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ECOLOGICAL AND ECONOMIC MONITORING EFFICACY RESOURCE SAVING TECHNOLOGIES GROWING CROPS IN UKRAINE

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Justification of modern economic and environmental indicators regarding the effective cultivation of crops in the application of resource-saving farming systems in different soil-climatic zones of Ukraine.

Economic monitoring, efficiency of crop, wheat, barley, corn, agrocenosis, crop rotation systems, fertilizers system, processing, plant protection, environmental predictors of crop

In the years 2009- 2014 gross harvest of wheat, barley, maize and sorghum occupies a leading place in the structure of crop production and generally all agricultural production in Ukraine. It is noted that a stable grain farming creates food fund and is the basis of livestock industry backs the state reserves of grain exports and generates relatively environmentally friendly products. Thus Ukraine among the countries with significant production of high-quality grain. In this regard, increasing the efficiency of growing crops through modern technology, new equipment, scientific and reasonable system of fertilization and plant protection ensure high quality and competitiveness of Ukrainian grain to the world market. An important question remains optimize costs per unit of output that can be achieved through the introduction of new agricultural enterprises resource saving technologies [1].

The effectiveness and economic feasibility of the technologies - these are the main issues of concern agronomist each spring, especially considering the fact that the weather is different. First of all it concerns the cultivation of cereals and their protection using high blends of agrochemicals.

Thus, integrated protection as optimization of all available methods - organizational, economic, breeding and seed, agronomic, physical, mechanical, chemical, biological and other becomes paramount resource saving technologies in growing cereals in farms of all forms of ownership [5].

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It is advisable to note that the grain spiked culture - one of the most important groups of crops grown, it's a staple food of man and animals. However, having different agro-climatic conditions, Ukraine has failed to reach the top leadership of the production of cereals, indicating the urgency of ecological and economic assessment techniques and components technologies of growing crops especially in heavy energy control.

As international experience shows resursooschadnist and environmental permit stabalazuvaty and improve quantitative and qualitative changes in the grain sector of Ukraine. It is significant that the first direction is realized more in technology samoponovlyuvalnyh farming systems with minimum and zero tillage, the second - in organic technologies are implemented in environmental or biological system of agriculture in the traditional system of cultivation. [3]

It was established that the transition to new technologies, changes in cultivation farm is advisable to start with choosing the most effective system and evaluate the suitability and readiness economy to transition to the new system. This is done by assessing issues such as soil and climatic conditions; requirements for the initial state of the field; compliance with technical equipment management; availability of necessary financial support; a certain level of employees. However, No-till system imposes requirements have well-aligned fields, lack of topsoil compaction, low presence of perennial weeds, certain types of herbivores and pathogens that spread through plant remains [5].

In different regions of Ukraine during the research system No-till is confirmed as one of the most promising approaches to crop production because there are reasonable both environmental and economic terms. In particular, the efficiency of farms is expedient to note that the first rule of this technology - not to plow. Annual polytseva treatment, which for many years was considered for the main and indispensable method of farming is very intensive process that has significant damage dirt microflora, causing erosion and land degradation. No-till involves direct seeding in crop residues with minimal disruption of the structure of the earth, so to ensure gentle treatment of the soil and reduces the cost of its processing and sowing. Resource-saving technologies are very common in the United States, but every year the amount of land that is processed using No-till growing in Europe. No exception was and Ukraine. Today, according to experts, about 1 mln. Ha processed according to Min / No-till. No-till technology eliminates mechanical action on the ground. Great value in this paper conservation crop residues that form of soil cover that resists wind and water erosion, preserves the moisture and prevent weed growth, the recovery of topsoil. The main advantages of this technology over traditional is to reduce water and wind erosion, accumulation and conservation of moisture in them; improve fertility (increase humus content from 0.1 to 0.2% per year); reduce the cost of fuels and lubricants by 50-60%; reducing crop dependency on weather conditions; reducing the amount involved in

the production of tractors and agricultural machines and the costs associated with them; reduce labor costs by 3-4 times compared with the classical treatment of soil; increase yields and reduce costs. Reserves increase production also lie in the genetic potential crop yields. [4] There are 4 levels of productivity each field.

The first - a potential productivity of extensive farming, ie the yield obtained through exploitation of natural soil fertility. Depending on the type of soil fertility and productivity of extensive agricultural zone, for example, grain production ranging from 3 t / ha, and the potential of the variety used by 30%.

The second - a product of intensive agriculture productivity when productivity is achieved due to biological factors of innovation and improvement of extensive farming. This level is called intensive technology, its application potential varieties sold by 50%. Unfortunately, intensive farming is done without taking into account climatic factors zoning areas. And so often that by achieving yields of 3.5-4 t / ha of grain competitive high-cost technology appears. There are examples of "maximum" intensify when the high cost of 1 ha actually collect 30 kg / ha of grain, or relatively high yield of grain is uncompetitive price. In addition, extensive development of intensive technologies in the mid-80s accompanied by high environmental costs.

Third - climate provided a performance intensive agriculture, which, depending on agricultural landscapes, culture, agriculture, zoning of the region ranges from 40 to 90 kg / ha with the implementation of potential varieties to 70%.

Fourth - it's genetic potential of varieties of cereals, which depending on the ecotype varieties ranging from 60 to 120 kg / ha For high performance necessary to properly determine the production potential performance of new varieties, based on the specific conditions of the economy and agricultural technologies used in it. One of the most real and cheapest way to maintain soil fertility and thus ensure high yields in agricultural ecosystems today is to achieve a balanced balance of organic matter through the use of sufficient organic fertilizer, which is possible by keeping large numbers of animals. From this point of view is especially valuable cattle. According to a sufficient number of animals (1 conditional head on 1 hectare of land) to cycle back to 50% of the nutrients of their total removal, which certainly reduces the need for fertilizer [1]

Thus, in the present conditions of plant growing environmental and economic performance of enterprises should be considered as a set of interconnected farming, land reclamation and organizational measures aimed at efficient use of land, improving soil fertility, cultivation of high and stable yields of crops.

It is important also to generalize the production history of the field and every modern farming systems, as measured by the following elements:

- - The order of land use in rotations and in areas outside the crop rotations;
- - Mechanical cultivation system;
- - A system of fertilization;
- - Reclamation and kulturtehnichni measures;
- - A set of measures to combat pathogens and pests of crops, weeds in crops weediness and soil;
- - A system of preventive measures to combat soil erosion and its consequences;
- - Measures of environmental protection from pollution;
- - A system of high-quality seed;
- - Special agronomic activities (sowing, seeding rate of seeds, mixed crops, etc.).
- - Environmental monitoring of agriculture and features of the insurance of crops in farms of all types of ownership.

Noteworthy assessment of efficacy in time and space of modern intensive farming systems - grain-Rotary, plodozminna, Rotary et al., Which provide high-performance use of suitable land to grow the most valuable high-yielding crops, varieties and hybrids, widespread implementation of effective methods of improving soil fertility with the latest achievements of agricultural science excellence. In intensive farming systems, soil fertility is improved through the use of fertilizers, irrigation, improvement tools, etc. [2].

Importantly comprehensive assessment of current farming systems which are based on deep analysis and thorough consideration of the natural and economic conditions of agricultural production, the basis of their determination to be primarily natural zoning that would reflect the local soil, climatic and landscape conditions, particularly agriculture using resource saving wide-units.

It is known that about 80% of the territory of Ukraine belongs to high risk areas of emergency. Human impacts on the environment 4-5 times higher than in developed countries. Ukraine due to high concentration of industrial production and agriculture, as a result of uncontrolled use of natural resources for decades, became one of the most dangerous countries in the ecological sense. The current ecological situation in Ukraine is characterized by a deep ecological crisis, which is caused by the laws of operation command economy in the past. Decisions nav'yazuvalos industrial construction and the production of hazardous conditions without solving environmental problems. Adopted unjustified decision is not subject to debate and discussion, they were forced to perform. Thus, increasing the productive forces was carried out with little or no consideration of environmental consequences, prevailed departmental, consumerist approach to the location of new industries. Everywhere were committed serious errors of complex use of natural resources, lack of attention paid to conservation management and quality control of the natural environment

with the use of individual circuit monitoring components of farming systems [1].

It is significant that Ukraine has such environmental problems as acid rain, transboundary pollution, ozone depletion, global warming, the accumulation of waste, especially toxic and radiation, reducing biodiversity. This shows the importance of comprehensive monitoring of environmental and economic factors as the economy, and each sowing cereals.

This modern farming system should solve the problems of drought, the protection of the environment from pollution by pesticides, mineral and organic fertilizers, creating optimal conditions for the cultivation of crops, human life and activities, as well as ecologically clean products [4].

It is important to use evidence-based farming systems, which provide world wide application of science and technology - chemicals, breeding, irrigation, integrated mechanization, energy, resource-saving and environmentally friendly technology for obtaining stable, high yields and good quality crops.

Thus, the agricultural sector, more than any other, requires a comprehensive consideration of all the characteristics of natural and economic conditions of each region of our country. Based on this osnovovyznachalnoyi requirements, develop modern agriculture by a single scheme, suitable for the whole country, not possible [1].

Materials Research 2009 - 2014 rr. Indicate that any farming system, without exception, should be characterized by the presence of relationships of all agricultural land, rational structure acreage and the most appropriate set of maintaining and improving soil fertility. These basic factors determine rationality and intensity farming systems to be interconnected as a material breach of necessarily lead to a change in major ways to improve soil fertility of different types of soil and improve biological balance agrocenoses [3].

The values match modern farming systems geographical conditions in this historic period of human civilization has increased significantly as a result of significant achievements of agricultural science in general and its individual areas in particular, and they should be taken into account when developing the fundamentals of each farming system and particularly resource-saving applications tillage, biological fertilizers and plant protection products.

Thus, the theoretical basis of each farming system are the laws agronomics, creative use them in a production environment for high agrotechnical and economic efficiency of each link and the entire farming system as a whole [1].

Conclusions. In the 2009-2014 biennium. Farming systems characterized as adaptive to the soil-climatic zones or their parts and ranged by a set of crops and soil, climatic and economic conditions. These adaptable systems are similar in terms of the structure of sown areas, a set of key measures for implementation of each of the constituent parts of a whole and addressing the main targets - the most productive use of land for

the simultaneous solution of the main tasks of increasing the yield of grown crops and extended increase in soil fertility. Environmental and economic performance monitoring technologies of grain crops in Ukraine significantly contribute to optimization of grain production in Ukraine according to European standards.

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Обоснованы современные экономические и экологические показатели, касательно эффективного выращивания зерновых культур при применении ресурсосберегающих систем земледелия в различных почвенно-климатических зонах Украины.

Экономический мониторинг, эффективность ведения растениеводства, пшеница, ячмень, кукуруза, агроценоз, севооборот, системы удобрений, обработка, защита растений, экологические предикторы прогноза урожая