PRACTICAL RECOMMENDATIONS BY REDUCING ELECTRICITY CONSUMPTION

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Practical recommendations ways to reduce power consumption in operation at zernopunktah.

Specific electricity consumption, efficient use of electricity, zernopunkt, energy efficiency, energy saving.

Rational use of electricity for zernopunktah equipped with energy intensive equipment is especially true now that the adopted National Energy Program of Ukraine for Energy Conservation. It is known that 1 unit of electricity saved could save at least 5 units of primary energy.

The analysis showed that the cost of electricity in manufacturing processes at grain handling unit 2-3 times vary for the same grain cleaning units. Currently there is no method that allows to analyze the impact of mode of equipment for conversion efficiency and the use of electricity in separate production lines and a whole grain cleaning aggregates. This revealed that the most informative indicator to determine the power saving modes of operation are specific electric power consumption for processing grain. It was established that the study of the effect of operating modes of electrical power conversion processes and use of electricity most appropriate to the base units of domestic production of grain cleaning head 20, ARR-5, 40-head, head-25 [1, 2, 3].

The purpose of research - a task in the development of practical recommendations for ways to reduce power consumption in operation at zernopunktah.

Materials and methods research. As a result of experimental studies of mental-dependence of specific power consumption of energy and technological factors production lines installed linear specific electricity consumption during cleaning of grain on production lines. This found that the value of operating modes, providing

clean grain with the lowest specific power consumption, subject to change depending on the parameters of grain.

Results. As a result of experimental studies obtained depending on the form of regression equations specific energy consumption as a function of performance production lines, grain moisture and its debris which mode to optimize the processing of grain.

Experimental studies have established that the discrepancy between theoretical and experimental data does not exceed 10% due to strong correlation (r = 0,9 - 0,98) modes of operation of electrical power and physical and mechanical characteristics of grains of specific consumption of electric energy.

Comparison of theoretical and experimental data has identified sufficient for practical purposes the degree of connection between the study of specific electricity consumption in the process of cleaning grain production lines grain characteristics, equipment condition and operating modes. The deviation between theoretical and experimental values is about 10%.

In terms of operation, depending on the amount of flow of grain to zernopunkt and its use (food or seed) to make informed decisions on the choice of technological scheme of corn for grain-cleaning head unit 20 suggested depending on specific consumption of electric energy function performance production lines at optimal values of humidity and pollution.

Recommendations to improve technology

In order to get the minimum specific energy consumption during cleaning of grain on production lines necessary to design single-chain line cleaning of grain. The presence of parallel chains in production lines increases specific power consumption because the parameters of working machines production line is not optimal. The technology is not allowed manual operations or discontinuity technological cycle.

Guidelines for operating modes

In order to get the minimum specific consumption of electric energy in cleaning grain on production lines, it is necessary to determine the most appropriate sequence of manufacturing operations cleaning of grain, calculate the most probable

schedule grain receipts strictly monitor the completeness loading process equipment and reduction of the duration of his idling.

Recommendations for the organization

Rational maintenance of electrical - an essential condition conserve electricity. Care should be taken to the entrance on the production line was always a surplus of grain, set the maximum gate opening to feed grain cleaning. It is important to organize and plan the process of cleaning the grain to the discrepancy performance machines that operate with different types of grains was minimal.

Recommendations for promotion

It is necessary to give effect stimulating factors on compliance costs of electricity factor controlling the flow of electrical energy that will reduce costs and energy savings. For energy savings in zernopunkti must pay employees zernopunktu.

Recommendations for construction

In the production line should be set equal performance machines while working machines will be working in nominal mode, because there will be limiting machines. Thus, the specific power consumption is minimal. Inside the production line need to reduce power consumption by changing the design parameters of working machines. You must create and improve the design of machines and mechanisms of production lines, as they are required to work a flexible and reliable in all conditions.

Recommendations for automation

Volume automation should provide the maximum possible economic benefit. Lack of automation of cleaning grain explains imperfection sorting machines.

Conclusions

1 In the study found that the optimization of electromechanical systems for processing grain zernopunktah reducing the unit cost of electricity is about 10%.

2 As a result of experimental studies dependences in the form of regression equations specific energy consumption as a function of performance production lines, grain moisture and its debris which mode to optimize the processing of grain. Thus, the two production lines of Trier minimum specific power consumption of 1.61 kW • h. / T obtained in performance of 14.5 t / h., Humidity 11.4% and 2.9% of debris;

- A production line of Trier - 2.98 kW • h. / T in productivity of 6.5 t / h., 11.7% moisture, debris 2.3%;

- A production line without Trier - 2.06 kW • h. / T at productivity 9.8 t / h., 12.4% moisture, debris 2.6%;

- Two lines without Trier - 1.43 kW • h. / T at productivity 15.7 t / h., 12.1% moisture, debris 3.1%.