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ECONOMIC EFFICIENCY OF DIGITALIZATION MEASURES IN AGRICULTURAL ENTERPRISES

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Abstract. *The article substantiates the need for digitalization of production and management processes in agricultural enterprises, based on the analysis of sown areas and timing of the process of growing crops. The economic efficiency of digitization measures in agricultural enterprises (on the example of the crop industry) has been done. The directions of economic effect from introduction of the basic digital technologies of exact agriculture have been outlined. The matrix of the use of digitization tools in the production process of agricultural enterprises has been compiled. Describes digital technologies that can be purchased and installed on the existing equipment of the agricultural enterprise and determines the economic effect of their use per 1 hectare of crops. The initial data for calculations of realization of investment projects on acquisition of separate tools of digitalization have been generated.*

Key words: *economic efficiency, agricultural enterprise, digitization tools, development, technologies.*

The gradual digitalization of production and management processes in agricultural enterprises requires urgent measures for the implementation of investment projects by enterprises for the acquisition of digital tools, which are designed to secure the practical application of modern technological advances in the direct activities of agricultural entities. The question of the payback period of funds invested in digital tools and the sequence of steps to take measures to digitize production and management processes remains extremely relevant.

The economic efficiency of digitization measures in agricultural enterprises (on the example of the crop industry) has been done. The possible terms of use of agricultural machinery and digital devices in wheat growing processes have been outlined and two groups of possible risks that arise when using machinery and digital devices have been identified: 1) risks associated with the external conditions of operation of enterprises (weather risks); 2) risks associated with internal factors (use of agricultural machinery).

The directions of economic effect from introduction of the basic digital technologies of exact agriculture are allocated, namely: avoidance of problems of passes and overlapping in fields, disconnection of sections at entering of fertilizers and plant protection products,

disconnection of sections of a seeder at sowing of crops, introduction of liquid fertilizers during sowing, differentiated entering fertilizers and plant protection products, calculation of vegetation indices (NDVI, NDRI, RVI), mobility and efficiency of shooting, retrospective data, optimization of terms of field work, etc.

The matrix of the use of digitization tools in the production process of agricultural enterprises has been compiled. Describes digital technologies that can be purchased and installed on existing agricultural machinery and determines the economic effect of their use per 1 hector of crops, taking into account the clear timing of digital tools in terms of the described timing of agricultural machinery and digital devices in the cultivation of agricultural products which allowed to calculate the possibilities of using a separate digital device in terms of hectares of cultivated area of agricultural land in each stage of production on which innovation can be applied.

The initial data for calculations of realization of investment projects on acquisition of separate tools of digitalization has been formed and expediency of use of services of the specialized companies in a cut of possibilities of access to separate digital technologies has been described.

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