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WAYS TO INCREASE THE ECONOMIC EFFICIENCY OF SOYBEAN GROWING

ШЛЯХИ ПІДВИЩЕННЯ ЕКОНОМІЧНОЇ ЕФЕКТИВНОСТІ ВИРОЩУВАННЯ СОЇ

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Останнім часом в нашій державі є стала тенденція збільшення посівних площ олійних культур в аграрних підприємствах, що зумовлено ефективністю їх вирощування порівняно з іншими сільськогосподарськими культурами, зокрема відмічається і зростання виробництва зерна сої. Це пов'язано із широким її використанням для технічних цілей (перш за все – для виробництва біопалива) та потреб харчової промисловості. Наше дослідження присвячене вивченню сучасного стану ефективності виробництва сої та пошуку шляхів її підвищення.

Recently in our country, there is a constant tendency to increase the sown area of oilseeds in agricultural enterprises, due to the efficiency of their cultivation compared to other crops; in particular, there is an increase in soybean production. This is due to its widespread use for technical purposes (primarily for the production of bio-fuels) and the needs of the food industry. Our study is devoted to the study of the current state of efficiency of soybean production and finding ways to increase it.

Formulation of the problem in general. Growing oilseeds is an important component of the country's economic development strategy. Over the last decade, there has been a steady trend of expanding sown areas of oilseeds in agricultural enterprises, due to the profitability of their cultivation compared to other crops. Soybeans are one of the best precursors in crop rotation. It promotes the accumulation of nitrogen, improves the structure and fertility of the soil, and cleans the field of weeds. Plants of this culture are able to use inaccessible sparingly soluble nutrients from the lower layers of the soil and include them in the food cycle.

Soybeans are able to increase soil fertility, leaving after harvesting 60-80 kg/ha of biologically fixed nitrogen. Yields of cereals sown after soybeans increase by 15-20 %.

The presence of favorable soil and climatic conditions for soybean cultivation, significant scientific and production potential of the country create the necessary conditions for the organization of efficient production of crude oil. The factor that hinders the realization of the available potential and increase the economic efficiency of soybean production is the extensive nature of the development of oilseeds, especially sunflower. Expansion of areas under this crop, beyond scientifically sound standards, leads to soil depletion, loss of fertility, which negatively affects the yield of crops grown after such a predecessor.

Analysis of recent research and publications. Scientists have always paid due attention to the study of the problem of improving the efficiency of agricultural production. A significant contribution to the study of the state and development of theoretical issues and practical recommendations for efficient production of oilseeds in general and soybeans in particular, belongs to well-known agricultural economists V. Andriychuk, V. Galants, M. Demyanenko, M. Kisil, I. Lukinov, M. Malik, G. Maznev, O. Onishchenko, B. Paskhaver, P. Sabluk, I. Cherven, O. Shpychak and others.

Their scientific publications are mostly devoted to the important problems of substantiating the theoretical foundations of improving the efficiency of agricultural production in general and oilseeds in particular at the macroeconomic level. At present, the microeconomic level of production activity is no less important for the study of agricultural efficiency. In addition, the problem of improving production

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efficiency is multifaceted and multi-vector in content and essence, and at the same time, it is characterized by opportunities to expand the use in the production and technological process of new achievements of scientific, technological and technological progress.

The study of the efficiency of production and oilseeds, in particular soybeans, which is strategic for Ukraine, needs to be deepened and expanded.

Formulation of the goals of the article. The article is devoted to the study of the current state of efficiency of soybean production.

Presentation of the main research material. The efficiency of agricultural production is one of the most important economic problems of social life. It accumulates in a close combination of the use of a set of natural, organizational, economic, technical, technological factors that ensure the process of reproduction of social production. Its effectiveness is influenced by soil and climatic conditions in agriculture, labor supply, material and technical means, financial resources, etc. Improving the efficiency of agricultural production is one of the crucial conditions for improving the material well-being of the population, the implementation of social transformations in rural areas [3, 10].

In these conditions, studies of the efficiency of agricultural production are of particular importance. It should be emphasized that depending on the most significant impact on the result of production activities of certain factors, the corresponding efficiency is formed - technological, organizational, economic, etc.

The study of the impact of individual factors on production efficiency will make it possible to manage this complex socio-economic process.

The need to solve problems related to improving the efficiency of agricultural production is essential in the development of the agricultural sector of the national economy.

It is important that crop rotations with legumes, in particular soybeans, are considered classic for restoring soil fertility, increasing their productivity, increasing food resources and improving environmental safety. The role of soybeans in increasing soil fertility is unsurpassed due to its symbiosis with nodule bacteria, because of which it accumulates 150-200 kg/ha of nitrogen, 60-80% provides its own need for this nutrient enriches the soil, improves the nitrogen balance of the latter, increases crop yields sown after it, and crop rotation productivity in general. The annual volume of biological fixation of nitrogen by soybeans from the atmosphere in the United States is 5.8 million tons, Brazil - 4.1, Argentina - 3.4, China - 1.6 million tons. This is similar to the work of powerful plants for the production of nitrogen fertilizers [7, 15].

The world soybean sowing area in 2009 reached 100 million hectares for the first time. It was grown in major agricultural regions in 90 countries. World production of this crop reached 253 million tons, in terms of production it ranks fourth in the world after corn (796 million tons), wheat (676 million tons) and rice (435 million tons) [3, 4].

Leading producer countries place soybean crops on fertile lands, in conditions with sufficient moisture supply and heat regime. It is not cultivated in cool regions with acidic soils and in arid and arid regions with salt marshes.

In terms of economic efficiency of soybeans:

1) provides the production of the cheapest vegetable protein;

2) due to the properties of biological fixation of nitrogen, the air significantly reduces the need for purchase and application of nitrogen fertilizers in agriculture;

3) ensures the production of environmentally friendly products.

It is also important that in the regions and agricultural enterprises, where soybeans occupy 10-15% in crop rotation, in recent years had the largest grain production.

Soybean is one of the main protein-oil crops with a wide range of applications: food, feed, technical and medical. Given the high nutritional value and protein content of soybeans identified by UNESCO as a strategic food crop [8, 12].

Soybeans are also, as mentioned above, a unique forage crop, which is one of the main strategic crops of agriculture. It has ensured the dynamic development of agriculture in those countries of the world where it is cultivated on millions and tens of millions of hectares. In 1960, 31 million tons of soybeans were produced, and in 2019, according to the FAO, more than 250 million tons of soybeans were grown.

It is known that the duty of the state is to ensure food independence and food security. One of the ways to achieve this in Ukraine is to increase the efficiency of crop and livestock production, including by increasing the production of soybeans and the use of products of its processing in feed production [9, 12].

In modern conditions of agricultural production in Ukraine, soybeans have become important as a valuable protein and oil crop, which is widely used in feed production, food, processing industry and medicine [1, 2, 9] Soybeans are used to produce more than 400 types of products. Soybean meal and cake are the most valuable feed additives. Nutritious feed for livestock and poultry is its green mass, haulage, grass meal.

In the East, soybeans are important as a food crop, and in other parts of the world, such as the United States, they were first grown for fodder or green manure, and much later began to dominate the grain direction. At the same time, soybean cultivation for grain in some countries reaches almost 100 percent.

In Ukraine, soybeans have not yet acquired such a strategic and important importance, and only in some areas, it is grown mainly for grain. Therefore, it is not time to use soy to solve the problem of protein, as, for example, in the United States, China, Brazil, Italy and other countries. It is now rapidly increasing its production and efficient use in animal husbandry.

Due to the rich and diverse chemical composition, and it contains an average of 39 % (33-52 %) protein, 20 % (14-25 %) semi-drying oil, 24 % carbohydrates, 5 % ash elements (with a predominant content of potassium, phosphorus and calcium), as well as various enzymes, vitamins (A, B, C, D, E) and other important organic and inorganic substances necessary for a human and animal body, soy does not know equals in rates of growth of production: for the last 60 years they grew in the world almost nine, while wheat - 4.6 times, corn - 4.3, rice - 3.4 and barley - 4.2 times [8-10, 14].

According to the World Food Organization (FAO), more than 80 countries grow soybeans in the world. The main amount of soybeans is produced: in the USA - 54.8; Brazil - 19.2; China - 9.7; Argentina - 11.1; India - 3.0; Italy - 1.4 million tons. The CIS countries produce 1.0-1.3 million tons. In recent years, the area under soybeans in Ukraine is 0.5-0.6 million hectares. The yield of this valuable crop is also low.

In the main soybean countries, soybeans are located in the so-called soybean belt. For example, in the United States, the Corn-Soybean Belt has long been formed, in which 32 million hectares of corn and 31 million hectares of soybeans were sown in 2009. At the heart of this belt is the short-rotation crop rotation "soybean-corn". In this country, soybean as a grain legume biologically fixes about 190 kg/ha of nitrogen from the atmosphere, on the whole area - 5.8 million tons of nitrogen, a significant part of which leaves behind its successor - corn. This is one of the secrets of the fact that US farmers apply a low dose of nitrogen fertilizers to corn, but have a high yield. Thus, in 2009 the yield of corn was 103 kg/ha, and its production reached 334 million tons; soybeans, respectively, - 29.6 kg/ha and 91.5 million tons [11, 15].

In world agriculture, this is the most productive and most cost-effective short-rotation crop rotation. In the future, soybean production envisages the formation of a soybean belt in the Forest-Steppe in Ukraine. Here, soil and climatic conditions best meet the biological needs of this crop, so it reaches full maturity and forms a high yield.

The Forest-Steppe zone unites nine administrative regions: Vinnytsia, Kyiv, Poltava, Sumy, Ternopil, Kharkiv, Khmelnytsky, Cherkasy and Chernivtsi. However, forest-steppe conditions extend to a much larger area. These include some regions of the soil and climatic zones of the Steppe and Polissya, where there are areas with forest-steppe conditions, in particular with soils suitable for soybean cultivation, thermal and water resources, the length of the growing season. That is, they go beyond the administrative areas of the Forest-Steppe zone [12].

The Polissya zone also includes Chernihiv, Zhytomyr, Rivne and Volyn oblasts, the southern districts of which fall into the forest-steppe zone, as well as Lviv oblast, which unites not only forest-steppe districts, but also territories that are part of the Carpathian mountain region, including and Precarpathians. The same applies to Ivano-Frankivsk, Rivne and Zakarpattia regions, which do not have Polissya districts at all. In this case, the area of the soybean belt in the country is significantly expanding, increasing the location of soybean crops, and increasing the production of this effective and promising crop [7].

The main factors in soybean cultivation in Ukraine, taking into account soil fertility, are moisture and heat. In the south, the steppe areas have enough heat, but the limiting factor is the lack of moisture. Therefore, the yield of soybeans by years on non-irrigated lands varies sharply from 3-4 kg/ha in dry years to 15-22 kg/ha in favorable years for moisture supply.

On irrigated lands, due to the high cost of an irrigated hectare of arable land, zero profitability of soybean cultivation is at a yield of 16-17 c/ha. Yields on irrigated lands range from 20-22 c/ha to 28-35 c/ha. Thus, the profitability of soybean cultivation in the south of Ukraine varies from year to year on non-irrigated lands from minus 60-70 % to plus 50-70 %, on irrigated lands and profitability is from 50 to 90 %.

Stable yields of 18-22 c/ha are obtained by farms that have the financial and material resources to fully implement agro-technical measures for intensive soybean growing technology [4].

The profitability of soybean cultivation in the forest-steppe of Ukraine consistently has positive indicators, reaching 90-120 % [13].

In recent years, Ukraine has seen a high rate of increase in sown areas and soybean production. This is due to the widespread use of oil for technical purposes and primarily for the production of biofuels. It is known that recently soybeans are used in large quantities as an additive in the food industry. There are both positive and negative sides to this. On the negative side, it is primarily the uncontrolled introduction of genetically modified varieties into production, as well as excessive unauthorized soybean additives in food products.

Conclusions. At the present stage, soybeans are becoming the main crop to increase the efficiency of agriculture in our country, solving many social problems, developing domestic technologies for processing soybeans for feed and food purposes, organizing jobs in industry and agriculture and an important factor in improving Ukraine's image as world food producer`s resources.

To increase the efficiency of soybean production, from our point of view, it is necessary to develop and implement adaptive cultivation technologies for each soil and climatic zone of Ukraine.

When developing a strategy and tactics of soybean production, improving the location of its crops, it is advisable to take into account:

- Requirements for soil and climatic conditions; seed yield; economic efficiency of production;
- competitiveness and demand for seeds, oil and meal in the domestic and world markets.

Literature.

1. Artemenko O.O. Wyposażenie rolnictwa Polski i Ukrainy w środki mechanizacji do produkcji roślinnej / Motrol. Commission of motorization and energetics in agriculture an international journal on operation of farm and agri-food industry machinery // O. Artemenko, W. Izdebski, J. Skudlarski, S. Zając, S. Zaika. - Lublin – Rzeszow. Vol. 15, No 1. 2013. С. 3-6.

2. Krasnorutskyy O.O. Economic spheres of the global biofuels market / O.O. Krasnorutskyy, S.O. Zaika // Науковий вісник Полісся. – 2016. – № 4 (8), ч. 1. – С. 24–28.

3. Бабич. А. Соєвий пояс і розміщення виробництва сої в Україні / Бабич А., Побережна А. // Пропозиція. - 2010. - № 4. - С. 52-54.

4. Боднар О.В. Перспективи збільшення доданої вартості на ринку соєвих бобів і продуктів їх переробки в Україні. Економіка АПК. - 2015. - №3. С. - 51-60.

5. Галузева програма «Виробництво та ефективне використання сої та продуктів її переробки в Україні на 2015-2020 роки» [Електронний ресурс]. - Режим доступу: http://agrostore.biz.ua/galuzeva-programa-virobnictvo-ta-efektivne-vikoristannya-so%D1%97-ta-produktiv-%D1%97%D1%97-pererobki-v-ukra%D1%97ni-na-2015-2020-roki.

6. Заїка С.О. Оперативний аналіз виробничої діяльності підприємств АПК [Навчальний посібник] / С.О. Заїка, А.В. Півень. – Харків: Вид-во «Міськдрук», 2010. – 113 с.

7. Мазнєв Г. Є. Інноваційні ресурсозберігаючі технології: ефективність в умовах різного фінансового стану агроформувань: [монографія] / За ред. проф. Г. Є. Мазнєва. – Харків : Вид-во «Майдан», 2015. – 592 с.

8. Мазнєв Г. Адаптація інноваційних агротехнологічних рішень до умов різного забезпечення сільськогосподарських підприємств / [Г. Мазнєв, О. Бобловський, О. Краснорученький, О. Артеменко, С. Заїка] // Техніка АПК. – 2008. – № 9 – 10. – С. 12 – 16.

9. Мазоренко Д.І. Технологічні карти та витрати на вирощування сільськогосподарських культур з різним ресурсним забезпеченням / Мазоренко Д. І. ; під ред. Д. І. Мазоренка, Г. Є. Мазнсва. – Харків : ХНТУСГ, 2006. – 725 с.

10. Мазоренко Д.І., Мазнєв Г.Є., Бобловський О.Ю., Артеменко О.О., Заїка С.О., Красноруцький О.О. Методика розробки технологічних карт та нормативів витрат на вирощування сільськогосподарських культур. – Харків: ХДТУСГ. – 2003. – 50 с.

11. Підлубна О. Економічна ефективність виробництва насіння сої на регіональному рівні / О. Підлубна, С. Концеба // Економіка АПК. - 2015. - №1. - С. 14-20 [Електронний ресурс]. — Режим доступу: http://eapk.org.ua/ru/contents/2015/01/14/

12. Присяжнюк О.І., Григоренко С.В., Половинчук О.Ю. Особливості реалізації біологічного потенціалу сортів сої залежно від технологічних прийомів вирощування в умовах Лісостепу України. Plant Var. Stud. Prot. 2018. Т. 14. - № 2. - С. 215-223.

13. Саблук П.Т. Технології вирощування зернових і технічних культур в умовах Лісостепу України; 2-е вид., доп. К.: ННЦ ІАЕ, 2008. 720 с.

14. Технології вирощування зернових і технічних культур в умовах Лісостепу України / За ред. П.Т. Саблука, Д.І. Мазоренка, Г.Є. Мазнєва. – 2-е вид., доп. – К.: ННЦ ІАЕ, 2008. – 720 с.

15. Тонюк М.О., Концеба С.М. Шляхи підвищення економічної ефективності виробництва насіння олійних культур у регіоні. Економіка АПК. 2015. - №3. С. - 28-33.

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УНІФІКОВАНІ ЗВИЧАЇ ПРИ УКЛАДАННІ ЗОВНІШНЬОЕКОНОМІЧНИХ ДОГОВОРІВ

UNIFIED CUSTOMS IN THE CONCLUSION OF FOREIGN ECONOMIC AGREEMENTS

ШИШКО А.В., здобувачка другого (магістерського) рівня вищої освіти*
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В статті визначено сутність процесу уніфікації, розглянуто питання уніфікації договорів його мети та завдань, основні етапи становлення міжнародно-договірної уніфікації. Розглянуто сутність та особливості застосування торгових правил Інкотермс, що розроблені Міжнародною торговою палатою, як одного з прикладів міжнародно-договірної уніфікації.

***Ключові слова**: уніфікації договорів, міжнародно-договірної уніфікації, зовнішньоекономічна діяльність, Інкотермс.*

The article defines the essence of the unification process, considers the issue of unification of agreements, its purpose and objectives, the main stages of international treaty unification. The essence and peculiarities of application of Incoterms trade rules, developed by the International Chamber of Commerce, as one of the examples of international treaty unification are considered.

***Keywords**: unification of treaties, international treaty unification, foreign economic activity, Incoterms.*

Постановка проблеми у загальному вигляді. Останні роки в Україні спостерігаються тенденції активізація зовнішньоекономічної діяльності. Розширення співпраці з країнами

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