SOME CONSIDERATIONS CONCERNING THE PRODUCTIVITY OF ANNUAL AND PERENIAL FODDER PLANTS FROM THE NORTH PART OF MOLDAVIA

C. SĂICU[1]

[1]Agricultural Research and Development Station of Suceava
saicuconstantin@yahoo.com

The obtained research results in the last 20 years, in the fodderproduction area, at the ARDS of Suceava, emphasized the most productive annual and perennial fodder crops from the north part of Moldavia. Among the annual fodder plants are remarked the silo maize and the awned ryegrass alone or mixed with red clover sowed in the august and used as fodder in the next year and among the perennial fodder plants the alfalfa alone or mixed with orchard grass sowed on the profound soils, light acid or neuter. Also, the experimental results obtained on the acid soils and with a high content of clay, emphasized a good behaviour of red clover mixed with timothy.

***Key words*:** *fodder plants, green mass*

In zootechny the main activity is the fodder production. Every day the farmers have to establish the necessary fodders, function by species who grow, in order to cover the forages ration from quantitative and quality point of view [2]. When we select the fodder species we have to take into consideration the ecological area where grows these fodder species, being necessary to grow those forages which give the most nutritive units at the surface unit at the good prices for farmer [3,4]. In the voluminous forages production we have to take into consideration one conveyer which assure a good continuity in the utilization of the green mass for animals[5].

In this paper it presented some obtained results in different experiments. This study emphasizes the best variants of fodders production in the Suceava Plateau conditions. The creation of the new advanced cultivars it offers new possibilities on obtaining of new forages and diversification of productive technologies on superior quality [1].

MATERIAL AND METHOD

The researches on the faeoziom argic soil, light acid (pH water =5.8), were accomplished, with following supply: mobile phosphor = 4.0 p.p.m., potassium = 45 p.p.m., and the humus content = 3.5 %. The multi yearly climatic conditions emphasize an yearly average temperature on 7.7°C and total yearly precipitation on 586.6 mm.

RESULTS AND DISCUSSIONS

It known that in the structure of one conveyer we have to take into consideration the obtaining possibilities of earlier green forages. Many years in this area the earliest forage plant was the rye green mass, but after introduction of the awned ryegrass which was sowed in the august month, it observed that this species replaced very well the rye green mass.

In the *table 1* are presented the results concerning the green mass yield and dry substance at some annual crop forages for producing of green mass in the first part of warm season. The data from this table emphasize the yield of the rye green mass which was on 15.62 t/ha and the dry substance on 362 t/ha. The biggest yields at the awned ryegrass in the pure crop or mixed with red clover 61.8 t/ha green mass and respectively 62.55 t/ha were registered, and the yield of dry substance was 8.4 t/ha and respectively 8.31 t/ha. These crops were mowed for 4 times with a fertilization on N90 at first mow, and N49 and the second and third mows at the awned ryegrass crop, and with N45 only at the first mow.

The vetch mixture composed from oat and fodder pea or spring vetch realized a green mass yield on 31.63 t/ha, and 4,86 t/ha and respectively 5.76 t/ha D.S.

From the obtained results till know we recommend to renounce at the rye green mass and him replacing with awned ryegrass in the pure crop or mixed with red clover, sowed during august month and used only one year.

Table 1

The yield of the green mass and dry substances obtained at some earlier forages crops (average 2000-2004)

Variant	green mass t/ha	Difference		Signif.	D.S. (t/ha)	Difference		Signif.
		t/ha	%			t/ha	%	
Rye green mass (t) (standard)	15.62	st.	100		3.62	st.	100	
Awned ryegras 100%	61.80	46.18	396	xxx	8.40	4.78	232	xxx
Awned ryegras 70%+ red clover 30%	62.55	46.93	400	xxx	8.31	4.69	230	xxx
Vetch mixture (fodder peas 140kg/ha+ oat 80kg/ha)	26.24	10.62	168	xxx	4.86	1.24	134	xx
Vetch mixture (spring vetch 100kg/ha+ oat 50kg/ha)	31.63	16.01	202	xxx	5.74	2.12	159	xxx

In order to realize the hay stabile yields it is necessary to grow perennial cereals and legumes in the pure crop or mixed. Thus, the most spreading and productive forages are: alfalfa, red clover, orchard grass and timothy. In the table 2 the green mass and the dry substances yields at the 4 species in pure crop or mixed are presented. It is necessary to mention that an the perennial cereals in the pure crop the fertilization was made in the spring with N90 and after each mow with N30. At the perennial legumes in the pure or mixed crops the fertilization was made in the spring with N45.

The biggest green mass and dry substances yields on at the pure crop of alfalfa or mixed with orchard grass, were obtained. The biggest yield on the dry substances at the mixed alfa 50% (10kg/ha) with orchard grass, 50% (15kg/ha), were obtained (9.79 t/ha). The red clover crop along or mixed with timothy, given the smaller dry substances yields (5.81-6.89 t/ha) then the other forages. It is necessary to mention that in the Suceava Plateau, the alfalfa crop is limited by the soil structure, because when the acidity is below 5.2 and the clay content is high, the alfalfa must be replaced with red clover along or mixed with timothy.

The most important annual fodder crops are: silage corn, fodder beat and fodder cabbage. Their yields are presented in the *table 3*.

The biggest dry substances yields at the silage corn (9.38 t/ha), were realised, followed by fodder cabbage (7.16 t/ha) and at finally the fodder beat (6.86 t/ha). The silage corn is the best main crop because this crop accomplishes the biggest number on the nutritive units per hectare. This crop is completely mechanized and after clamping process, during whole year, this kind of fodder can be used at the ruminant animals.

Table 3

The green mass and dry substances yields obtained at some cultivated fodder plants (average 1992-1998)

Crop	green mass (t/ha)	Difference		Signification	D.S. %	Difference		Signification
		t/ha	%			t/ha	%	
Silage corn	58.6	-	100		9.38	st.	100	
Fodder beat	74.6	16.0	120	x	6.86	-2.52	73	00
Fodder cabbae	62.8	4.2	107		7.16	-2.22	76	00

Table 2

The green mass and dry substances yields obtained at some perennial forages crops in the Suceava conditions (average 2000-2004)

Variant	green mass t/ha	Difference		Signification	D.S. t/ha	Difference		Signification
		t/ha	%			t/ha	%	
Alfalfa 100%	57.85	mt	100		8.85	mt	100	
L 75%+D 25%	54.00	-3.85	93		8.96	0.11	101	
L 50%+D 50%	55.28	-2.57	96		9.79	0.94	111	
L25%+D 75%	50.14	-7.71	87	0	9.22	0.37	104	
Dactylis 100%	44.35	-13.50	77	000	8.87	0.02	100	
Red clover 100%	47.57	-10.28	82	000	6.89	-1.96	78	0
Tr. 75%+Ph 25%	38.25	-19.60	66	000	5.81	-3.04	66	000
Tr. 50%+Ph. 50%	38.57	-19.28	67	000	6.09	-2.76	69	000
Tr.25%+Ph. 75%	33.75	-24.20	58	000	6.01	-2.84	68	000
Phleum 100%	32.14	-25.71	56	000	6.24	-2.61	71	000
	DL 5%	6.83				1.06		

CONCLUSIONS

1. The rye green mass and even the spring vetch mixture can be replaced with very good results, by awned ryegrass along or mixed with red clover,

2. For dry substances yield or green mass yield in the favourable area for alfalfa crop we recommend this crop along or mixed with orchard grass, and in the acid soils with a high clay content we recommend the red clover crop along or mixed with timothy.

3. From the all annual fodder plants the best results we obtained with silage corn, because is completely mechanized, with clamping possibilities which assure during whole year the forages for animals.

BIBLIOGRAPHY

1., Drăgan, Lenuţa, Dihoru, Alexandrina, 2004 - *Amestecuri furajere-alternative pentru borceagul de primăvară*, Analele ICDA, vol. LXXI.
2. Moga, I. şi colab., 1983 - *Plante furajere perene*, Ed. Academiei R.S.R.,Bucureşti.
3. Moga, I.,1993-*Cultura leguminoaselor perene*, Ed. Ceres, Bucureşti.
4. Moga, I. şi colab.,1996 - *Plante furajere*, Ed. Ceres, Bucureşti.
5. Zamfir, Ileana şi colab., 2003 - *Combinaţii tehnologice de plante furajere anuale şi perene*, Analele ICDA Fundulea, vol. LXX.