THE INFLUENCE OF SEEDING TECHNOLOGY ON THE HARVEST AND ON THE CONTENT OF *TAGETES PATULA L.* ACTIVE PRINCIPLES

INFLUENȚA TEHNOLOGIEI SEMĂNATULUI ASUPRA RECOLTEI ŞI A CONȚINUTULUI ÎN PRINCIPII ACTIVE LA *TAGETES PATULA L.*

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Rezumat: *Cercetările desfăşurate în Câmpia Timişului, pe un sol de tip aluvisol, gleizat moderat, pun la dispoziția celor interesați date referitoare la perioada optimă de semănat, distanța dintre rânduri şi densitatea plantelor pentru specia tagetes patula L.Producția totală de Flores Tagetes sine receptaculuis, în domeniul cercetat, a variat între 2600 şi 8600 kg/ha. Conținutul de heleanină, pe probe medii, din cele trei recolte, a fost de 0,366 %.*

Abstract: *The researches done on the Timiş Plain on a moderate gleic alluvial soil make available for the interested persons data referring to the optimal seeding period, the distance between rows and the plant density for the Tagetes patula L species. The total yield of Flores Tagetes sine receptaculuis on the test area varied between 2600 and 8600 kg/ha*
The heleanin content on average samples drawn from the three harvests has been of 0,366 %.

Key words: *Tagetes patula, seeding technology*
Cuvinte cheie: .*Tagetes patula, tehnologia semănatului*

INTRODUCTION

Tagetes patula L. is the only plant of the species it belongs to which is cultivated in our country because of its flower content liguled in heleanin.

The plant roots have the characteristic of attracting the nematodes from the soil. This is why this species could be important for the biological agriculture in the future, especially for the vegetable culture.

There are only a few researches regarding the technology of cultivation by seeding directly on the field, and for the western part of the country there are no data regarding this important technological chain loop.

MATERIAL AND METHOD

The experiments were trifactorial, organized after the subdivided lots' method, with three repetitions, having the following factors' graduations: the A factor - the seeding period; the B factor – the distance between rows; the C factor – the number of plants / m^2.

The precursory cultivated plant was the bean. There have been obtained three yields annually.

RESULTS AND DISCUSSIONS

The results obtained by adding the three yields and expressed in fresh liguled flowers are given in Table 1. By analyzing the influence of the seeding period there resulted that, for the three distances between rows and the two densities, the best average results were obtained for the

variants seeded in the second half of April. The increase of yield as compared to the seeding done during the first half was of 9%, which is a very significant difference of over 600 kg/ha.

In table 2 are presented the yield data expressed in liguled flowers dried in the open air until obtaining a cons tant weight.

Table 1

The total yield of fresh *Flores Tagetes sine receptaculis*

The A factor The seeding period	The B factor The distance between rows (cm)	The C factor – The number of plants / m^2	The averages of the A factor				
		$C_1 – C_{40}$	$C_2 – C_{60}$	Yield Kg/ha	%	Difference Kg/ha	Signification
a_1 1-10 IV	b_1 – 30 cm	6791	6975	7002	100		
	b_2 – 50 cm	7536	7666				
	b_3 – 70 cm	6319	6732				
a_2 10-20 IV	b_1 – 30 cm	7140	7795	7612	109	610	XXX
	b_2 – 50 cm	7725	8657				
	b_3 – 70 cm	7006	7347				
a_3 20-30 IV	b_1 – 30 cm	3038	3245	3211	46	- 3791	000
	b_2 – 50 cm	3592	3866				
	b_3 – 70 cm	2603	2877				

DL 5% = 180 kg/ha, DL 1% = 245 kg/ha, DL 0.1% = 319 kg/ha

Specification	C_1	C_2
Yield kg/ha	5755	6128
%	100	106
Difference		373
Signification		

5% = 444 kg/ha, DL 1% = 594 kg/ha, DL 0.1% = 788 kg/ha

Specification	b_1	b_2	b_3
Yield kg/ha	5837	6507	5481
%	100	111	94
Difference		670	- 356
Signification		XXX	00

DL 5% = 254 kg/ha, DL 1% = 334 kg/ha, DL 0.1% = 454 kg/ha

Postponing the seeding until the last decade of April has decreased the yield with a very significant negative difference of over 3700 kg/ha.

Increasing the distance between rows from 30 cm to 50 cm has determined an increased of the yield with 11%, the yield difference of 670 kg/ha being very significant. Increasing the distance between rows to 70 cm is not motivated, because it has determined the decrease of the yield with 6 % as compared to seeding at 30 cm, the difference of over 350 kg/ha being significantly negative. Increasing the density from 40 plants / m^2 to 60 plants / m^2 has determined the increase of yield with 6%, the difference of 373 kg/ha being insignificant.

It is not to be wanted to postpone the seeding until the last decade of April, because it reduces the yield with over 700 kg/ha as compared to seeding in the first half of April.

The results of determining the heleanin content of the average samples are:

- sample I – 0,377%
- sample II 0,355%

The average content = 0,366%

Based on the average content of 0,366% and on the total yield of *Flores Tagetes sine receptaculus*, there has been calculated the total quantity of helenien presented in fig. 1.

Tabelul 2

The total yield of dried *Flores Tagetes sine receptaculis*

The A factor The seeding period	The B factor The distance between rows (cm)	The C factor – The number of plants / m^2		The averages of the A factor			
		$C_1 – C_{40}$	$C_2 – C_{60}$	Yield Kg/ha	%	Difference Kg/ha	Signification
a_1 1-10 IV	b_1 – 30 cm	1358	1393	1400	100		
	b_2 – 50 cm	1507	1534				
	b_3 – 70 cm	1264	1346				
a_2 10-20 IV	b_1 – 30 cm	1428	1549	1520	108	120	XXX
	b_2 – 50 cm	1545	1732				
	b_3 – 70 cm	1400	1469				
a_3 20-30 IV	b_1 – 30 cm	616	648	642	45	- 758	000
	b_2 – 50 cm	719	773				
	b_3 – 70 cm	521	576				

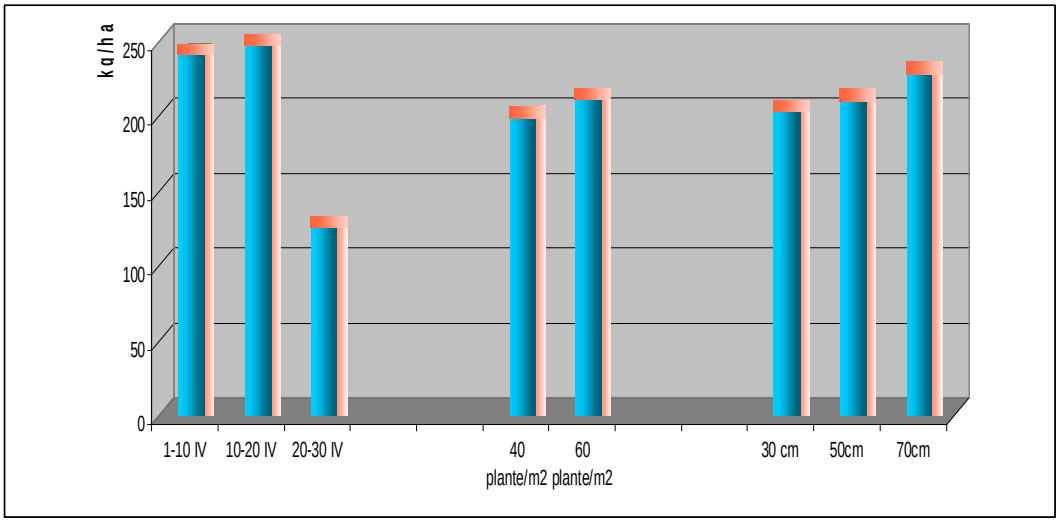
DL 5% = 36 kg/ha, DL 1% = 49 kg/ha, DL 0.1% = 64 kg/ha

Specification	C_1	C_2
Yield kg/ha	1151	1224
%	100	106
Difference		73
Signification		

DL 5% = 89 kg/ha, DL 1% = 119 kg/ha, DL 0.1% = 158 kg/ha

Specification	b_1	b_2	b_3
Yield kg/ha	1165	1301	1096
%	100	117	94
Difference		136	- 69
Signification		XXX	00

DL 5% = 51 kg/ha, DL 1% = 67 kg/ha, DL 0.1% = 91 kg/ha



Yield Kg/ha	242	248	126		200	212		204	211	229
%	100	102	52		100	106		100	103	112
Difference		2	-116			12		7	25	

Fig. 1. The heleanin content obtained (kg/ha)

CONCLUSIONS

The results obtained show that the biggest *Flores Tagetes sine receptaculus* yields of the Banat Plain are obtained when the seeding is done in the second decade of April, at a distance of 50 cm between rows and a density of 60 plants/m^2,

LITERATURE

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