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CHANGES IN THE UDDER PROPERTIES OF CATTLE BREEDS DEPENDING ON THEIR MILK YIELD

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Annotation
The article presents the results of scientific research conducted to determine the changes in the properties of the udder of cattle depending on their milk yield. The article also contains scientific data on the distribution of cows by udder shapes.

Keywords: selection traits, morphological features, functional features, coefficients of variability.

Introduction

In assessing the main selection traits of cows and the degree to which they meet the requirements for machine milking, it is important to study the morphological and functional characteristics of their udder. Table 1 shows the distribution of cows in the experimental groups according to udder shapes.

Table 1 Distribution of cows in experimental groups according to udder shapes

Groups	Number of heads	Udder forms		
		tossimon	Bowl shape	round
1	12	25,0	58,3	16,7
II	12	50	50	—

In our study, in group I, 3 cows (25.0%) had a pelvis, 7 cows had a pelvis (58.3%), and 2 cows had a round pelvis (16.7%).
In group II, 6 head of cows (50.0%) had a toss-shaped and 6 head of cows (50.0%) had a cup-shaped udder, and in this group there were no relatively low-round udder cows. These data indicate that in the group of high-responsive cows, cows with ewes in the most optimal tossed and cup-shaped forms are more common.
Table 2 shows the average udder sizes of cows in the experimental groups.

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Table 2 Cow udder size, cm (p = 12)

Indicators	Groups			
	I		II	
	X±Sx	Cv, %	X±Sx	Cv, %
Circle of the udder	120,4±1,51	4,34	129,9±1,85	4,93
Length of udder	38,3±1,07	9,7	43,3±0,92	7,39
Width of udder	31,9±1,26	13,7	37,6±0,73	6,82
Depth of anterior part of udder	25,7±0,91	12,3	29,9±0,93	10,89
The depth of the back of the udder	27,3±0,91	11,6	32,3±0,93	10,0
The length of the front nipples	8,05±0,46	20,0	8,3±0,74	31,0
The length of the nipples	7,46±0,47	22,0	7,91 ±0,47	20,7
Index of udder	42,3±0,26	2,17	42,7±0,24	1,97
Conditional volume of udder, cm^3	3094,3		3884,0	
Milking rate, kg / min	1,128±0,05	17,0	1,297±0,07	19,6

According to Table 2, the udder size of cows depends on their milk yield, and the udder size of cows of group II with high milk yield is significantly higher than that of their counterparts in group I. For example, the average udder circumference of group II cows was 9.5 cm or 7.9% (R> 0.999), udder length 5.0 cm or 13.0% (R> 0.999), udder width 5.7 cm or 17.9% (R> 0.999), anterior depth of pelvis 4.2 cm or 16.3% (R> 0.99), posterior depth of pelvis 5.0 cm or 18.3% (R> 0.999), the length of the anterior suckers was 0.25 cm 3.1%, the length of the posterior suckers was 0.45 cm or 6.0%, the udder index was 0.4%, the conditional volume of the udder was 789.7 cm3 and the milking rate was 15.0% higher. Analysis of the variability coefficients of the studied traits showed that high values were obtained in terms of udder length, width, depth of its anterior and posterior parts, length of suckers, and milk yield. This indicates the breadth of opportunities to conduct selection work on these selection criteria.

The study of the morphological characteristics of the udder of cows with different udder shapes is also of great practical importance in increasing the efficiency of selection work in herds. With this in mind, we studied the udder performance of cows of different udder shapes.

Table 3 shows the morphological characteristics of the udder of cows with a toss-shaped udder.

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Table 3 The udder dimensions of cows with a tossimon udder shape

Indicators	Groups			
	I		II	
	X±Sx	Cv, %	X±Sx	Cv, %
Number of heads	3		6	
Circle of the udder	126,8±0,89	1,21	135,2±0,57	1,03
Length of udder	43,2±1,28	5,14	45,8±0,74	3,97
Width of udder	36,7±0,29	1,39	39,7±0,36	2,24
Depth of anterior part of udder	31,5±0,21	1,14	32,6±0,52	3,89
The depth of the back of the	33,1 ±0,15	0,78	34,9±0,34	2,4
The length of the front nipples	10,3±0,32	5,34	9,7±0,32	8,14
The length of the nipples	9,7±0,35	6,29	9,2±0,36	9,67
Milking rate, kg / min	1,375±0,048	6,03	1,494±0,036	5,89

According to Table 3, the udder circumference of group II cows is 8.4 cm (R> 0.999), the udder length is 2.6 cm, the udder width is 3.0 cm (R> 0.999). anterior part depth was 1.1 cm, udder depth was 1.8 cm (R> 0.999), and milk yield was 8.6% higher. Table 4 shows the morphofunctional characteristics of the hands of cows with a cup-shaped udder.

Table 4 The udder dimensions of cows with a cup-shaped udder shape, cm

Indicators	Groups			
	I		II	
	X±Sx	Cv, %	X±Sx	Cv, %
Number of heads	7		6	
Circle of the udder	119,5±1,44	3,19	124,6±1,87	3,67
Length of udder	37,5±0,84	5,92	40,8±0,88	5,32
Width of udder	30,9±0,91	7,8	35,5±0,75	5.21
Depth of anterior part of udder	24,9±0,84	8,87	27,3±0,86	7,76
The depth of the back of the udder	26,5±0,85	8,45	29,6±0,93	7,70
The length of the front nipples	7,6±0,29	10,4	7,0±0,35	12,43
The length of the nipples	7,05±0,29	11,2	6,6±0,37	13,9
Milking rate, kg / min	1,079±0,05	12,7	1,101±0,084	18,9

According to Table 4, the udder circumference of group II cows with a cup-shaped shape is 5.1 cm (R> 0.95), udder length 3.3 cm (R> 0.99), udder width 4, 6 cm (R> 0.99), anterior depth of udder cm (R> 0.95), posterior depth of udder 3.1 cm (R> 0.99), milk yield was 2.0% higher.

These data suggest that the udder performance of cows is inextricably linked to their milk yield.

We also studied the effect of cows on milk yield depending on the shape of the udder. Table 5 shows the milk yield of cows with Tossimon-shaped udder.

Table 5 Milk yield of tossimon-shaped cows, kg

Indicators	Groups			
	1		II	
	X±Sx	Cv, %	X±Sx	Cv, %
Number of heads	3		6	
The amount of milk	4232,3±73,6	3,0	4791,1 ±23,5	1,2
Milk fat expenditure	149,0±1,15	1,34	167,6±0,71	1,04
Milk protein expenditure	135,3±1,05	1,34	150,0±1,16	1,9
The amount of milk is 4%	3735,0±30,4	1,41	4203,2± 16,1	0,94
Milk yield coefficient	985,1 ±1,53	2,69	1076,4±1,37	0,31

As shown in Table 5, the milk yield of group II cows with toss-shaped udder is 558.8 kg or 13.2% (R> 0.999), and the milk yield is 18.6 kg or 12.5% (R). > 0.999), milk protein yield was 14.7 kg or 10.9% (R> 0.999), 4% milk yield was 468.2 kg or 12.5% (R> 0.999) and milk yield was 91.3 kg or Was higher at 9.3% (R> 0.999).

In our study, the milk content of cows of group I with a udder-shaped udder was 732.3 kg (20.9%) from the standard requirements of the breed, and in cows of group II 1291.1 kg (36.9%) and fat consumption was 18.2%, respectively. % and 33.0% higher.

Table 6 shows the milk yield of cows with a cup-shaped udder.

Table 6 Milk yield of cows with cup-shaped udder, kg

Indicators	Groups			
	1		II	
	X±Sx	Cv, %	X±Sx	Cv, %
Number of heads	7		6	
The amount of milk	3484,6±204,7	15,5	3629,5 ±242,6	16,4
Milk fat expenditure	128,9±5,6	11,48	138,3 ±6,02	10,7
Milk protein expenditure	117,6±5,47	12,28	123,9±6,35	12,5
The amount of milk is 4%	3249,4± 140,9	11,51	3475,2±181,14	12,8
Milk yield coefficient	827,5±45,57	14,54	825,4±53,90	15,9

According to Table 6, the milk yield of group II cows with cup-shaped udder is 144.9 kg (4.1%), milk fat consumption is 9.4 kg (7.3%), milk protein consumption is higher than that of group I udder of this shape. 6.3 kg (5.3%), 4% milk content was found to be higher than 225.8 kg (6.9%).

It should be noted that the cows of the first group with a slimy udder in this group have 747.7 kg or 21.4% (R> 0.99) of milk and 20.1 kg of milk fat. Or by 15.6%. The milk yield of cows of group II with udder-shaped udder was 1161 kg or 32.0% (R> 0.999) higher than that of calves with udder of this group, and the consumption of milk fat was 29.3 kg or 21.2% (R> 0.999). observed.

Also, in group I, 2 head of cows had a round udder, and their average milk yield was 2816 kg of milk with a fat content of 4.0%.

Thus, studies have shown that the milk yield of cows is inextricably linked to their udder shapes. In this case, the morphofunctional properties of the highest udder were achieved by cows with pelvic udder. Their milk yield was also higher than that of udder cows with cup-shaped and round shapes. Similar results were obtained by Sh.A.Akmalkhanov, M.Mirkhidoyatov, M. Ashirov, M.Boratov (1983), E.Yu.Karchevskiy (1989), A.E.Bolgov, N.P.Karmanova (1989), K.Madaminov (1990). This indicates that the selection of cows on udder forms is one of the important methods in creating high-yielding herds.

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