minsk: National statistical committee of Republic of Belarus, 2014. – 370 pages.

В.М. Синельников, О.Н. Шабуня, Н.Л. Павловская

ОЦЕНКА СОСТОЯНИЕ СВЕКЛОСАХАРНОГО ПОДКОМПЛЕКСА РЕСПУБЛИКИ БЕЛАРУСЬ

В статье производится экономическая оценка работы свеклосахарного подкомплекса Республики Беларусь. Производится детальный анализ работы отраслей входящих в его состав.

Ключевые слова: свеклосахарный подкомплекс, производство сахара, экспортный потенциал, посевные площади, урожайность.

УДК 630:308

Н.Г. Синяк, М.В. Синельников

(Учреждение образования «Белорусский государственный технологический университет», г. Минск, Республика Беларусь)

ПОПЕРЕДЕЛЬНЫЙ МЕТОД УЧЕТА ЗАТРАТ В ЛЕСОЗАГОТОВИТЕЛЬНОМ ПРОИЗВОДСТВЕ

Аннотация

В статье на примере лесозаготовительного производства изложен попередельный метод калькулирования, при котором объектами калькулирования