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INTENSITY OF MILK FLOW OF HOLSTEIN COWS

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Under the conditions of the industrial technology of milk production, interest in the problem of the intensity of milk withdrawal from the cows' udder or to the indicators of milk ejection increased sharply. Since the milk ejection rate determines the duration of cow milking, and therefore the time of stay in the milking hall, this indicator is not only biological and physiological, but also technological. Since the genetic potential of the most dairy and technological breeds, which include the Holstein breed, is now created, it should carry the genetically hereditary bents of high-intensity milk ejection in the process of milking.

The study of the interaction between a cow and milking machine in the process of milking has a scientific and practical interest. The realization of milk ejection reflex is limited by the time of the action of the oxytocinhormone, so the milk ejection at cows ends regardless of whether the milk has been milked dry from an udder or not. The caused repeated reflex of the milk ejection has low activity due to the lowered pressure. The transformation of milking cups on the udder in order to prolong milk ejection does not meet the ergonomic requirements, causing injury of mammillae and mastitis disease of cows.

Basing on the above, the purpose of our research was to study the intensity of milk ejection at cows of Holstein breed depending on age in lactation under conditions of free-stall housing in the "Agrosvit" Plant of Myronivsky region of Kyiv oblast. The farm uses year-round one type feeding of cows with balanced all-in-one feed from the feed tables in the premises, milking – at the milking installation "Parallel". Experimental cows by age in lactation were divided into 3 groups: the first group contained cows of the first lactation, the second group included the cows of the second lactation and the third group contained cows of the third and more lactations.

According to the results of the research (Table 1), it is evident that the duration of milking of the cows of the I and the III lactation is almost the same – in terms of daily milk yields of 29.4 and 29.2 kg, including single milk yields of 10.2 and 10, 0 kg, the duration of milking

Table 1
Indicators of flow milk of Holstein cows depending on age in lactations

Indicator	Lactation		
	I	II	III and more
Quantity of cows, heads	20	20	20
Single milk yield, kg	10,2±0,58	11,0±0,56	10,0±0,52
Daily milk yield, kg	29,4±1,91	32,1±1,71	29,2±1,11
Duration of milking, minutes	5,88±0,31	6,01±0,36	5,84±0,36
Intensity of milk flow, kg/min average	1,73±0,12	1,83±0,1 3	1,73±0,1 9
maximum	3,65±0,17	3,90±0,15	3,58±0,25
Amount of manual after-milking, ml	40	41	43
Fullness of milking, %	99,6	99,7	99,5

was 5.88 and 5.84 minutes, which was adequate to the milk yields. Duration of milking of cows with two calvings for a daily milk yield of 32.1 kg, including a single one of 11.0 kg, was 6.01 minutes.

Along with the overall duration of milking, the most objective indicator of comparative estimation of milk ejection is the intensity of dry milking, which shows how many kilograms of milk excretes a cow per one minute of milking.

In our experiments, according to the intensity of the milk ejection of cows of the I and II, lactation was practically at the same level – 1.78 and 1.73 kg/min. relatively the cows of the II lactation, this figure was slightly higher and was at 1.83 kg/min. A similar pattern is observed in terms of the maximum intensity of dry milking.

Regarding the amount of milk received by manual after-milking, it was practically identical at cows of the experimental groups – 40 and 41–43 ml, as a result of which the fullness of the dry milking constituted 99.5–99.8%.

Consequently, the results of the research provide grounds for asserting the complete adaptation of the Holstein breed cows to the conditions of the free-stall housing and milking in the milking room

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