VARIETY AND FERTILIZATION EXTRARADICULARE INFLUENCE ON SOYBEAN IN CONDITIONS PRDUCŢIEI OF THE FIELD JIJIA LOWER

INFLUENŢA SOIULUI ŞI A FERTILIZĂRII EXTRARADICULARE ASUPRA PRDUCŢIEI DE SOIA IN CONDIŢIILE DIN CÂMPIA JIJIEI INFERIOARE

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Abstract. *The research was conducted during 2004-2006 with a total of four varieties of soybean, two conventional varieties (Column and Triumph) and two varieties of genetically modified (AG 0801 and SR 2254 RR) and the fertilizations were used Basfoliar and Folifag.*
Key words: soybeans, fertilization, varieties, genetically modified.

Rezumat. *Cercetările s-au efectuat in perioada 2004-2006 cu un număr de patru soiuri de soia, două soiuri clasice (Columna şi Triumf) şi două soiuri modificate genetic (AG 0801 şi SR 2254 RR), iar ca fertilzanţi extraradiculari s-au folosit Basfoliar şi Folifag.*
Cuvinte cheie: soia, fertilizare, soiuri, plante modificate genetic

INTRODUCTION

Soy has a high capacity to adapt to different climatic conditions of soil, but best results are obtained in warm temperate zone with sufficient moisture and suitable soil.

Minimum germination temperature is around the 70C, as for sunflower. Plants bear after sunrise, for a short time temperatures of -20 ..- 30C stage seed-lobe and single leaf formation. Soybeans the moisture requirements are high, recording the specific consumption of between 300 and 700. The germination requires 120 to 150% water to dry seed weight.

The critical period for water entered the stage of formation of reproductive organs, flowering and seed filling. Insufficient water in this period fall flowers and pods, seeds formed remain low and production is reduced to about 50%. Water consumption varies in relation to the supply level of the soil, vegetation duration varieties, production potential, environmental conditions.

Soybeans requirements for light is like a short day plant. By early sowing, days short of the beginning of vegetation have an important role in meeting the requirements of medium late varieties.

MATERIAL AND METHOD

The environmental conditions of SC AGROFRUCT PLUGARI SA placed an experience as follows:

A factor – fertilizing with three graduations,
a_1 – $N_0P_{80}K_{80}$,
a_2 – $N_{64}P_{80}K_{80}$,
a_3 - $N_{96}P_{80}K_{80}$,
B factor – The extra-radiele fertilizing with three graduations,
b_1 – Not fertilized,
b_2 – Basfoliar
b_3 – Folifag,
C factor – Soibean varieties,
c_1 – Triumf,
c_2 – Columna,
c_3 – AG 0801 RR,
c_4 – S 2254 RR

RESULTS AND DISCUSSIONS

The most productive kind of experience was the variety which performed classic Column largest soybean seed production compared with the Triumph variety has some smaller productions (table 1).

Table 1

The influence of variety on seed production in conventional soybeans in 2006

Variety	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Average	3196	100,00	martor	
TRIUMF	3180	99,50	-15,0	
COLUMNA	3212	100,5	-16,0	

DL 5% = 121,1 kg/ha
DL 1% = 129,0 kg/ha
DL 0.1% = 139,4 kg/ha

Table 2

Influence of variety on seed production in conventional soybeans in 2005

Variety	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Average	3286	100,00	martor	
TRIUMF	3220	97,9	-66,0	
COLUMNA	3352	102,0	102,0	

DL 5% = 130,1 kg/ha
DL 1% = 142,0 kg/ha
DL 0.1% = 149,4 kg/ha

Table 3

Influence of variety on seed production in conventional soybeans in 2004

Variety	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Average	2930	100,00	martor	
TRIUMF	2905	99,1	25,0	
COLUMNA	2955	100,8	-25,0	

DL 5% = 116,9 kg/ha
DL 1% = 136,8 kg/ha
DL 0.1% = 150,2 kg/ha

Genetically modified soybean in the period 2004 - 2006, the significant differences between the two varieties considered, which are seen in tables 4, 5 and 6.

Table 4

Influence of variety on the production of genetically modified soybean seeds in 2006

Variety	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Average	3470	100,00	martor	
AG 0801	3630	104,61	160,0	***
SR 2254 RR	3480	100,28	10,0	

DL 5% = 140,0 kg/ha
DL 1% = 154,9 kg/ha
DL 0.1% = 174,7 kg/ha

In 2005 production of genetically modified soybean was lower than in 2006, performing a variety SR production 3040 kg / ha and a variety AG 0801 production of 3110 kg / ha, averaging 3075 kg / ha.

Table 5

Influence of variety on the production of genetically modified soybean seeds in 2005

Variety	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Average	3075	100,00	martor	
AG 0801	3110	101.1	35.0	
SR 2254 RR	3040	98.9	9.9	

DL 5% = 131,0 kg/ha
DL 1% = 144,9 kg/ha
DL 0.1% = 184,7 kg/ha

In 2004 soybean production was achieved at higher than 2005 and almost equal to that ordinary in 2006. And in 2004 the genetically modified variety AG

0801 had the highest production with 70 kg more variety to SR and 90 kg more than average

Table 6

Influence of variety on seed production in genetically modified soybean in 2004

Variety	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Average	3350	100,00	martor	
AG 0801	3440	102,68	90,0	
SR 2254 RR	3370	100,59	20,0	

DL 5% = 148,3 kg/ha
DL 1% = 162,3 kg/ha
DL 0.1% = 174,3 kg/ha

The influence of extra-radicle fertilizing on soybean seed production, in the tables below can be seen that experienced in 2004-2006, some options that have benefited from fertilizer production have made significant gains, other gains were lower compared with version control, fertilized.

Table 7

Influence of foliar fertilization on soybean seed production in conventional in 2004

Fertilization	**Seed production (kg/ha)**	**% compared to Mt.**	**Difference (kg/ha)**	**Significance**
Not fertilized	3086	100,0	martor	
Folifag	3132	101,5	46,0	
Basfoliar	3040	98,5	-46,0	

DL 5% = 125,3 kg/ha
DL 1% = 134,2 kg/ha
DL 0.1% = 195,7 kg/ha

In 2004 soybean production (classical) in variants fertilized with Folifag had the highest yields (3132 kg / ha), followed by variations unfertilized (3086 kg / ha) and variants fertilized with Basfoliar (3040 kg / ha), table 7.

Table 8

Influence of foliar fertilization on soybean seed production in conventional in 2005

Fertilization	**Seed production (kg/ha)**	**% compared to Mt.**	**Difference (kg/ha)**	**Significance**
Not fertilized	3274	100,00	martor	
Folifag	3225	98,5	-49	
Basfoliar	3322	101,53	48	

DL 5% = 121,1 kg/ha
DL 1% = 129,0 kg/ha
DL0.1%= 139,4 kg/ha

The classic soy highest production were obtained in 2004 to variants which have been applied Folifag and in 2005, when he applied Basfoliar.

Table 9

Influence of foliar fertilization on soybean seed production in conventional in 2006

Fertilization	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	Significance
Not fertilized	3396	100,00	martor	
Folifag	3386	99,7	-10	
Basfoliar	3405	100,3	9,0	

DL 5% 132,5 kg/ha
DL 1% 144,6 kg/ha
DL 0.1% 156,3 kg/ha

In 2006 soybean production was 3405 kg / ha (table 9) in the classical variant fertilized with Basfoliar, 3386 kg / ha in the fertilized variant with the variant fertilized Folifag and 3396 kg/ha.

Table 10

Influence of foliar fertilization on the production of genetically modified soybean seeds in 2004

Extra-radicle fertilizing	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	Significance
Not fertilized	2918	100,00	martor	
Folifag	3326	113,98	987,7	***
Basfoliar	3227	110,58	888,7	***

DL 5% = 143,5 kg/ha
DL 1% = 157,9 kg/ha
DL 0.1% = 174,9 kg/ha

The largest genetic modified soybean yields were obtained in both variants Folifag fertilization in 2004, 2005 and in 2006.

Table 11

Influence of foliar fertilization on the production of genetically modified soybean seeds in 2005

Extra-radicle fertilizing	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	Significance
Not fertilized	3330	100,00	martor	
Folifag	3699	111,11	894,5	***
Basfoliar	3672	110,29	867,2	***

DL 5% = 146,7 kg/ha
DL 1% = 162,2 kg/ha
DL 0.1% = 180,5 kg/ha

In 2005, fertilization of influenced soybean production, the biggest production in variant fertilized with Folifag (3699 kg/ha), table 11, with a difference of 27 kg / ha compared to the fertilized with Basfoliar (3672 kg/ha).

Table 12

Influence of foliar fertilization on the production of genetically modified soybean seeds in 2006

Extra-radicle fertilizing	Seed production (kg/ha)	% compared to Mt.	Difference (kg/ha)	**Significance**
Not fertilized	3130	100,00	martor	
Folifag	3525	112.6	395.0	***
Basfoliar	3315	105.9	185.0	***

Dl 5% = 46,7 kg/ha
Dl 1% = 62,2 kg/ha
Dl 0.1% = 80,5 kg/ha

In 2006 production of the three levels of fertilization (table 12), were lower with yields conparativ obtained in 2004 and 2005. Yields ranged from 3525 kg / ha, the variants fertilized with Folifag and 3130 kg / ha in unfertilized variants.

CONCLUSIONS

1. The classic variety of soybean production has proven to be kind Column in 2005 (3352 kg/ha);

2. Variety AG 0801 in 2006 to realize what the best production of 3630 kg/ha of soybeans;

3. In 2005 it achieved the best production of soybean in extra radicle fertiling on genetically modified soybean varieties.

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