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CHOICE OF RATIONAL TECHNOLOGICAL PARAMETERS OF THE PROCESS OF DELIVERY OF GRAIN CARGOES BY EXIT ROUTES

Ukraine is one of the leading grain exporting countries in the world market. Agrarians apply a set of measures to increase grain yields, resulting in a record volume of grain production and legumes. However, the significant growth rate of grain production, and consequently the increase in their volume of transport with subsequent transshipment in seaports, does not correspond to the level of logistics efficiency.

Grain growing enterprises and storage complexes (for example, elevators, seaports) can be attributed to complex production systems [1]. They are characterized by geographical fragmentation and are interconnected by transport.

The overwhelming majority of grain cargo delivered to the foreign market is transported through ports [2] and delivered to port terminals by rail. One of the most important areas for improving the organization of carriage flows is sender routing [3]. The existing routing justification system does not fully take into account the features of accumulative systems at loading points, including the equipment of loading fronts, storage space, the duration of cargo operations and other factors causing additional costs at loading stations [4]. Thus, the study should be aimed at increasing the efficiency of the organization of car flows when delivering grain by routes to ports by choosing rational parameters of the supply chain.

Technological parameters that are optimized include:

- the optimal number of cars in the route dispatch;
- loading point performance;
- interval of grain supplies to the port.

To make rational choices of the grain supply chain to the port, an integral indicator has been formed that expresses the total unit costs of accumulating, storing, transporting and waiting for the grain to be unloaded at the port when the delivery conditions are met "on time".

Taking into account these features, the target function of the process of delivery of grain cargo by sending routes has been formed. The main cost components of the objective function:

-expenses associated with the use of the car during cargo operations at the loading point;

-costs for the supply and cleaning of cars at the point of departure;

-the cost of moving the goods to their destination;

-expenses for cargo storage until it arrives at the port's storage facilities.

Thus, a logistic chain of grain delivery from the elevator to the port was formed, in which four technological elements are integrated: storage and preparation of grain at the elevator for shipment; operations to form trains with grain; grain transportation; storage of insurance and operational grain reserves in the seaport.

To select rational parameters of the grain supply chain to the port, an integral indicator is proposed that expresses the total unit costs for the accumulation, storage, transportation and waiting for the unloading of grain in the port.

Special attention needs to be given to the efficient organization of wagon traffic when delivering grain cargoes from elevators to ports based on logistical principles. First of all, it concerns the organization of technological routes.

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