NOTES ON THE DRY MATTER YIELD OF SOME PERMANENT PASTURES ON THE SURDUC HILLS (TIMIS COUNTY)

APRECIERI PRIVIND PRODUCȚIA DE SUBSTANȚA USCATA A UNOR PAJIŞTI PERMANENTE DIN DEALURILE SURDUCULUI

Carmen Claudia DURAU, Al. MOISUC

Agricultural and Veterinary University of the Banat, Timişoara, Romania
Coressponding author: Carmen Claudia DURĂU, e-mail:

***Abstract**: In this paper, the authors try to assess from the point of view of dry matter yield on a few permanent pastures on the Surduc Hills (Timis County). On the ground of the study carried out for three years, we could establish that there is a relationship between altitude and dry matter yield.*

***Rezumat**: In lucrarea de fata s-a încercat o evaluare din punct de vedere al producției de substanța uscata, in câteva pajişti permanente din dealurile Surducului. Pe baza studiului efectuat timp de trei ani s-a putut stabilii ca exista o relație intre altitudine si producția de substanța uscata*

Key words: *permanent pasture, dry substance, altitude, and exposition*
Cuvinte cheie: *pajişte permanenta, substanța uscata, altitudine, expoziție*

INTRODUCTION

The first most rigorous research in the field of altitude pastures were carried out by CAPOTE (1966) in the Alp and Jura Mountains (MARUŞCA, 2001). Then they established that dry matter yield of Swiss pastures decreases 10% every 250 m, starting from 400-600 m altitude (9.6 t/ha of dry matter), up to altitudes of 2200-2400 m (2.1 t/ha of dry matter) (MARUŞCA, 2001).

MATERIAL AND METHOD

Our study was carried out on the Surduc Hills. The Surduc Hills are located at the foot of the Poiana Ruscă Mountains, and are surrounded eat by the Bega-Luncani river and north by the terraces of the river Bega. Its southern limit, to the Poiana Ruscă Mountains, follows the locality line Crivina, Hăuzeşti, Gladna, Zolț, and Tomeşti; the limit is continued by the valley of the river Saşa, up to Crivina de Sus.

The contact area with the mountain is through a strong gap and through a series of contact depressions.

Observations were done on a series of pastures in the localities of Surducu Mic, Fârdea, and Hăuzeşti, which concentrates them in a smaller area.

The first cut was in May, at the end of the first decade and at the beginning of the third decade (May 20-21); the second cut was in the first decade of July (July 1-2); and the third cut was in September, at the end of the first decade.

RESULTS AND DISCUSSIONS

The total average yield of dry matter was between 2,901 kg/ha in 2003 and 2,462 kg/ha in 2001 (Table 1).

Dry matter yield in 2001 was 235 kg/ha higher than that of the year 2002, i.e. an insignificant increase, and 439 kg/ha higher than that of the year 2003, a distinctly significant increase.

As in the case of green matter yield, dry matter yield is highly influenced by the amount of rainfalls.

Table 1

Total dry matter yield

Study years	Dry matter yield per cut	%	Difference	Significance
Year 2001	2,901 kg/ha	100	-	
Year 2002	2,666 kg/ha	91	-235	
Year 2003	2,462 kg/ha	84	-439	00

Dl 5% =281 kg/ha Dl 1% = 433 kg/ha Dl 0.1% = 653 kg/ha

Since permanent pastures under study are located at different altitudes, we tried to establish a relationship between altitude and dry matter yield.

In 2001, we measured a correlation coefficient of -0.54, which means that during the studied altitude interval there is a negative correlation (Figure 1).

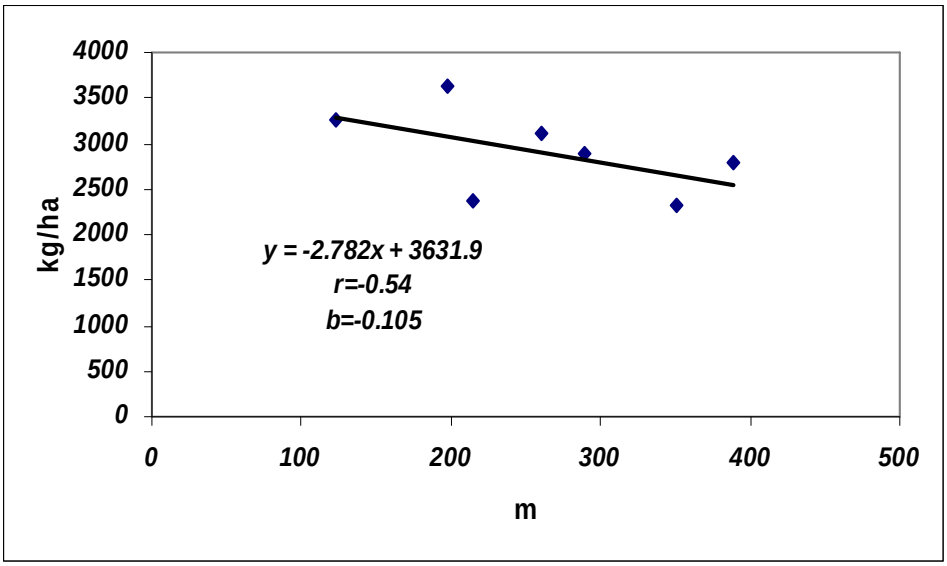

Figure 1. Correlation between altitude and average total dry matter yield in 2001

Since pasture exposition was different, we could not differentiate the influence of altitude and that of exposition. A similar situation was also in 2002 (Figure 2) and in 2003 (Figure 3).

On the ground of the correlations existing between altitude and total dry matter average yield, we could assess the relationship between dry matter yield and altitude, establishing that theoretically total dry matter average yield decreases in the interval 123 – 389 m with 0.1 kg/ha (b = -0.1) for each meter, which is valid only for permanent pastures under study and for the interval mentioned above.

We should also mention that pasture exposition was different, and the phenomenon could also be explained by the fact that there is a micro-climate developed by the Lake Surduc in the studied area, and the pastures are around it.

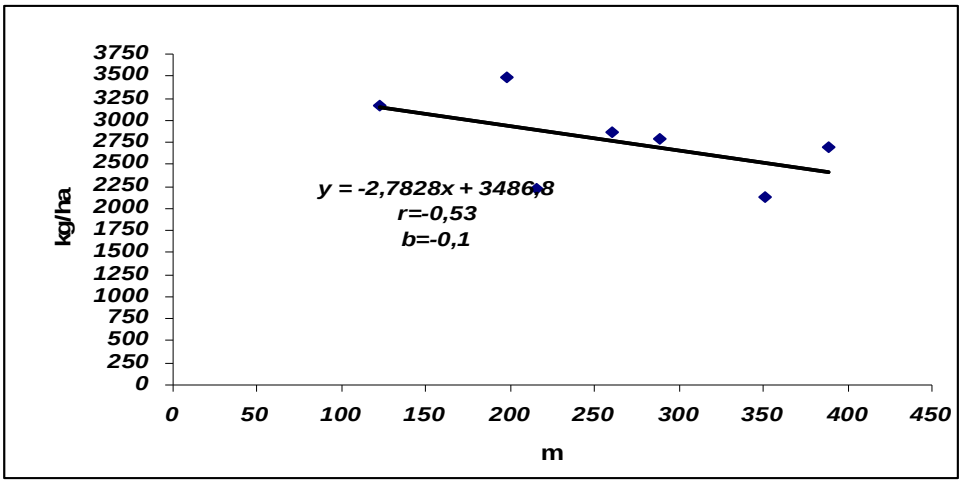

Figure 2 Correlation between altitude and average total dry matter yield

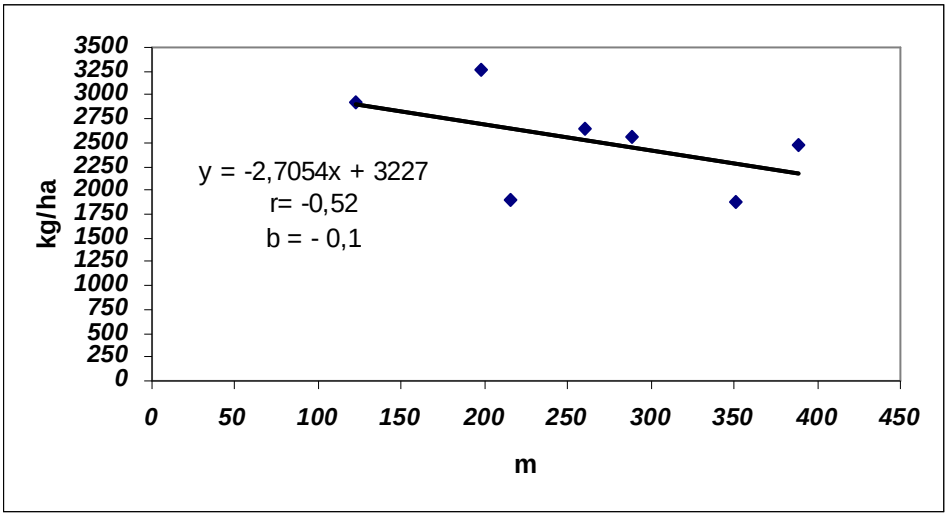

Figure 3 Correlation between altitude and average total dry matter yield in 2003

CONCLUSIONS

- total average dry matter yield was between 2,901 kg/ha in 2003, and 2,462 kg/ha in 2001;
- since pasture exposition differed, we could not establish the influence of altitude and that of exposition;
- the total average dry matter yield decreased in the interval 123-389 m with 0.1 kg/ha (b = -0.1) for each m of altitude, which is valid only for permanent pastures under study and for the altitude interval mentioned above.

LITERATURE

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