

## ***I. Pishchan. Adaptive reaction of Brown Swiss cows for the new regime of milking***

The aim of our research is to establish adaptive response of lactating cows of Swiss breed by regime change of milking with the installation of "Parallel".

During milking of the Brown Swiss cows with using a milking machine, the hanger of the apparatus weights 2,1 kg with cylindrical rubber and with the size of vacuum – 42,5 kPa (basic mode), one-time milk yield is at the level of 12,8 kg, corresponding to the average level of cattle at the industrial complex. After replacing the parts of the milking machine, the weight of which increased slightly (80 g, 2,180 kg), with a trihedral rubber and calibrated hole in its head (the new regime), the value of one-time milk yield remains very high, though inferior to the basic level by 2,4%.

However, if fullness of milking the cows for the new regime is quite satisfactory, duration of milking points to the adaptive reaction to the new regime of milking. Thus, if milking duration was less than 4,7 minutes under the basic mode, then in the new mode it increased by 17,5 % ( $P < 0,001$ ). That is, although the admission of air in space under the teats in the open phase of the milking apparatus provides quick evacuation of milk in the collector of apparatus but it reduces the amount of liquefaction which slows down the process of excretion milk from teats of an udder.

Inadequate activity of milk output from an udder of the cows under the new regime of milking causes low intensity of milk output. Thus, if under the basic mode its average is 2,8 kg/min, then under the new regime it is less by 27,3% ( $P < 0,001$ ) and only 2,2 kg/min. The maximum intensity of milk output does not exceed 3 kg/min, which is lower by 43,3 % ( $P < 0,001$ ) compared with basic mode of milking.

Unsatisfactory indicators of functional activity of the cow's udder indicate low values of excretion milk under the new regime of milking. Thus, under the base regime during the first minute of working the milking apparatus, cows' udders are emptied from milk by 21,7%, whereas the figure is less by 20,6% and not more than 18% under the new regime. Inadequate emptying of cow's udder from milk is observed within two minutes of milking under the new regime. So, for this period of time less than half an udder (43%) is emptied from milk, when this figure in the cows under the basic mode of milking is higher by 31,4 % ( $P < 0,001$ ) and is an average of 62,7%.

During fifteen days under the new regime of milking, the cows are adapted for this regime, therefore the indicators of functional activity of an udder are improved. Thus, the average intensity of milk output reaches the level of 2,5 kg/min which exceeds the value of the third day of the new regime by 12 % ( $P < 0,001$ ). The maximum intensity of milk excretion increases to 3,4 kg/min which is higher by 11,8 % ( $P < 0,001$ ) than the value of the third day of the new regime of milking. At the same time, these indicators are inferior by 12 % ( $P < 0,01$ ) and 26,5 % ( $P < 0,001$ ) respectively compared with the base mode of milking.

Inadequate intensity of milk excretion of the Brown Swiss cows is the result of peculiarities of open phase of the milking apparatus by reducing the magnitude of the vacuum.

Increasing the vacuum of system by 2,5kPa improves the milk excretion. Average intensity of the milk excretion was at the level of 2,7 kg/min, which was 18,5 % ( $P < 0,001$ ) more than the indicator in system at vacuum of 42,5 kPa and almost exactly meets the basic mode of milking.

Adaptation of the cows was in the fact that the reaction of the functional activity of an udder corresponded to the gentle vacuum mode in the space under teats.

***Keywords:* lactation, yield, functional activity of udder, adaptation, milking regime, trihedral rubber teat**