

## THE INFLUENCE OF GRAZING HERBAGE ON CHOSEN PARAMETRES OF MILK QUALITY

### INFLUEȚA PLANTELOR DE PE PĂȘUNE ASUPRA ANUMITOR PARAMETRII DE CALITATE A LAPTELUI

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*Yield, botanic composition and chemical analyses of grazing herbage were observed in four localities with different altitude. The altitude was for first place at 600-650 m, second place at 700-750 m, third place at 700-800 m and the fourth place at 400-700 m. Grazing herbage is the most natural and optimal feedstuff for all kinds and categories of cattle. Grazing should notably regulate the pasture composition, i.e. support dominance of soft stolonate strain of grasses and decrease occurrence of weeds and less value strain of graminoids and herbs. Grazing was found to be 20-30% less of species then in hewed herbage. Grazing in the earlier growth period supported the development of lower stolonate graminoids and *Trifolium repens* at the expense of high-grown graminoids and other herbs. Selective character of grazing was at the time the animals had at disposal larger area then forage usage. Part of herbage evaluation was also observation milk and meat quality on farms. Owing to grazing there were some changes in protein content and protein fraction. At the grazing the part of alfa-lacto-albumin has increased.*

**Key words:** pasture, botanic composition, milk

#### Introduction

The conditions on pasture, their quality of nutrients are the important factor for the welfare of polygastric animals and quality of their products (Zastawny et al 2004). The good management of pasture increasing of nutrients and botanical structure can influence (Čermák et al 2004, Gaisler, Pavlů 2005). Optimal structure of good pasture consist of 50-70% of grass, 10-20% of clover and 10% of other plants sorts (Čermák et al 2001, Mrkvička, Veselá 2004). The crude protein increasing with the clover depending has negative drop the fiber content in fresh pasture, but the silage production for winter season must be technologic prepared (Kadlec et al 2001, 2004, Pozdíšek et al 2003,).

#### Material and Methods

In the 2004-2005 years on the Sumava mountains the 7 different experimental basis was chosen in high level from 450 to 900 m over sea altitude.

On the 3 farm the milk cows are feed with pasture in summer season, concentrate dosage depend on milk production and hay. On 2 farms the beef cattle are grazing, and on 2 farms the combination beef and milk cattle are bred. In the winter season the pasture in silage form are feeding. The pasture yield, botanic structure of grass, clover and other plants sorts, there chemical analyze and the quality of animal product are observed. On 3 farm the permanent grazing, grazing with mulch combination and pasture with felling was observed.

### Results and Discussions

There are in the Graphs 1-2 the botanic changes of types, in different altitude are showed. The results of dry matter DM, crude protein CP, crude fiber CF, neutral detergent fiber NDF and acid detergent fiber in DM are in the table 1-3 present. In the table 1 are 7 experimental basis, in the table 2 the base grazing with milk cows , in the table 3 the different form of grazing –permanent grazing PP, grazing + mulch PM, grazing + felling are present. The result of milk production and there quality is in the table 4,5 presents. In the graphs 3,4 are the change of fibre, crude protein and DM in May and August by grazing of beef cattle aree shoved. In graphs No5,6 the average monthly milk yield and the monthly average of concentration in crude protein and crude fibre in voluminous feed rations.

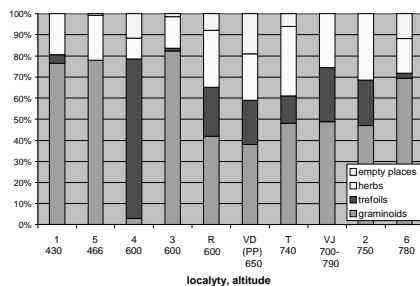


Figure 1 Part of grass, clover and herbs in May

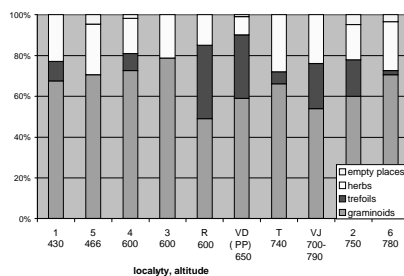


Figure 2 Parts of grass, clovers and herbs in September

**Table. 1**

Nutrients content, -range, in DM

locality	May, 2005					August, 2005				
	DM %	CP %	CF %	ADF %	NDF %	DM %	CP %	CF %	ADF %	NDF %
1	13,5	17,5	21,0	28,2	46,0	25,0	12,0	27,5	33,5	54,9
2	14,0	16,7	20,7	27,7	41,6	26,9	10,9	30,0	38,0	55,0
3	20,9	20,0	19,6	25,9	45,4	30,0	9,5	26,9	34,5	58,0
4	25,8	19,6	17,5	24,2	32,5	26,3	13,8	25,8	31,6	51,0
5	23,8	13,6	22,8	29,4	45,9	22,3	11,4	24,0	29,4	44,7
6	20,9	17,7	18,9	24,5	38,9	21,4	12,3	23,9	31,5	47,6
7	19,1	19,7	19,5	24,1	41,3	—	—	—	—	—

**Table. 2**

Nutrients content in localities (VJ), (T) and (R) in 100 % DM

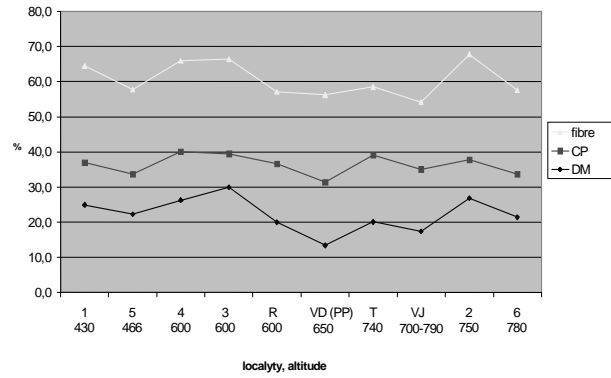
locality	May, 2005					August, 2005				
	DM %	CP %	CF %	ADF %	NDF %	DM %	CP %	CF %	ADF %	NDF %
VJ	14,7	18,7	17,2	23,3	44,6	17,4	17,7	19,0	25,6	41,2
T	17,4	12,1	24,2	31,8	51,9	20,1	19,0	19,4	27,1	43,6
R	10,4	16,4	18,0	23,9	39,3	20,0	16,7	20,4	26,2	44,0

**Table. 3**

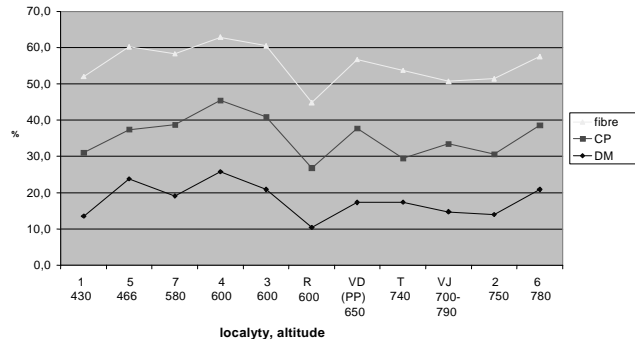
Nutrients content in locality V. D. in 100 % DM

rem: PP-permanent pasture, PM- pasture+mulch, PS- pasture+felling

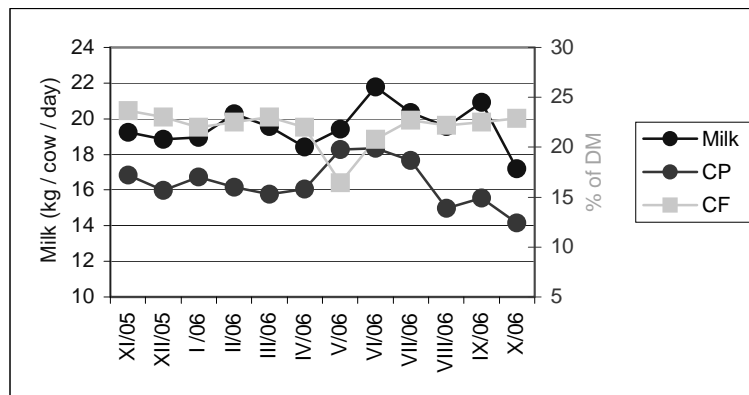
pasture method	May, 2004					August, 2004				
	DM %	CP %	CF %	ADF %	NDF %	DM %	CP %	CF %	ADF %	NDF %
PP	17,3	20,4	19,0	25,3	49,1	13,4	18,1	24,7	34,2	63,8
PM	17,3	21,9	18,9	23,6	47,0	17,5	19,4	24,5	31,6	56,4
PS	14,2	14,2	23,2	30,3	51,8	14,4	16,9	19,9	30,7	46,5



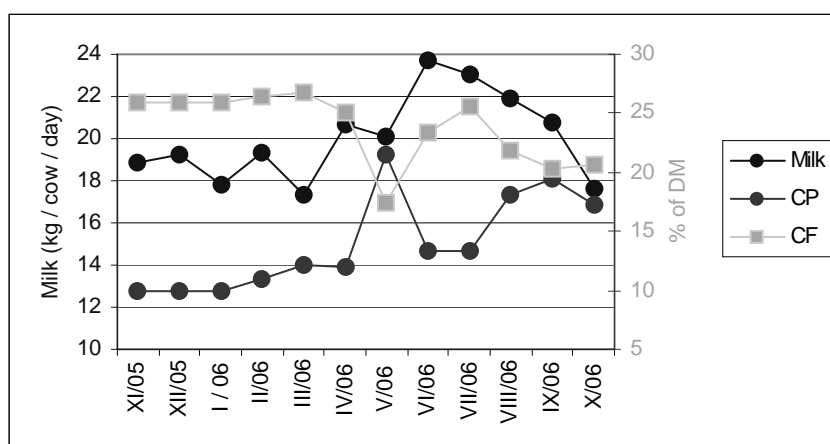
**Figure 3** The progress in DM, CP and fiber content in dependence on a different altitude



**Figure 4** The progress in DM, CP and fiber content in dependence on a different altitude



**Figure 5.** Milk yield monthly and the crude protein and crude fiber concentration, in voluminous feed rations in dry matter, at farm 1.



**Figure 6** Milk yield monthly and the crude protein and crude fiber concentration, in voluminous feed rations in dry matter, at farm 2.

Grazing had also an influence on slaughter body and meat quality. The results of grazing utilization of milk and beef cattle with the results of many authors as for example Cermak et al (2004), Pozdišek et al (2003), Zastawny et al (2005) corresponded. For the better understanding of grazing management, evaluation of pasture nutrients, yield, quality of animal products is necessary the many experiments and the new method of analyze validate. The results from 2006 year from 2 farms are depend on farm management. This results with the paper from Gaisler and Pavlu (2005) and others corresponded.

**Table. 4**

Survey of reach efficiency indices in dairy cow

keeping	R	VJ	T
year	2003/2004		
number	96	91	122
milk amount (kg)	6099	6230	4783
fat (%)	4,18	4,00	4,08
kg	255	249	195
proteins (%)	3,25	3,23	3,29
kg	198	201	157
age 1.calve	28/18	37/26	37/21
interval (days)	411	428	437

Table. 5

Partial produce in 2003/2004 year (pasture period 2005)

Period/ Indicator		V J			R		
		milk (kg)	fat (%)	proteins (kg)	milk (kg)	fat (%)	proteins (%)
May	x	23,52	3,90	3,49	21,54	4,27	3,58
	s <sub>x</sub>	6,97	0,46	0,53	6,12	0,62	0,45
June	x	22,14	3,81	3,33	20,34	3,89	3,59
	s <sub>x</sub>	6,46	0,75	0,30	6,03	0,61	0,36
July	x	23,16	3,70	3,37	20,25	4,58	3,43
	s <sub>x</sub>	6,16	0,49	0,28	6,35	0,66	0,34

### Conclusion

In the 7 experimental bases the quality of pasture and their sorts of grass, clovers and other plants are observed. Near them the quality of animal products are analyzed. The influence are not statistical significant. We can see the tendency for human preference of animal product from grazing pasture animal in the fresh and hay form feed. The tendency for the less of the body fat and are by beef cattle in different altitude. The bread of animal is significant.

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*Au fost observate producția și compoziția botanică, de asemenea, s-au efectuat analize ale plantelor de pe pășunile din patru localități situate la altitudini diferite. Prima localitate a fost situată la 600-650 m, a doua la 700-750 m, a treia la 700-800 m și cea de-a patra localitate la 400-700 m. Plantele de pe pășuni reprezintă furajul cel mai natural și optim pentru toate categoriile și rasele de bovine. Pășunatul ar trebui să regleze compoziția pășunii, ex. să suporte dominanța plantelor slab stolonate și să scadă concentrația buruienilor și a gramineelor și a altor plante cu valoare nutritivă redusă. S-a demonstrat că pășunatul reduce variabilitatea speciilor de pe pășune. Pășunatul în perioada timpurie de creștere favorizează dezvoltarea gramineelor mici stolonate și a *Trifolium repens* în detrimentul gramineelor cu creștere mare și altor ierburi. Caracterul selectiv al pășunatului s-a manifestat la începutul perioadei de pășunat, atunci când animalele au avut la dispoziție o arie mai mare decât necesarul. Evaluarea plantelor de pe pășune a fost în concordanță cu calitatea laptelui și a cărnii din fermele respective. Datorită pășunatului au fost observate modificări ale conținutului și fracțiunii proteice. Datorită pășunatului fracțiunea alfa-lacto-albamină a crescut.*

**Cuvinte cheie:** pășune, compoziție botanică, lapte