Veal composition of Holstein calves fed by different ration

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Objectives

In this work have observed the fattening and carcass results of Holstein calves that were differentiated by the type of feeding

Material and Methods

The animals of the 1st group (5 head). were fed with feed mixture and hay after weaning (weaning was realised at 60th days). The animals of the 2nd group were fed with hay, feed mixture and maize silage (5 head) after weaning. The total fattening length was 90 days. From birth to weaning all animals were fed with the dairy feed mixture and starter feed mixture. The experiment was carried out on ordinary dairy farm under operating conditions. We evaluated yield of carcass and chemical composition of MLT muscle.

Results

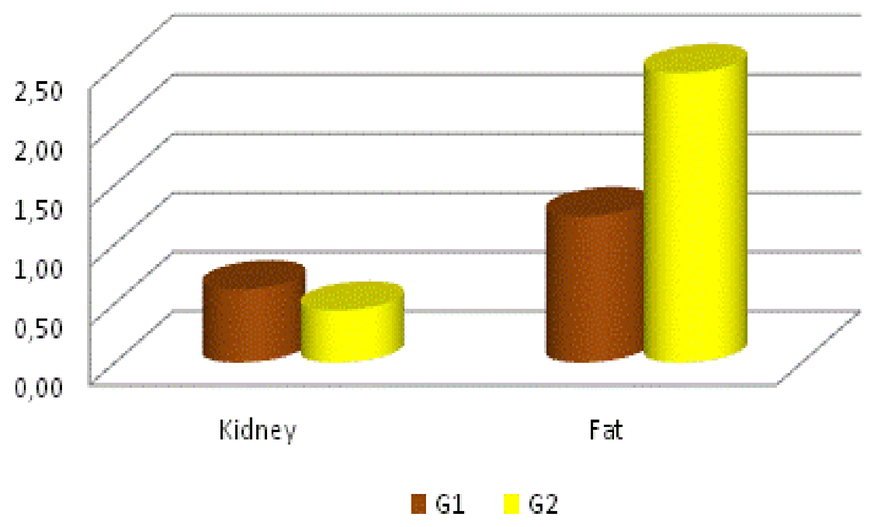
Evaluation shows that the calves of the second group achieved lower average daily gains and significantly lower body weight at the age of 150 days (P <0.05).

We have found a lower weight of the main parts (1st class quality: tenderloin, round, striploin, shoulder) of the meat in the 2nd group (P <0.05) in carcass value indicators too. Animals in 2nd group had a higher proportion of kidney fat compared with 1st group, but the difference was not significant (table 1 and fig. 1).

Table 1: The weight of carcass parts

		mean	s	v
1st class quality meat	group 1	12.97	0.41	3.18
	group 2	9.54	0.50	5.20
2nd class quality meat	group 1	11.96	0.80	6.65
	group 2	11.07	1.22	11.02
right half carcass	group 1	37.38	2.78	7.44
	group 2	27.13	2.59	9.56

Fig. 1 The weight of kidney and internal fat (kidney, rumen, intestinal)



From the analysis of meat samples MLT in calves of 2nd group were found: higher water content (75.25 g.100g^{-1}, compared to 74.77 in the animals of group 1), higher content of intramuscular fat (1.35 g.100g^{-1} compared to 1.25 in animals in group 1) and lower total protein content (22.40 g.100g^{-1}, compared to 22.99 in animals in group 1). Differences in chemical composition of meat were not statistically significant (table 2).

Table 2: Chemical composition of meat

	Total water content (g.100g^{-1})	Total protein (g.100g^{-1})	Total fat (g.100g^{-1})	Energy value (KJ.100g^{-1})
1st group				
$\bar{x}$	74.77	22.97	1.25	431.93
s	0.84	0.64	0.41	20,78
v	1.12	2.81	32.98	4,81
2nd group				
$\bar{x}$	75.25	22.40	1.35	426.07
s	0.44	0.59	0.24	6.39
v	0.58	2.65	17.63	1.50
significant	-	-	-	-

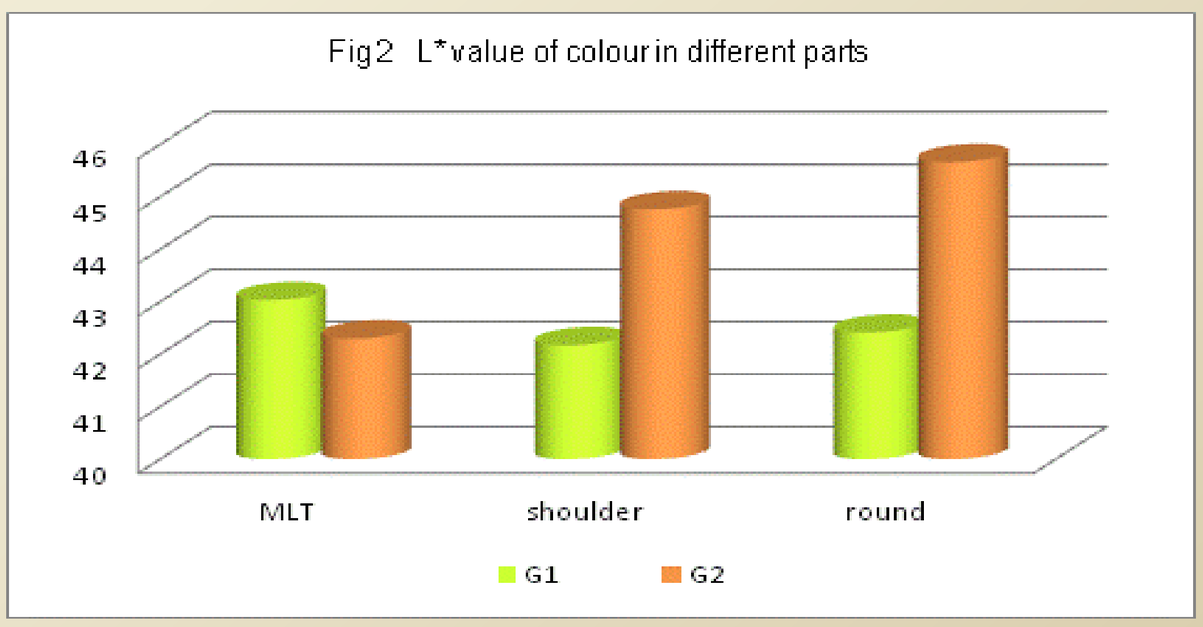
We studied also the amino acids content in MLT sample. We analyzed the total 17 amino acids (7 essential: Isoleucine, Leucine, Lysine, Methionine, Phenylalanine, Threonine, Valine). The essential amino acids contents (of the observed number) was 39.83 % in the first group and 39.59 % in the 2nd group (table 3) .

Table 3: Amino acid contents (%)

	Essential	Semi-Essential	Non-Essential
Group 1	39.83	11.89	48.28
Group 2	39.59	11.69	48.72

Significant differences between groups in values of pH_1 and pH_{24} we have not found . The observed traits did not showed any qualitative variations of meat. We have not found any differences between groups in meat color (L* value: 1st group 43.03; 2nd group 42.30, fig. 2) too. On the contrary statistically significantly lower value of percentage drip loss was found in animals of group 1 (P <0.05).

Fig 2 L*value of colour in different parts



Conclusion

The significant differences in the fattening characteristics between groups were observed. (in group 2 was lower daily gain and lower body weight during the fattening period). In the qualitative parameters were not found any significant differences between the groups.

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