Method of surface laser treatment, laser hardening, hardening, welding, wear-resistant carbide powders, steel 65G, working bodies tillage tools.

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OPTIONS TECHNICAL EQUIPMENT cooperatives KORMOZABEZPECHENNYA dairy farm family type

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The method of study options cooperatives with technical equipment kormozabezpechennya dairy farms of family type. The expediency of creation of cooperatives for agricultural productionkormozabezpechennya family dairy farms. The dependences need areas for growing fodder crops from livestock dairy herd. Grounded options kormozabezpechennya technical equipment for dairy farms of family type.

Dairy cattle, kormozabezpechennya system parameters, technical equipment.

Formulation of the problem. The efficiency of milk production on farms of family type largely depends on the system kormozabezpechennya [1]. At the same time, remains unresolved scientific and applied problems concerning justification parameters of technical equipment of cooperatives kormozabezpechennya dairy farms of family type for specific areas (administrative districts, town councils, etc.).

Analysis of recent research. The issue of justification options kormozabezpechennya individual dairy farms devoted to a series of scientific papers both domestic [2] and foreign scholars. [3]

The analysis of these studies shows that they do not take into account the geographical location of fields of forage crops. With the growing population of dairy cattle growing need for feed and field areas for growing fodder crops, increasing the distance from them to the dairies. At the same time the cost of transport processes (delivery of seeds and fertilizer, transport crop of forage crops, etc.) to increase the number of dairy herds also increase.

The purpose of research - To reveal the method of study options cooperatives with technical equipment kormozabezpechennya dairy farms of family type and on this basis to determine the need for technical equipment.

Results. Cooperatives of kormozabezpechennya is serving for dairy farms of family type. Objectively justify the parameters of technical equipment of cooperatives is impossible without simulation modeling processes of mechanized cultivation of certain fodder and logistics processes of transportation and warehousing. However, the modeling of these processes should be carried out systematically. [4]

Simulation processes kormozabezpechennya dairy farms is done on the basis of implementing the following steps: 1) for a given system and method of maintaining dairy herds his cattle feeding ration and justify the need for certain types of feed and determine areas of fields for cultivation of fodder crops; 2) examine the working conditions of the region (area fields, away from fields to dairies, the type of soil and its fertility, etc.); 3) form the fodder crop rotation and fix forage crops at reasonable margins; 4) on the basis of simulation modeling processes of growing forage crops and logistic processes kormozabezpechennya determine their functional and cost parameters for a given technical and industrial conditions; 5) Markov purposefully alter the composition of the technical equipment and geographical location fodder crops in separate fields in accordance with reasonable rotation, repeat the process simulation modeling process of growing forage crops and logistic processes for each of their choices determine functional and cost parameters; 6) based on a comparison of individual variants of technical equipment of cooperatives kormozabezpechennya family dairy farms for specific expenditure of funds defining its basic parameters by which these costs are minimal.

Justification of the need for certain types of feed for the dairy herd and determine areas of fields that should be given for growing fodder crops, on the basis of the known method [5]. Given that the processes of growing forage crops and logistics processes are complicated kormozabezpechennya (typical components of these processes changing nature) to determine their functional and cost parameters using simulation. Thus there is a hypothesis that for a given area of cultivation of fodder crops are optimal parameters of technical equipment (Zort) in which the feed is produced from specific minimum total costs money (V):

$$\Phi\left(Z_{opt}\right) = B \rightarrow min. \qquad (1)$$

For a given area of cultivation of fodder crops and technical equipment specific parameters the total cost of funds is determined by the expression:

$$B = B_{вир} + B_{лог}, \quad (2)$$

where: $B_{вир}$ - Specific cost of funds for the implementation processes of growing and harvesting forage crops, rub. / Head .; $B_{лог}$ - Specific cost of funds for the implementation of logistics processes kormozabezpechennya UAH. / Ch.

Unit costs money $\left(B_{вир}\right)$ to implement processes of growing and harvesting forage crops are defined by the expression:

$$B_{вир} = \frac{B_{втв} + B_{вик}}{n_к}, \quad (3)$$

where: $B_{втв}$ - The loss of money due to delayed implementation processes of growing and harvesting forage crops, USD; $B_{вик}$ - The cost of funds for the implementation processes of growing and harvesting forage crops, rub .; $n_к$ - Livestock dairy herd, ch.

Unit costs money $\left(B_{лог}\right)$ pursuant kormozabezpechennya logistics processes defined by the expression:

$$B_{лог} = \frac{B_{втл} + B_{тр} + B_{ск}}{n_к}, \quad (4)$$

where: $B_{втл}$ - The loss of funds due to losses crop of forage crops due to delayed execution of logistics processes kormozabezpechennya UAH; $B_{тр}, B_{ск}$ - Under spending on transportation execution processes crop of forage crops and its handling UAH.

Based on simulation modeling processes of growing forage crops define the following functional parameters: 1) the average amount of time and executed's work for the k-th forage crops ($\bar{M}[S_k^н]$), Ha · days; 2) the average amount actually performed work and th th to k-r-fodder of view of technical equipment $\bar{M}[\Omega_r^ф]$, Ha.

Based on the above described method using reasonable parameters of technical equipment for dairy farms of family type. It is that cows carried out by stall-pasture system with attachable manner that is characteristic of the conditions of Western Ukraine. Determining the need for feed and for their growing areas performed by a computer program developed at the Department of project management and safety at Lviv National Agrarian University. It is the annual yield of cows is 6,000 kg / milk provided by the ration feeding cows without kontskormiv.

Given that family dairy farms are small (up to 200 head of livestock), their technical equipment should be based on energy means low power. For basic power tool adopted domestic tractor HTZ-3510, which relates to traction class 0.6 and has a capacity of 25.7 kW. Picking machine and tractor units to perform certain technological and transport

operations carried out using commercially available agricultural machines. The cost of technical equipment and supplies for the production of feed and accepted that was in Ukraine as of 1 May 2015.

Simulation of the process of growing forage crops and kormozabezpechennya logistics processes performed by a computer program developed at the National Scientific Centre "Institute of mechanization and electrification of agriculture." Terms of individual operations taken from the technical regulations for growing fodder crops, and the performance of individual machine-tractor units and fuel consumption of the standard rules. Based on simulation modeling processes of growing forage crops and logistic processes kormozabezpechennya determined their functional performance. This made it possible to justify the need for depending on technical equipment for the production of livestock feed dairy herds (Fig. 1).

The dependence (Fig. 1, a) indicate that the need for energy resources for the production of feed varies discretely and with increasing livestock dairy herd increases. In particular, kormozabezpechennya cooperatives that serve family dairy farms with a total of 200 livestock heads need tractors HTZ-3510 varies from 1 to 5 units. In addition, the dependence (Fig. 1b) needs (NB) in the lyrics for the production of the total feed livestock (Nt) dairy herd family farms that serve the cooperative shows that the total number of cows on the family dairy farm of 3 200 heads need performers varies from 1 to 6 people.

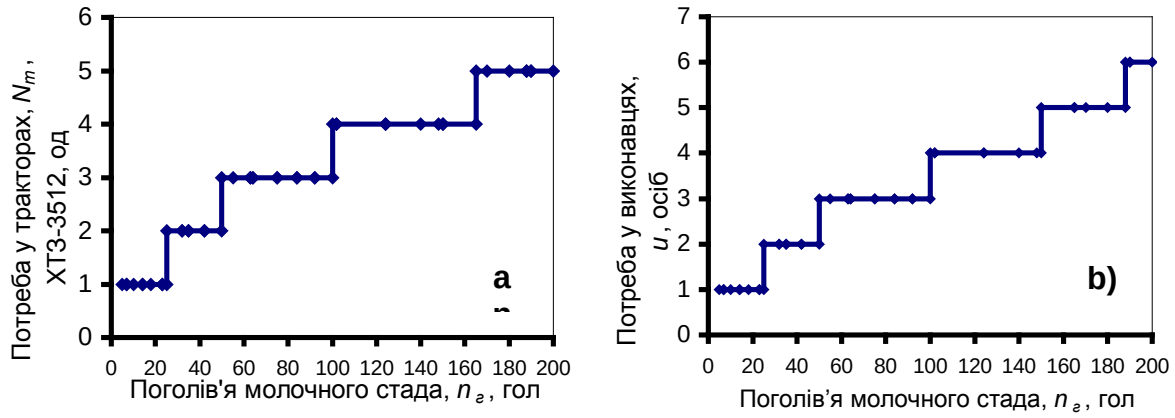

Fig. 1. Dependence need cooperative tractors HTZ-3510 (a) and performers (b) for the production of livestock feed from the total dairy herd of family farms.

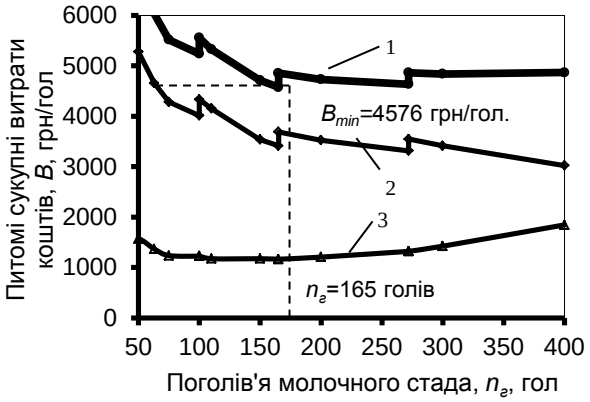

Fig. 2. Dependence of total spending (B) for the production of livestock feed (Nt) dairy herd.

Based on the functional indicators of technical equipment for the production of feed determined cost parameters. It is possible to set the unit cost of funds depends on the implementation processes of growing forage crops and livestock transport processes of dairy herds (Fig. 2). Minimum total cost of specific funds (= Vmin 4576hrn / ch.) In feed production observed in cooperatives that serve dairy family farms with a total livestock of dairy herd of 165 head. Thus, in the technical equipment cooperative kormozabezpechennya of these farms are: tractors HTZ-3510 - 4; disc harrows 1BQX 1.9 - 1 unit; Stackers loaders SNU-550 - 1 unit; Tractor-trailers 1PTS 2.5 - 2; fertilizer spreaders IDP-0.5 - 1 unit; spreaders Manure SIP ORION 35 R - 1 unit; PMT-plows 01.00.000 - 1 unit; teeth harrows BZSS-1.0 - 3 units; units to transport water DLC 3 - 1 unit; sprayers OHN-400 - 1 unit; KUN-1.6 cultivators - 1 unit; Drill 2BYF-5 - 1 unit; cultivators okuchnyky KOH-1.4 - 1 unit; SCG-2 Rollers - 1 unit; mowing CN-2.1 - 1 unit; Mr rake spinning top 3.4 - 1 unit. Based on the above it can be argued that the method makes it possible to justify settingstechnical equipment of cooperatives kormozabezpechennya dairy farms of family type for a given production conditions. The results indicate that the conditions for small Polissia Lviv efficient production of fodder in cooperatives kormozabezpechennya possible if this service cooperative dairy herd livestock farms of family type within 165-272 heads.

Conclusions

1. The proposed method study options cooperatives with technical equipment kormozabezpechennya dairy farms of family type provides for implementation of the six stages and is based on simulation of processes of feed production and logistics processes of their preparation.

2. Based on simulation modeling processes of growing forage crops and logistic processes blanks reasonably functional indicators of technical equipment and the need for it. It is established that the need for

tractors HTZ-3510 for cooperatives that serve family dairy farms with a total of 200 livestock heads varies from 1 to 5 units, and the performers of 1 to 6 people.

3. proved that the minimum unit total spending (Vmin = 4576hrn / ch.) In feed production observed in cooperatives that serve dairy family farms with a total livestock of dairy herd of 165 head.

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Justification for proposals method parameters of technical equipping kooperatyvov with kormoobespechenyya of milk farms of family type. Obosnovana tselesoobraznost creation selskohozyaystvennыh proyzvodstvennыh kooperatyvov for kormoobespechenyya semeynыh of milk farms. Ustanovlenы dependence Square in the needs for crops Growing kormovыh poholovya from the dairy herd. Options Obosnovanno of technical equipping for kormoobespechenyya of milk farms of family type.

Breast skotovodstvo system kormoobespechenyya, Options, Equipping Tehnicheskoe.

The method of parameters grounding for technical equipment of feed productions cooperative for milk farms of family type are given. The expediency of agricultural production cooperatives creation for feed productions of family dairy farms is grounded. The dependences areas for growing green crops from livestock dairy herd are founded. The parameters of technical equipment for dairy farms feed productions of family type are grounded.

Dairy farming, system of feed supply, parameters, technical equipment.