

THE INFLUENCE OF INTERACTION ORGANIC FERTILIZATION x MINERAL ON FOOD COLLECTION IN TEMPORARY MEADOWS IN THE OLTENIEI AREA

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ABSTRACT

Fertilizers play an important role on the temporary grasslands in order to obtain a spontaneous crop of good quality feed. When applying manure with a modest dose of phosphorus (P₅₀), the harvest difference is over 2t / ha d.s. compared to the variant that did not receive this macro element. Also, a modest fertilization with nitrogen of N₇₅₋₁₀₀ applied on an organic material, the harvest increase becomes considerable.

Introduction

In contrast to the temporary grasslands established instead of permanent degraded grasslands, the use of organic fertilizers is recommended for those sown in arable land (Puia, I, s. 1984; Moga, I 1993). By using the manure, high yields are obtained during the first three years, under the conditions of reducing the doses of mineral fertilizers (Anghel, Gh.1984; Cotigă, 2012)

MATERIAL AND METHOD

The experience was located on Iuvosol from S.C.D.A. Șimnic, using the method of placement in subdivided plots. As a biological material, 30% alfalfa cultivated with 70% perennial grasses was used.

RESULTS AND DISCUSSIONS

If the effect of interaction without manure or phosphorus is tracked (table 1)

Table 1

The effect of the interaction without manure or phosphorus on the production of dry matter in the culture of lucerne mixed with perennial grasses, on the luvisol from S.C.D.A. Șimnic, in 2018.

Interaction		ABSOLUTE PRODUCTION d.s.t/ha	RELATIVE PRODUCTION %	THE DIFFERENCE	THE MEANING
No manure	P ₀	5,2	100	Mt	-
	P ₅₀	6,7	129	1,5	*
	P ₁₀₀	7,1	137	1,9	*
	P ₁₀₀ K ₅₀	7,4	142	2,2	*

DL 5% 1,4t/ha d.s.

DL 1% 2,5t/ha d.s.

DL 0,1% 3,3t/ha d.s.

We can see the low level of forage harvest due to the low humus content in the soil. However, a significant increase in production is obtained at a rather modest fertilization with phosphorus (P₅₀).

Table 2

Effect of manure x phosphorus interaction on the production of dry matter in lucerne culture mixed with perennial grasses, luvisol from S.C.D.A. Șimnic, in 2018

Interaction		ABSOLUTE PRODUCTION d.s.t/ha	RELATIVE PRODUCTION %	THE DIFFERENCE	THE MEANING
Manure 30t / ha	P ₀	5,7	100	Mt	-
	P ₅₀	8,8	154	3,1	**
	P ₁₀₀	8,9	156	3,2	**
	P ₁₀₀ K ₅₀	9,3	163	3,6	**

DL 5% 1,3t/ha d.s.

DL 1% 2,7t/ha d.s.

DL 0,1% 3,8t/ha d.s.

The data obtained significantly highlight the harvest increases due to the presence of organic fertilizer that varies between 8.8 t /ha d.s. if 9.3t/ha d.s.
In case of interaction: without manure x nitrogen:

Table 3

The effect of the interaction: without manure x nitrogen on the production of dry matter at the temporary grassland cultivated in the Oltenia area (2018)

Interaction		ABSOLUTE PRODUCTION d.s.t/ha	RELATIVE PRODUCTION %	THE DIFFERENCE	THE MEANING
Manure 30t/ha X	N ₀	2,7	100	Mt	-
	N ₇₅	6,0	222	3,3	***
	N ₁₅₀	8,7	322	6,0	***
	N ₂₂₅	9,0	333	6,3	***

DL 5% 1,4t/ha d.s.

DL 1% 2,9t/ha d.s.

DL 0,1% 4,3t/ha d.s.

The obtained harvests are mainly due to the high doses of nitrogen; which from an economic point of view is not justified.

Table 4

The effect of the interaction: manure x nitrogen on the production of dry matter at the temporary grassland cultivated in the Oltenia area (2018)

Interaction		ABSOLUTE PRODUCTION d.s.t/ha	RELATIVE PRODUCTION %	THE DIFFERENCE	THE MEANING
Manure 30t/ha X	N ₀	4,3	100	Mt	-
	N ₇₅	8,6	200	4,3	***
	N ₁₅₀	10,0	233	5,7	***
	N ₂₂₅	9,8	228	5,5	***

DL 5% 1,4t/ha d.s.

DL 1% 2,9t/ha d.s.

DL 0,1% 4,0t/ha d.s.

The results obtained and presented in table 4, highlight the presence of the organic fertilizer which, in conjunction with the nitrogen applied in low doses justifies the high level of the harvest.

CONCLUSIONS

1. The presence of phosphorus-based fertilizers (P_{50}), regardless of the existing material, brings an obvious increase in harvest, because the luvosol in the research area is poor in this macroelement.
2. The organic fertilizer in the dose of 30 t / ha followed during the vegetation period by a fertilization with N_{75} , leads to obtaining significant increases of harvest and even balanced from the energy-protein point of view.

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