Comparison of Pasture Vegetation in LFA Areas

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Abstract

The aim of this study was to compare pasture vegetation in LFA areas located in two different altitudes. Pasture vegetation sampling was performed 1 month on two different farms (Těšov, Vlčí Jámy). The selected places were marked by three representative places at 10 m^2. Dried samples were weighed and chemically analyzed by standard methods ÚKZÚZ

Keywords: cattle, grazing, Less Favoured Areas,

1. Introduction

Permanent grassland is based mainly in the Less Favored Areas (LFA), which are aspecially disadvantaged by it´s location, situated mainly in mountain and foothill areas. LFA areas are used mainly for grazing livestock, forage producers are large and important landscape element. The main prerequisite for nutrition of grazing animals using permanent grassland it the knowledge of the quaility and kontent of nutrients, which are very variable. The aim of this study is to compare pasture vegetation in LFA areas, which are located in two different altitudes.

2. Literature review

Under the principles of EU, the Less favoured areas are those areas, which are unprofitable. It consist of areas with ecological restrictions, not only mountain areas, but also other areas where agricultural production is restricted in some way (Protected area, areas water sources, etc.) [1].

The importance of grazing is becoming increasingly important particularly in the less favored areas, called the Less favored Areas (LFA), where cattle breeding cannot be replaced. permanent grasslands are in this areas not only the potential producer of forage, but also they significantly participate in the creation of the cultural landscape and they maintain biodiversity [2].

During the growing season crop yield becomes increasing, but the cultural flowering of grasses and legumes make fiber content higher. Nitrogen content, and mineral content decrease and digestibility is reduced (about 0.5 to 0.7% daily) and the concentration of energy in forage (NEL) is also decreasing. In species-rich grasslands (with a higher proportion of dicotyledonous plants) nitrogen content, digestibility, mineral content is not decreasing as fast as in intensive grassland. That is why they can harvest a few weeks later [3].

The nutritional value of forage is essentially determined by its energy and protein value. The energy value of forage is closely related to its

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chemical composition and organic matter digestibility [4]. Energy is necessary for all life processes in the ability to pay for energy requirements of the animal [5, 6]. In the Czech Republic net energy utilization system is used and it is counted as coefficient multiplying the metabolizable energy [7]. Equilibrium between synthesis and breaking down in the rumen contents of nitrogen compounds in the NL at 13 percent and 5.9 MJ NEL kg of ration dry matter [5].

3. Matherials and Methods

Pasture vegetation sampling was conducted during 1 month. In the selected habitats tree representative sites at 10 m^2 were marked. Each assessment is carried out stand tah tis the determinative. Then the motor scythe mowed vegetation, from 9 m^2 is considered and went mixed representative sample of 800 to 1000g. Of the remaining 1 m^2 stand was made by sorting the grass, clover and other herbs, the sample is considered, labeled and dividend into properly labeled bags. Using your „Rising plate meter“ was done by min. 100 measurements and found the average height of vegetation at a given location. Sampling followed the applicable regulations (Regulation of Ministry of Agriculture no. 415/2009Sb.) [8].

Acidodetergent fiber (ADF) was derermined by hydrolysis of vegetation cover using the analyzer KJELTEC company TECATOR [9].

The results were processed using Microsoft Office – Excel and Statistica10.0 software.

4. Results and discussion

Table 1 shows the average results of the nutriet content of pasture stands 750 m. above sea level eco – farms in 100 % dry matter.

Table 1. Nutrient content of organic enterprise A

MONTH		NL	FAT	CF	NDF	ADF	ASH	BNLV
VI.	*mixture*	15.20	1.44	24.42	43.41	28.94	24.23	34.31
	grass	12.63	1.37	25.29	44.81	29.57	24.01	34.42
	trifolium	18.83	1.36	23.69	40.13	28.26	24.35	34.42
	herbs	14.95	1.38	24.48	43.31	29.86	23.35	36.46
VII.	*mixture*	16.78	1.49	22.78	41.68	29.30	23.66	34.03
	grass	18.63	1.74	24.72	47.73	29.48	24.45	31.45
	trifolium	22.70	1.05	16.88	28.16	24.01	24.79	34.57
	herbs	16.75	1.67	23.70	43.62	29.43	23.17	33.95
VIII.	*mixture*	15.57	2.34	23.54	38.66	29.42	25.13	32.77
	grass	16.10	1.62	23.71	41.21	29.55	25.06	32.97
	trifolium	18.00	1.07	22.66	45.46	29.28	22.69	35.59
	herbs	16.87	1.55	22.33	44.10	28.90	26.10	33.17
IX.	*mixture*	15.33	2.60	25.19	39.52	30.85	23.52	31.06
	grass	15.07	2.45	26.23	42.50	30.95	23.67	30.91
	trifolium	22.70	2.84	18.91	29.68	25.55	23.53	32.02
	herbs	22.20	2.33	25.96	48.51	30.65	22.54	32.91
XI.	*silage*	16.05	3.82	33.10	56.81	37.23	25.40	21.63

Table 2 shows the average nutrient content of conventional farms, which operates in the conventional manner at an altitude 1000 m. above sea level – in 100 % dry matter.

When evaluating the nutrient content in the enterprise and - environmentally-employed and company B - conventionally employed, it is evident that the organization and presentation of N is lower - and higher representation matter and fiber fractions NDF and ADF. The same results are observed in the melted silages prepared in these enterprises of the first mowing pasture vegetation. The results are similar, as reported Míka et al. (1997) [4] and Mládek et al. (2006) [3]. When assessing nutrients in the sub - samples of grasses, legumes and herbs when compared

with mixed pasture samples N-substances affect clover, fiber, grass and herbs. Similar results were reported by Bruskirk et al. (1992) [6], Blížkovský (1996) [10], Šroller et al. (2001) [1], Čermák et al. (2008) [7], Pozdíšek et al. (2008) [5].

Table 2. Nutrient content of conventional enterprise B

MONTH		NL	FAT	CF	NDF	ADF	ASH	BNLV
V.	*mixture*	21.67	2.14	18.03	34.30	23.81	23.33	33.95
	grass	21.97	1.79	18.43	35.17	24.17	22.92	34.11
	trifolium	27.70	1.42	13.00	26.41	21.51	23.09	34.79
	herbs	20.53	3.19	18.46	34.10	24.37	22.79	35.13
VI.	*mixture*	14.13	1.07	24.76	48.77	31.24	23.20	35.85
	grass	11.87	1.13	25.27	49.33	31.42	23.18	35.92
	trifolium	18.20	1.07	18.69	40.41	27.04	26.17	35.86
	herbs	19.80	1.63	16.44	33.10	25.10	21.60	40.53
VIII.	*mixture*	16.52	1.36	23.08	44.77	29.47	22.14	35.70
	grass	19.27	1.78	23.37	44.93	29.51	21.52	35.19
	trifolium	22.00	1.10	19.01	36.77	25.94	22.68	35.21
	herbs	16.70	1.45	19.12	38.64	28.51	23.06	39.67
X.	*mixture*	15.53	1.51	21.36	49.15	28.74	22.08	34.90
	grass	21.47	1.89	21.69	46.53	28.88	22.34	34.09
	trifolium	24.70	1.27	14.03	30.11	25.00	17.92	39.28
	herbs	22.95	1.55	20.14	49.00	28.09	23.62	35.43
XI.	*silage*	17.35	2.00	24.90	53.64	35.99	22.19	33.67

5. Conclusions

In pursuit of the company-employed and in the organic system and company B at conventional farming systems are significant changes in the composition of crude protein. These were significantly lower in organic system. On the contrary, representation and fiber fractions are higher, changes in vegetation are influenced by climatic changes. The same tendency is also nutrient contents in mixed samples and sub samples of grasses, legumes and herbs. The evaluation is continuing.

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