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MATRIX OF RESEARCHES ON SIGNIFICANCE OF VARIOUS FACTORS FOR MAINTENANCE OF INCREASE OF PRODUCTION OF GRAIN IN AGRICULTURAL ENTERPRISES BY INTENSIFICATION OF ENGINEERING MANAGEMENT

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A full matrix of research on the importance of various factors to ensure increased grain production in agricultural enterprises by intensifying engineering management by domestic and foreign scientists has not been conducted.

However, indirectly (Nagy, B., 2019) it was found that technological (1.52 rank), technical (2.04 rank) and organizational (3.14) factors are the main factors with a total concordance coefficient of 0.841.

The authors confirmed the existence of a number of agronomic, technological, technical and social problems: ensuring maximum agro-landscape adaptability of land use, technologicalization of production and adaptability of the fleet structure adapted to specific conditions of grain harvesting (Yata V. et al., 2018), ensuring minimum grain losses in all harvesting operations.

(Jech J. et al., 2018), the use of crop rotations with alternating harvesting of cereals of different varieties (Constable G. et al., 2016), adapted to mechanized harvesting, optimization of the system "field - combine - transport - grain flow" in a single production process with observance of the set rate of harvesting works within 2-4 thousand tons of grain a day (Masek J., etc., 2017), strict observance of technological discipline at all operations on production of grain crops (Carlson M., etc., 2019), harmony of technical support of agricultural tests with observance of the set rate of their carrying out, introduction of system quality control works and their performance in the set volumes.

In world science (Dubbini M. et al., 2017) approaches to the standard size of rows of combine harvesters are outlined according to the criterion of the set of their models, the most adaptable to the peculiarities of grain production in any harvesting region. In addition, important indicators of quality are the loss of grain behind the combine and the crushing of the harvested grain, it is not recommended to take into account the loss of grain directly behind the harvester.

The authors (Viba J. et al., 2016) found that for combine harvesting, the dynamics of self-shedding of grain at the root is an important characteristic of the variety, which determines the organization of the entire harvesting company for 2 days, 7 days or 12 days.

Some of them (Prokop K., 2017) indicate only the percentage of self-scattering of grain and do not provide a mathematical apparatus to optimize the harvesting process.

Existing methods for assessing the self-scattering of grain provide for manual collection of grain from the accounting area from the soil surface. However, the authors (Barnah BC et al., 2019) found that such surfaces are uneven and in real natural conditions part of the scattered grain falls into cracks and is covered by wind earth, plant particles, etc. Therefore, the accuracy of grain collection is very low and not takes into account up to 21% of grain (Barnah BC et al., 2019).

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