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Table 3 Content of nutrients in silages

Parameter n = 6	Control		Kofasil Live		Statistical significance
	x	s	x	s	P < 0,05 P < 0,01
Dry matter in g	266,61	0,23	285,92	1,47	1 : 2
Crude protein in g	174,07	0,11	177,22	0,27	1 : 2
Fibre in g	332,44	0,76	344,20	0,49	1 : 2
Nitrogen-free extract in g	368,61	6,88	353,61	8,76	
Fat in g	46,56	0,12	45,79	0,18	
Ash v g	78,31	0,19	78,67	0,16	
ME in $MJ.kg^{-1}$ dry matter	9,15	0,02	9,15	0,02	
NEL in $MJ.kg^{-1}$ dry matter	5,33	0,01	5,34	0,01	

THE LEVEL OF NUTRITIOUS FEEDING OF COWS ON PASTURES AND ITS INFLUENCE ON SELECTED MILK QUALITY INDICATORS

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Summary

In an experiment with three groups of cows during pasture season selected indicators of technological milk quality were observed in dependence on different level of nutritious feeding of cows. The results confirmed the influence of nutrition (its energetic constituent) on acidifying ability of milk and its solidifying temperature. The type of nutrition influenced values of iodine number. However the level of nutrition in this experiment did not influence rennetability values of milk.

Key words: pasture, nutritious feeding of cows, milk quality, acidifying ability, rennetability, iodine number, point of milk solidifying

Introduction

Under conditions of mountain and submontane regions grass vegetation is the basic component of forage stock. Pasture grass, mainly due to intense cultivation, is rich in nitrogenous components but poor in energy. In relation to the ratio of nitrogenous components to energy it is necessary to consider pasture grass of half-natural type to be exclusively protein forage, which requires additional feeding of cows on pastures by forage rich in energy (KNOTEK et al., 1990, GALLO, 1998). This fact is demonstrated not only by a low effectiveness of basic forage ratio produced on grass matter basis but also by different physiological defects of cows. One of the outcomes is reduced quality of produced milk. In pasture regions we can expect higher urea content and lower content of proteins, non-fat dry matter and lactose. We can also expect more radical development of technological problems during milk processing (HANUŠ et al., 1994, FOLTÝS, 1997). According to SOMMER (2000) the content of nutrients in milk is an indicator of metabolism state of cows, therefore it can be used as a criteria determining quality process of milk production.
The goal of this work was to observe selected indicators of technological quality of milk produced by cows of Slovakian Pinzgau Breed during pasture on the original half-natural grass additionally feed with energetic forage.

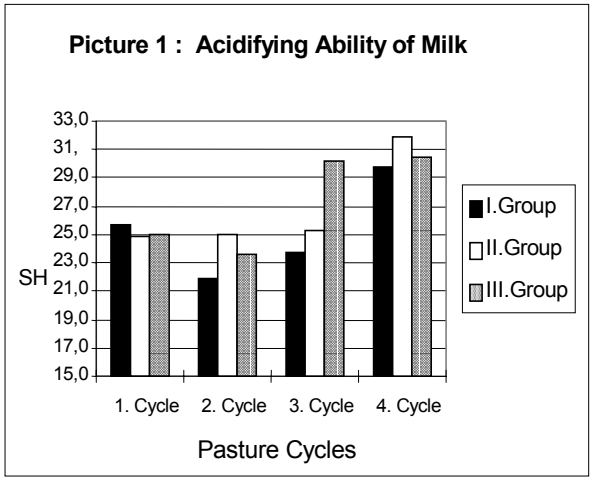
Material and methods

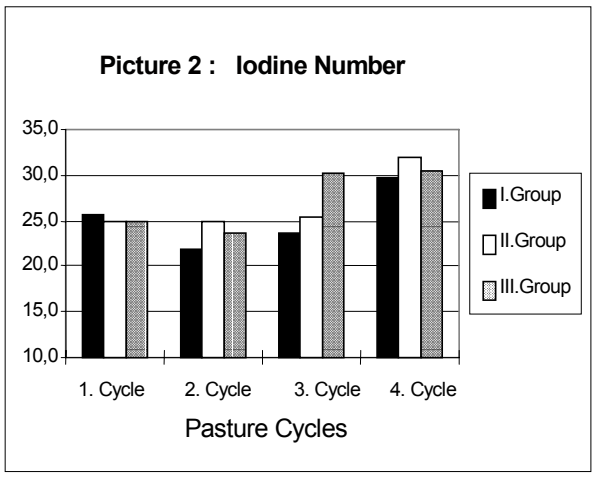
There was eighteen cows of Slovakian Pinzgau breed used in this experiment. They were divided into three groups, each containing six cows according to these criteria: approximately the same yield at the beginning of the experiment, same stage of lactation, number of lactations, minimum range of live weight. Cows were pastured on the original half-natural pastures. Grass dosage was given to cows daily in groups. Pasture season lasted 138 days (May 19 - to October 3). Pasture season was divided

into individual pasture cycles having different duration in dependence on grass growth. Cows on pastures used in this experiment were fed additional energetic forage in the form of brewing malt in these amounts: 1st group (controlling) – without addition, 2nd group - 1,5 kg dry matter/cow per day, 3rd group - 3,0 kg dry matter/cow per day. Brewing malt was fed to cows in half dosages in the morning and in the evening. For each kilogram of milk exceeding yield of 12 kilograms cows were fed grained mixture DOG in the amount of 0,5 kg. During these experiment cows were also fed with mineral forage mixture in the amount of 150 g/cow^{-1}/day^{1}.
Samples of milk from individual cows were taken approximately in 30 - days intervals. Acidifying ability (yoghurt test), rennetability, iodine number and solidifying point in milk samples was tested. Basic statistic characteristics from measured values were obtained. Values determined in groups were compared by one factor dispersion analysis and differences between average values in individual indicators were evaluated by Scheff ´ s test.

Results and discussion

Higher average values of acidifying ability of milk during pasture season were on the contrary to the 1st group with no additional feeding (26,1 ° SH) gained in groups of cows with additional feeding (2nd group - 27,8 ° SH, 3rd group - 27,9 ° SH). This was influenced by the amount of added brewing malt. Course of acidifying ability of milk in individual cycles of pastures (picture 1) also proves that higher values of acidifying ability were gained in groups of cows fed additional forage. Similarly, KADLEC (1998) and GAJDÙŠEK (1995) state that lower acidifying ability of milk is mainly due to insufficient energy in forage dosage fed to cows. The influence of additional feeding by energetic forage was more significantly manifested in the 2nd pasture cycle, when statistically provable differences (+ $P < 0,05$) were found between group without additional feeding (1st group) and groups with additional feeding (2nd and 3rd group).





The level of additional feeding of cows in this experiment did not significantly influence rennetability values of milk. In this case during the whole period of pasture statistically provable differences between experimented groups of cows were not

found. However, KIRST (1985) and PAŽMOVÁ (1992) talk about significant reduction of rennetability in case of insufficient energy and surplus of nitrogenous components. The shortest average time of milk renneting during the whole pasture season was found in the 1st group of cows, followed by 3rd and then 2nd group. Statistically provable differences (+ P< 0,05) were confirmed in the 1st pasture cycle between 1st and 3rd group of cows.
The average iodine number values (JÈ) during pasture season demonstrate the influence of different nutritious feeding in individual groups of cows, when the highest value of iodine number (40,5) were gained in cows from the 1st group. Cows of the 2nd and 3rd group gained lower values of iodine number (36,53, and 36,66 respectively). Statistically provable differences (+ P< 0,05) were found during the whole pasture season between 1st and 2nd group. Statistically provable differences between these groups were also found during the 2nd pasture cycle. Dynamic changes of iodine number during individual pasture cycles are illustrated in picture 2. But it is evident that higher iodine number values were gained in the 1st group of cows, which was fed only grass from pastures. The results gained are in accordance with KRÈÁL (1990). According to him the fresh mature green forage, meadow grass cause high iodine number value and forage with high fibre content, starch or saccharose cause low values of iodine number. According to ULBERTH (1991) forage components, which support development of acetic acid in rumen metabolism and at the same time they are poor in fat, lead to development of solid milk fat (low iodine number). In case of fresh pasture grass (in dry matter 5 to10 % of lipids and low fibre content) content of acetic acid decreases.
Normal and appropriate way of nutritious feeding of cows does not have any significant influence on solidifying temperature of milk (TTM). Changes can be observed in case of inappropriately balanced ratio between energetic value of feeding dosage and protein content and mineral deficit (MICHALCOVÁ,1997, KADLEC, 2000). The gained results correspond with this when average values TTM found during pasture season, as well as in individual pasture cycles were lower in groups of cows with additional energetic forage (2 group: - 0,533 °C, 3 group: - 0,530 °C, or 1 group: - 0, 527 °C). Statistically provable differences between individual groups of cows were not found.

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THE CHOLESTEROL LEVEL OF FATTENERS' MEAT IN DEPENDENCE ON A KIND FAT IN FEED RATION

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Summary

The crossbred fatteners [♀(♀Polish Landrace x ♂Polish Large White) x ♂duroc] from body weight 40kg to slaughtering (103,5kg) were receiving complete mixtures as follows:
- experimental I - control group - without any fat