INFLUENCE OF ECOLOGIC FERTILIZERS OVER *SALVIA OFFICINALIS* L. AND *ALLIUM CEPA* L.

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Salvia officinalis L. is cultivated for it's leaves which have as active element the volatile oil. This together with the other components have coleretic, carminativ, antiseptic, hipoglycemic efects and antisudorific action. Allium cepa L. contains sugars, vitamines, antibiotic substances, volatile oil, flavonoides, glucochimines etc. Those active elements have diuretic and antiseptic efects. At SCDA Secuieni during 2006-2008 diferent doses of ecologic fertilizer were examined (8 l/ha, 10 l/ha, 13 l/ha). The used fertilizer was Kipos, which contains 18,72% organic nitrogen, 0.64%, organic phosphorus and 0.52% organic potassium. For both species highest productio were obtained with the 10 l/ha dose. Thus, for Salvia officinalis L. the dried herba production, in the 10 l/ha variant, was 2105 kg/ha in tre first year, 2346 kg/ha in the second year and 3580 kg/ha in the third yer of vegetation. For Allium cepa L. the bulbs production (10 l/ha eco fert variant) was 22760 kg/ha in 2006,23330 kg/ha in 2007 and 24815kg/ha in 2008.

***Key words**: ecologic fertilizer, sage, onion, production*

Salvia officinallis L.. (the sage) is a perennial plant cultivated for it's leaves which have as active element the volatile oil [1]. This, together with other components have coleretic, carminative, antiseptic, hypoglycemic effects and antisudorific action [2].

Allium cepa L. (the onion) is a vegetable with therapeutic value because the bulbs contain sugars, vitamins, antibiotic substances, volatile oil, flavonoides, glucochimines etc. [4]. These active elements have calming, diuretic and antiseptic effects etc. [3].

The results presented in this paper are obtained in a research project as part of a CEEX program.

MATERIAL AND METHOD

The experiments were done at SCDA Secuieni during 2006-2008 and were placed on a cambic black earth after the randomized blocks method in four repetitions. Different doses of ecologic fertilizer were tested 8.0l/ha, 10.0l/ha and 13.0 l/ha.

The sage was multiplied by seeds from SCDPMA Fundulea, being a local population called " de Razmiresti", and the onion was multiplied using chives from the Wolska variety.

The used fertilizer was Kipos which contains 18.72% organic nitrogen, 0.64% organic phosphorus and 0.52 % organic potassium. The fertilization was done by hand early in the spring time before the plants started to grow.

The sage leaves and the onion bulbs were harvested by hand as well as the maintenance of the field, no herbicides were used.

The biometrical measurements were performed at harvest. In the sage's case the aerial part was examined and in the onion's case, the bulbs.

RESULTS AND DISCUSSIONS

After the biometrical measurements in sage it's clear that the fertilizer dose influenced the medium weight of the plant. The highest weight was reported for the 10.0l/ha variant (251.31g/plant). From the total plant weight 75.6% represents the leaves and 24.4% the stem (*figure 1*).

The fertilizer dose has a positive influence over the growth and development of *Allium cepa* L. The highest bulb weight (137,11g), in average for the 3 experimental years, came from the 10.0l/ha ecologic fertilizer variant. In the case of the 13.0 l/ha variant the average bulb weight was 134,21 (*figure 1*).

The bulb diameter was in average between 5.00-5.43 cm for the 10 l/ha ecologic fertilizer variant (*table 2*).

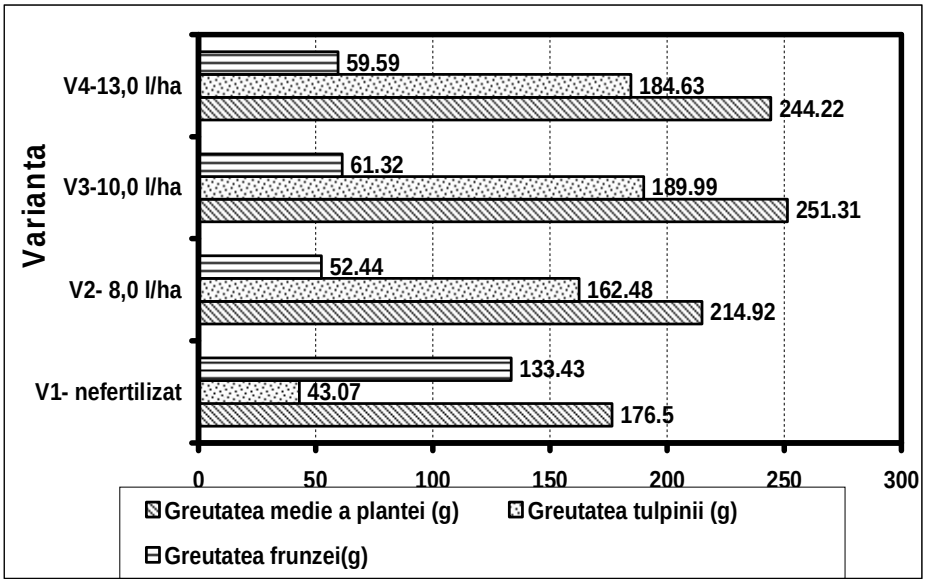

Figure 1 **Biometrical determination on *Salvia officinalis* L.**

Table 1

Influence of ecologic fertilizer doses over average bulb weight (g)

Observation and variant	Average bulb weight(g)			Average (g)
	2003	2007	2008	
V1- nonfertilized - Mt	134,00	117,49	127,68	123,39
V2- fertilized - 8,0 l/ha	135,02	121,13	128,71	128,29
V3- fertilized - 10,0l/ha	139,28	129,58	142,46	137,11
V4- fertilized - 13,0l/ha	136,35	125,18	141,12	134,21

Table 2

Influence of ecologic fertilizer doses over average bulb diameter (cm)

Observation and variant	Average bulb diameter (cm)			Average (cm)
	2003	2007	2008	
V1- nonfertilized – Mt	4,9	4,7	5,4	5,01
V2- fertilized - 8,0 l/ha	4,9	4,6	5,6	5,03
V3- fertilized- 10,0 l/ha	5,6	4,9	5,8	5,43
V4- fertilized - 13,0l/ha	5,2	4,8	5,7	5,23

In the case of *Salvia officinalis* L., leaves production it also varies depending on the fertilizer doses. Highest dry leaves production was obtained in the third year of plants vegetation (2008) for the 10l/ha ecologic fertilizer variant. For the same variant, the dry leaves production was 2105 kg/ha in the first year (2006) and 2346 kg/ha in 2007. In average, over the 3 experimental years, the highest production was also obtained in the case of 10 kg/ha ecologic fertilizer variant, the difference between this variant and the non fertilized one being of 224kg/ha. For the 13 l/ha variant the production was of 2625 kg/ha dried leaves, the difference between this variant and the non fertilized one being of 172 kg/ ha dried leaves (*table 3*)

Table 3

Influence of ecologic fertilizer doses over dry leaves production for *Salvia officinalis* L.

Variant	Dry leaves production (kg/ha)			2006-2008			
	2006	2007	2008	Kg/ha	%	Dif.	Semnif.
V1- nonfertilized - Mt	1932	2059	3369	2453	100	Mt	
V2- fertilized - 8,0 l/ha	1987	2108	3407	2501	102	48	
V3- fertilized- 10,0 l/ha	2105	2346	3580	2677	109	224	***
V4- fertilized - 13,0l/ha	2084	2296	3496	2625	107	172	***
DL5%= 69,3kg/ha		1%=105,0 kg/ha			0,1%=169,5 kg/ha		

In the case of *Allium cepa* L. , the highest bulb production was obtained also for the 10l/ha ecologic fertilizer variant: 22760 kg/ha in 2006, 23330 kg/ha in 2007 and 23635 kg/ha in 2008. The average production for this variant was 23635 kg/ha, the difference between this variant and the non fertilized one being of 6062 kg/ha (34%). For the 13l/ha ecologic fertilizer variant the average production was 21102 kg/ha bulbs, the difference between this variant and the non fertilized one being of 3529 kg/ha bulbs (20%) (*table 4*).

Table 4

Influence of ecologic fertilizer doses over bulbs production for *Allium cepa* L.

Variant	Bulbs production (kg/ha)			2006-2008			
	2006	2007	2008	Kg/ha	%	Dif.	Semnif.
V1- nonfertilized – Mt	19825	14750	18145	17573	100	Mt	
V2- fertilized - 8,0 l/ha	20927	16400	20198	19175	109	1602	
V3- fertilized - 10,0l/ha	22760	23330	24815	23635	134	6062	**
V4- fertilized - 13,0l/ha	21512	20450	21344	21102	120	3529	*
DL5%= 2822 kg/ha		1%=4273 kg/ha			0,1%= 6864 kg/ha		

CONCLUSIONS

After the trials done by SCDA Secuieni in 2006-2008 we can conclude that the optimum ecologic fertilizer dose for both species is 10l/ha.

In case of Salvia officinalis L. ,for the optimum dose of ecologic fertilizer, the average weight of one plant was 137.11 g, and the average production 2677 kg/ha.

For Allium cepa L., in the same variant, the average bulb weight for 3 years was 137.11 g, and the average diameter 5,43 cm.

4. The highest average bulbs production between 2006-2008 was obtained for the 10 l/ha ecologic fertilizer variant, 34% more than in the non fertilized variant.

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