

## **Production test milking APARATIVZ different modes of control element**

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*Present production test modes of management units milking machines with different operating modes. The advantages for biotechnological parameters Milking machine-pairs combined action compared to existing devices simultaneously (ADU-1) and pairs (INTERpuls-90) action.*

***Milking machine modes, simultaneous treatment regimen in pairs, in pairs, combined mode biotech indices of milk, molokovyvedennya cow.***

**Formulation of the problem.** Modern milking installations and milking machines that are equipped to be used in international practice provides two modes of operation: simultaneous output of milk and milk output pairs of teats of the udder.

Biotechnological properties of milking machines and equipment for animal evaluates the quality of operation of machinery and equipment for the purpose. Regarding the last milking machines are estimated completeness milk output, duration of milking, simplicity of design and reliability.

**Analysis of recent research.** The department of animal husbandry mechanization Mechanical Engineering Department proposed improved adaptive milking machine, which provides combined in pairs-mode milking cups [1-4]. Used other modern milking machines with different operating modes glasses [5-10].

**The purpose of research.** To choose ways of developing and improving the design of milking machines must assess milking machines with different modes of action in terms of milking cups milk output dynamics, duration and amount of milk in the milking machine and dodoyuvanni, completeness vydoyuvannya, intensity and duration of the idle milking milking. These indicators indirectly characterize the catalytic ability of the regime of the milking machine.

**Results.** Modern milking machines provide two modes of operation: simultaneous withdrawal of the milk from all teats

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udder when alternating cycles simultaneously in all the milking cups and output pairs, where the change in the milking cups cycles occurs in pairs.

The first mode is characterized by high intensity output of milk from the udder and maximize revenues, pulsating in his reservoir chamber at sucking cycles. This pattern of milk flow in the collector chamber accompanied by sharp fluctuations in vacuum pressure piddiykovyh spaces milking cups, overflow collector chamber molokozbirnoyi milk, which is one of the causes of disease teats mastitis.

Pairs of glasses mode provides a relatively steady flow of milk collector chamber throughout the milking cycle. In addition, the regime said nearly twice receptor stimulation increases the number of milkings, which significantly improves reflex stimulation of milk. He, in fact, can also contribute to leveling time milking udder fractions with different amounts of milk by changing the length or number of cycles sucking stimulus irritation in some pairs of glasses.

The major drawback of existing devices pairwise mode is that the intensity of the flow of milk is twice lower compared to the option of simultaneous treatment of glasses.

Given the advantages and disadvantages of these regimes proved mode device pairs of glasses, combined type, in which during milking in different pairs of glasses milking shifting individual phases and cycles sucking compression by a certain amount, which is determined by the difference between the pulsation frequency pairs.

Physiological assessment research unit conducted by determining the dynamics molokovyvedennya with corresponding serial milking machines simultaneously (ADU-1) and pairs (INTERpuls-90) action.

Research conducted by the group-by periods Ukrainian cow black and white dairy cattle milk yields of 5560-6000 kg per lactation, the second and third months after the first and second calving. Preferred cows'yazne.

Milking cows three times a day to install ADM-8A. Milking cows was carried out in accordance with current regulations milking machine [11].

Operating parameters milking installations answered passport requirements. Options molokovyvedennya determined using bucket counter apparatus "DACH-1 '.

Research has confirmed the efficiency of the milking machine in pairs, the combined action of a number of statistically significant advantages compared to its above mentioned devices (Table. 1).

***1. Biotechnology performance with simultaneous milking machines (ADU-1), pairs (INTERpuls-90) and pairs-combined (advanced) action cups.***

Indexes	Options for milking machines	Difference%
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	ADU-1	INTERpuls-90	poparno-combined	from ADU-1	from INTERpuls-90
Hopes kg:					
- machine	5.65 ± 0.16	6.28 ± 0.2	6.35 ± 0.15	12.4	1.1
-mashynnoho dodoyuvannya	.122 ± 0.02	0.12 ± 0.03	0,136 ± 0.02	11.5	11.5
- Total one-off	5.77 ± 0.18	6.4 ± 0.21	6.49 ± 0.16	12.5	1.4
Duration, min .:					
-mashynnoho milking	3.75 ± 0.18	3.9 ± 0.2	3.8 ± 0.17	13	2.6
-mashynnoho dodoyuvannya	0.63 ± 0.06	0.82 ± 0.1	0.57 ± 0.07	9.5	29.4
- together	4.38 ± 0.23	4.72 ± 0.2	4.37 ± 0.18	0.2	7.4
A maintenance milking min	1.4 ± 0.1	1.52 ± 0.08	1.43 ± 0.1	2.1	5.9
The intensity of milking kg / min					
- Average total	1.32 ± 0.09	1.36 ± 0.1	1.49 ± 0.1	12.9	9.6
- The average machine	1.51 ± 0.1	1.61 ± 0.08	1.67 ± 0.09	10.6	3.7

This found that in case of milking cows research unit value of a single machine and milk yield increased by 0.7 and 0.72 kg (12.5%) compared with the unit ADU-1. The duration of a single milking machine and both devices are almost identical, their difference is less than 1.3%. Is also not statistically significant difference idle durations of individual milking udder quarters specified vehicles (2.1%).

In terms of average intensity milking machine prototype machine has exceeded 10.6% unit ADU-1 (1.67 vs. 1.51 kg / min), and the average intensity of a single milking 12.9% (1.49 to 1, 32 kg / min).

Compared with the device INTERpuls-action 90 pairs of glasses size single machine and milk yield virtually the same (INTERpuls-90 -6.4 kg And Research 6.49 kg). The duration of a single milking experimental apparatus is less by 7.4%, and the idle milking - by 5.9% than the device INTERpuls-90. In the improved version of the 29.4% decrease duration dodoyuvannya machine.

Reducing the duration of the research milking machine in turn raised a secondary machine milking intensity by 9.6 and 3.7%.

Comparison of the dynamics molokovyvedennya and their deviation is due and equal nature of the small difference between the operating modes of the unit by the number of teats receptor stimuli

arising from changes in the pulse rate between pairs of milking cups. Curves milk output dynamics (Fig. 1) point to the benefits of the milking machine in pairs, combined action for milking speed and uniformity compared to devices, respectively, ADU-1 INTERpuls-90. For Research unit area on the chart that indicates the number vydoyenoho milk during machine milking more. Graphically confirmed that the research unit has a lower maximum intensity compared with milking ADU-1, but greater than the machine INTERpuls-90. However, the nature of milk new milking machine indicates a longer time ensuring high average speed of milking, which indicates better stability new milk output device, the latter confirmed to the table every minute withdrawal of milk (Table. 2)

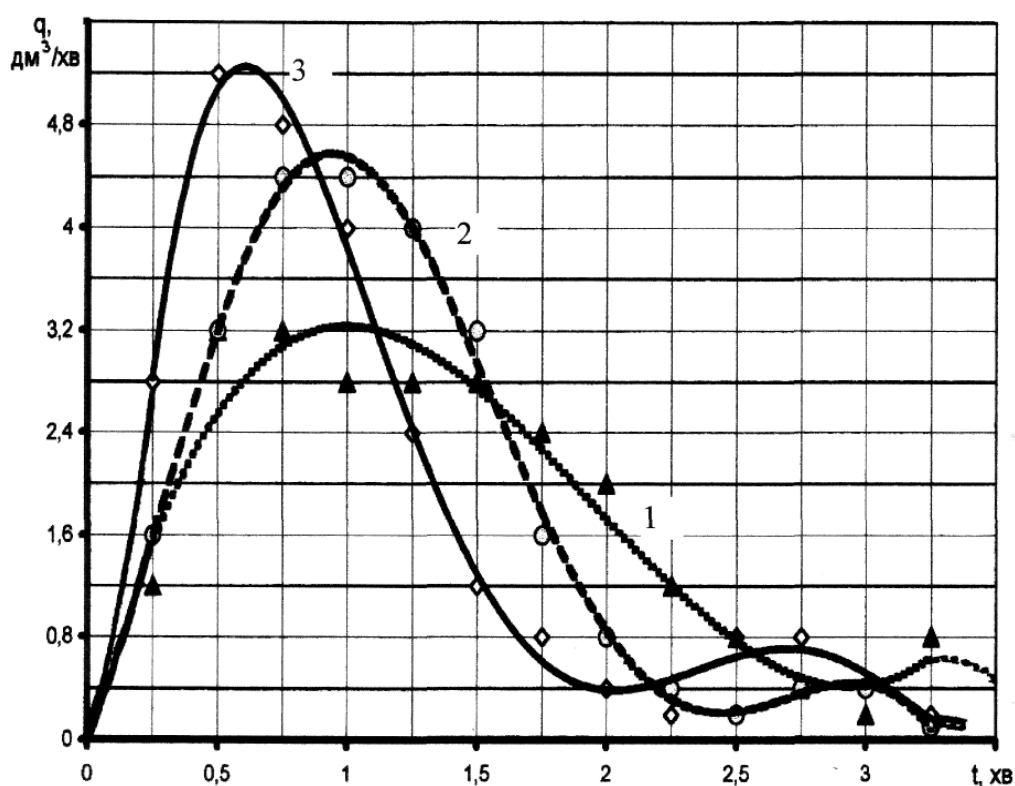


Fig. 1. Dynamics molokovyvedennya milking machines with different modes of milking cups 1 - action pairs (INTERpuls-90) 2 - pairs, combined type; 3 - simultaneous action (ADU-1).

## 2. The intensity of the output of milk Milking devices with different modes of milking cups.

Indexes	Milking machines		
	ADU-1	INTERpuls-90	poparno-combined
Withdrawal of the total milk yield, %			
1st min.	47	46	36
2nd min.	71	46	58
3rd min.	8.5	15	5

These data indicate that the intensity of the output of milk research unit for the first 30 seconds less than 23.4% and for the first minute at 18, 3% compared with the device ADU-1. Compared with milking machines INTERpuls-90 new device first 30 s at 22% intensity output yields of milk, but for the first minute it dominates 26% compared INTERpuls-90. During the second minute of milk output intensity experimental apparatus 5.1% lower compared with the device INTERpuls-90 and more than 80.5% on the ADU-1.

Thus, the milking machine in pairs, combined type retains a high intensity output of milk (typical for milking machines simultaneous action) for a long time the main milking characterizing the action pairs milking cups.

**Conclusion.** The results verify production modes of management units milking machines show that pairs combined-milking machine in comparison with devices simultaneously (ADU-1) and pairs of action (INTERpuls-90) has a number of significant advantages for biotech indices.

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*Present proyzvodstvennaya proverka regimes work upravlyayuscheho Zveniv doylnyh apparatov with razlychnymy modes work. Showing Benefits for byotekhnolohycheskym indicators doylnoho apparatus, pairs kombynyrovannoho action compared with the apparatus of existing simultaneous (ADU-1) and pairs (Ynterpuls-90) action.*

***Doylnyy apparatus, work regimes, odnovremennyy mode porarnyy mode pairs Combined treatment byotekhnolohycheskye indicators, molokootdacha cow.***

*Present production test modes of the control units of milking machines with different operating modes. The advantages for biotechnological parameters milking machine-pairs combined action compared to existing devices simultaneously (ADU-1) and pairs (Interpuls-90) action.*

***Milking machine modes, simultaneous treatment regime in pairs, pairs combined-mode biotech indices of milk, cow.***

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## **MODE TRANSPORTATION RESEARCH MOLOKOPOVITRYANOYI mixture in the dairy milking machine hose**

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*The influence of the mode of transportation molokopovitryanoyi blends the quality of milk in the milk hose Milking machine Milk overhead.*

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***Modes of transportation molokopovitryana mix, milk hose, milking machine, top molokoprovod.***

**Formulation of the problem.** The quality of milk depends on many factors: animal health, fodder, housing conditions, health status and hardware specifications. According to statistics produced milk in Ukraine from the population of different ownership Extra Class 6%, higher grade of about 32%, and first grade of about 60%. It follows that the milking equipment has a large impact on the quality of the product. This is especially true not set operational characteristics of milking machines,