INFLUENȚA FERTILIZĂRII ŞI A DESIMII PLANTELOR ASUPRA PRODUCȚIEI DE ACHENE ŞI ULEI LA CÂȚIVA HIBRIZI DE FLOAREA-SOARELUI CULTIVAȚI ÎN CONDIȚIILE ECOLOGICE DIN CÂMPIA JIJIEI

THE INFLUIENCE OF FERTILIZATION AND PLANT DENSITY ON ACHENE AND OIL PRODUCTION, WITHIN SOME SUNFLOWER HYBRIDS IN THE ECOLOGICAL CONDITIONS OF JIJIA PLAIR

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Rezumat: *Lucrarea îşi propune stabilirea influenței diferitelor doze de fertilizare asupra producției de achene şi ulei la floarea-soarelui, precum şi influența diferitelor desimile de semănat.*

Abstract: *The work proposes to find the influence of various doses of fertilizers on the production of akenes and oils to the sunflower, as well as the influence of different densities of sowings.*

Key Words: *sunflowers, density, fertilization, hybrid*
Cuvinte cheie: *floarea soarelui, densitate, hibrid*

INTRODUCTION

With origins in the North American continent (Mexico), well known and admired as an ornamental plant since the beginning, sunflower is one of the latest crops to be used as an oil crop.

Countless events pushed the position of sunflower to a rapid evolution, becoming one of the most important oil crops.

The main cause is the chemical composition with oil richness of the achena fruits.

The most important chemical compound is the sunflower oil, but also the by-products obtained are equally important as a forage source.

The oil imposes itself as excellent edible oil, both for normal or dietary nutrition, due to the fat oil content and quality.

The aspect (colour and clearness), enjoyable taste for most of consumers, stability and prolonged conservation, as well as nutritive value close to butter, make the sunflower oil the most valuable fat product, compared to other vegetable oils.

The presence of other fat acids, and the concentration, make the sunflower oil a useful resource for other industries besides food industry, such as the production of biodiesel.

The research objectives for 2006 were to identify the effect of fertilization, sunflower hybrids and plant density on achena production, also the oil content and yield.

Density has an influence on the yield and quality of sunflower hybrids.

MATERIAL AND METHOD

Experimental factors

A - factor - fertilization

a_1- N_0P_0

a_2-$N_{32}P_{32}$

a_3-$N_{64}P_{64}$

a_4- N96P96

a_5-$N_{96}P_{96}K_{96}$

B - factor – sunflower hybrids.

b_1- Heliasol RO

b_2-Huracan

b_3-Tellia

C - factor – plant density.

C_1- 30,000 pl/ha

C_2- 50,000 pl/ha

C_3- 70,000 pl/ha

RESULTS

To the variant fertilized with $N_{64}P_{64}$ we achieved the largest inflorescence breadth (19.8 cm) to the hybrid Huracan, ghost variant of fertilize $N_{64}P_{64}$ with a inflorescence breadth of 18.3 cm to the hybrid Tellia, ghost variant fertilized with $N_{96}P_{96}$ all Tellia hybrid achieving a inflorescence breadth of 17.1 cm. The lowest values were registered at the hybrid Heliasol RO, which in variant N_0P_0 registered an inflorescence breadth of 13.2 cm, followed by variant $N_{32}P_{32}$ this hybrid having the inflorescence breadth of 12.4 cm.

Table 1.

The influence of fertilization and hybrid on inflorescence breadth

Fertilization	Hybrid	Diameter of anthodium(cm)	% when compared to the control variant	Differences	Signification
$N_{64}P_{64}$	HURACAN	19.8	150.0	6.6	xxx
$N_{64}P_{64}$	TELLIA	18.3	138.6	5.1	xxx
$N_{96}P_{96}$	TELLIA	17.1	129.5	3.9	xx
$N_{32}P_{32}$	TELLIA	16.5	125.0	3.3	xx
$N_{96}P_{96}K_{96}$	HURACAN	16.0	121.3	2.8	xx
$N_{64}P_{64}$	HELIASOL RO	15.3	115.9	2.1	xx
$N_{96}P_{96}K_{96}$	HELIASOL RO	15.0	113.6	1.8	
N_0P_0	TELLLIA	15.0	113.6	1.8	
$N_{32}P_{32}$	HURACAN	14.8	112.1	1.6	
$N_{96}P_{96}K_{96}$	TELLIA	14.8	112.1	1.6	
$N_{96}P_{96}$	HURACAN	14.4	109.0	1.2	
N_0P_0	HURACAN	14.0	106.0	0.8	
$N_{96}P_{96}$	HELIASOL RO	13.8	104.5	0.6	
N_0P_0	HELIASOL RO	13.2	100,00	Mt.	
$N_{32}P_{32}$	HELIASOL RO	12.4	93.9	-0.8	0

Production he caused to each hybrid to maturity, through weighing fruits raport to hectare, to the humidity of 11%.

MMB he to cause through count 200 of seeds, in 5 repetition to each hybrid, on each lot and on each fond fertilization, weighing seeds and report average weight to 1000 seeds.

For these he caused he to take how much 10 plant of sunflowers from each hybrid, density of sowing and level of fertilization.

MMB register, in the conditions of experimentations years 2007, on the average on fond fertilization to have value contained between 71.2 g ($N_{32}P_{32}$), feather to 45.0 g ($N_{96}P_{96}$).

When he fertilized with $N_{64}P_{64}$ it can be noticed that we obtained the largest MMB (45.90g), to hybrid Heliasol RO, and smallest weight of 1000 seeds (39.43g), on fond fertilization N_0P_0, to the hybrid Huracan.

Table 2.

MMB (g) to hybrid sunflower

Fertilization	Density (miles pl/ha)	Hybrid					
		Heliasol Ro	Average	Huracan	Average	Tellia	Average
N_0P_0	30000	41.93	39.81	41.76	41.68	40.43	41.04
	50000	39.66		43.86		42.76	
	70000	37.86		39.43		39.93	
$N_{32}P_{32}$	30000	40.76	40.10	42.23	42.18	43.10	43.42
	50000	39.86		44.03		44.96	
	70000	39.70		40.30		42.20	
$N_{64}P_{64}$	30000	45.30	45.07	43.10	43.33	44.46	44.72
	50000	45.90		45.66		45.86	
	70000	44.03		41.23		43.86	
$N_{96}P_{96}$	30000	43.53	43.44	42.31	43.21	43.46	43.57
	50000	44.23		44,46		44.16	
	70000	42.56		42.86		43.10	
$N_{96}P_{96}K_{96}$	30000	41.90	42.60	42.16	42.47	41.70	41.98
	50000	42.96		43.36		42.70	
	70000	42.96		41.90		41.56	
Averange on hibryds		42.20		42.57		42.94	

Concerning the influential hybrid of the sunflowers, hybrid Tellia achieved a production of 1197 kg/ha, hybrid Heliasol RO was the thinnest, registering a production of 1117 kg/ha, and the control variant.

Production hybrids of sunflowers by experience to by were little due drought from the agricultural year 2006 - 2007.

Table 3.

The influence of fertilization on the production of sunflower

Hybrid	Production (kg/ha)	% by control	Differences (kg/ha)	Significances
Tellia	1197	107,16	80,0	
Huracan	1149	102,88	32,2	
Heliasol RO	1117	100,00	Mt.	

DL 5% : 100 kg/ha,
DL 1% : 136 kg/ha,
DL 0.1% : 185 kg/ha.

CONCLUSION

To variant of the fertilized $N_{64}P_{64}$ we achieved the largest inflorescences breadth (16.8 cm) to the hybrid Huracan, the smallest values were registered for the hybrid Heliasol RO which in variant N_0P_0 registered inflorescences breadth to 11.9 cm, ghost variant $N_{32}P_{32}$ to the same hybrid with inflorescences breadth of 11.4 cm.

When he fertilized with $N_{64}P_{64}$ it can be noticed that he obtained MMB largest 45.90g, to the hybrid Heliasol RO, and the smallest MMB (39.43 g), on fond fertilization N_0P_0, to hybrid Huracan.

The Tellia hybrid achieved a production of 1197 kg/ha, and the hybrid with the smallest production was Heliasol RO, which registered a production of 1117 kg/ha.

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