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MODERN APPROACHES TO THE DEVELOPMENT OF DAIRY PRODUCTION IN BELARUS

Dairy farming has a key role and is a driver in the development of agricultural production in the Republic of Belarus nowadays. The main factors are the following: natural and climate conditions, availability of material and technical resources, the current situation in the internal and external markets.

The Republic has maintained a positive dynamics of milk production over recent years [1]. The growth trend can be noticed in all regions except Gomel region. It is clearly determined by the main production indicators (table 1).

Table 1

Gross indicators of milk production in the Republic of Belarus

Regions	Average milk yield per cow, kg		Milk production, t	
	2020 y.	in % to 2019 y.	2020 y.	in % to 2019 y.
Brest	6453	105,2	1854609	106,5
Grodno	6149	108,0	1349106	107,9
Minsk	5804	108,6	1935925	108,6
Gomel	4329	96,8	955766	96,6
Vitebsk	4030	102,9	740939	103,4
Mogilev	4011	107,0	672927	106,4
The Republik (total)	5314	105,4	7509272	105,6

In 2020, the gross volume of milk production in the Republic increased by 398 thousand tons, or by 105.6%, compared to 2019. The average milk yield per cow in 2020 increased by 271 kilograms compared to 2019. The average milk yield per cow exceeded 6 tons in Brest and Grodno regions.

The question of the economic efficiency of this industry remains actual, despite the significant achievements in increasing the volume of milk production which have been made over recent years [2].

The necessity of using advanced technologies greatly determines the prospects for the creation of large dairy complexes. For example, the data on the grouping of agricultural organizations in the Republic of Belarus by the average number of dairy cows show a trend to enlargement, which indicates the continuing concentration and specialization of production [3]. The creation of highly mechanized dairy complexes and farms and the modern technologies of milk production introduced in the Republic of Belarus with a high level of technological discipline allow to maximize the productivity potential of dairy cows [3].

Modern innovative digital technologies at large dairy complexes allow to reduce labor costs per centner of milk from 9.5 to 1.1 man-hours, feed consumption – from 1.3 to 0.8 feed units, total energy consumption – from 85 kg to 50 kg of equivalent fuel and will increase the workload from 30 to 140 cows per operator and the production of milk up to 600 tons per worker on the farm.

Further increasing in the efficiency of dairy cattle breeding presupposes the technological renewal of all its components [4]. The main factors that hinder innovation processes and the transition of dairy cattle breeding to an industrial form are the following: the acquisition of farms and large complexes with cattle which is unsuitable in physiological and productive parameters for keeping in new conditions; lack of qualified employees; non-compliance of the feed base with technological standards; non-observance of the technology of feed preparation and feeding; unstable financial position of agricultural organizations, their high level of loan debts and lack of working capital.

The most important task of the renewal of dairy cattle breeding is intensive selection work in order to organize the reproduction and renewal of the herd with productive animals.

An important problem in organizing milk production on an intensive basis is staffing. According to the data represented by American scientists, the difference in milk yield between farms reaches 50% depending on management with other equal conditions (breed, technology, feed, etc.) [2].

The primary direction of innovative renewal of dairy cattle breeding is the scientifically grounded provision of animal feed. Forage forms 80% of livestock productivity and is the main element of intensification of livestock production and the main condition for cost-effective milk production. Therefore, its quality issues are particularly important. The

scientifically grounded structure of diet for highly productive cows provides at least 60–65% of voluminous feed and 35–40% of concentrates. The ratio of corn silage to canned forage from wilted grasses should be approximately 1 to 1 in the total amount of forage.

Based on the above mentioned thoughts, we can draw the following conclusions. The main direction of the development of dairy cattle breeding in the Republic of Belarus remains large-scale specialized industrial complexes. Implementation of innovative resource-saving technologies and the latest scientific achievements, optimization of the feed base and resource provision of the industry, strengthening the breeding component, as well as raising the qualifications of personnel at all levels, will allow performing the existing reserves for increasing the economic efficiency of milk production.

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