

THE INFLUENCE OF THREE TOMATOES HYBRIDS AND THREE IRRIGATION LEVELS ON THE PRODUCTION, AT THE TOMATOES CULTIVATED IN SOLARIUM AREA, IN THE EXPERIMENTAL YEAR 2007

Adriana HOBAN¹, T. SĂLĂGEAN¹
Sanda SUCIU¹

¹ Agricol Sciences and the Veterinary
Medicine University, Cluj-Napoca
hoban_adrian@yahoo.com

The paper contains the production results of the year 2007, for the tomatoes cultivate in solarium, from the point of view of the influence of the hybrid and irrigation on the production.

The experiences were effectuate with the main to research the behavior of the hybrids: Astona, Falcato and Sprinter, irrigated at the minimum level of the humidity of 50 %, 70 % and 90 % from the active interval of humidity (A.I.H.).

The results are interpret using two statistic methods to obtain the most relevant conclusions. Using the first method of the production results interpretation it was taking as a witness one of the variant. At the influence of the hybrid to the production, it is taking as a witness the Falcato hybrid (H_2), and for the influence of the irrigation to the production, the witness is the irrigation at the medium level of humidity of 70 % from A.I.H. (I_2). The second method, the Duncan Test method, assumed that all the variants are comparing between themselves.

Key words: tomatoes, hybrid, irrigation

MATERIAL AND METHOD

The paper is about three tomato hybrids, cultivate in the solarium area, irrigated at the different level of the humidity from the active interval of humidity (A.I.H.), in year 2007.

To analyze the results we used two statistic methods of interpretation. First method use one witness to interpret the results and the second one is the Duncan Test method. The second method assumed to compare all the variants between themselves.

Using the first statistic method, these three hybrids who are take in study are: Astona, Falcato and Sprinter. The experiences research the production of these three hybrids irrigated at the minimum level of the humidity of 50 %, 70 % and 90 % from the active interval of humidity (A.I.H.).

Table 1

The experimental factors and their graduations

The factors	The combinations
The factor "H" - Hybrid	H ₁ – Astona
	H ₂ – Falcato
	H ₃ – Sprinter
The factor "I" - Irrigation	I ₁ – Irrigated at the minimum level of the humidity of 50 % from (A.I.H.).
	I ₂ – Irrigated at the minimum level of the humidity of 70 % from (A.I.H.).
	I ₃ – Irrigated at the minimum level of the humidity of 90 % from (A.I.H.).

We used two statistical methods of interpretation the production results. We choose both methods to obtain the most relevant conclusions for the tomatoes production, for these three hybrids take in study, from the point of view of the water consumption and the ideal level of irrigation.

Using the first method of the production results interpretation it was taking as a witness one of the experimental variant. From the point of view of the influence of the hybrid to the production, it is taking as a witness the Falcato hybrid (H₂) comparing with the other two production hybrids: Astona (H₁) and Sprinter (H₃). About the influence of the irrigation to the production, the witness is the irrigation at the medium level of humidity of 70 % from A.I.H. (I₂), comparing with the other two irrigation levels: the irrigation at the medium level of humidity of 50 % and 90 % (I₃) from A.I.H.

The second method, the Duncan Test method, assumed that all the variants are comparing between themselves. The second method of interpretation is the Duncan Test. Using this method we obtain the results show in next table. The second method, the Duncan Test method, assumed that all the variants are comparing between themselves. The second method of interpretation is the Duncan Test. Using this method we obtain the results show in next table.

RESULTS AND DISCUSSIONS

The results regarding the hybrid influence on the tomatoes production, in the experimental year 2007, are show in the next table.

Table 2

The hybrid influence on the tomatoes production, in Cluj-Napoca, Someșeni, 2007

Variant	Medium production (t/ha)	Relative production (%)	± d (t/ha)	The signification of the difference
H ₂ (Falcato)	63,83	100,0	–	Mt.
H ₁ (Astona)	72,83	114,1	9,00	***
H ₃ (Sprinter)	59,43	93,1	– 4,40	ooo

DL 5%	=	1,30
DL 1%	=	1,97
DL 0,1%	=	3,17

Compare with the witness, the variant H₂ (the hybrid Falcato), the variant H₁, the hybrid Astona, it obtains a spore of production very superior significant (72,83 t/ha). The variant H₃, the hybrid Sprinter, it obtains a production very significant inferior comparing with the wetness.

The influence of the hybrid on the tomatoes productions, in the year 2007, is representing graphically in the next figure.

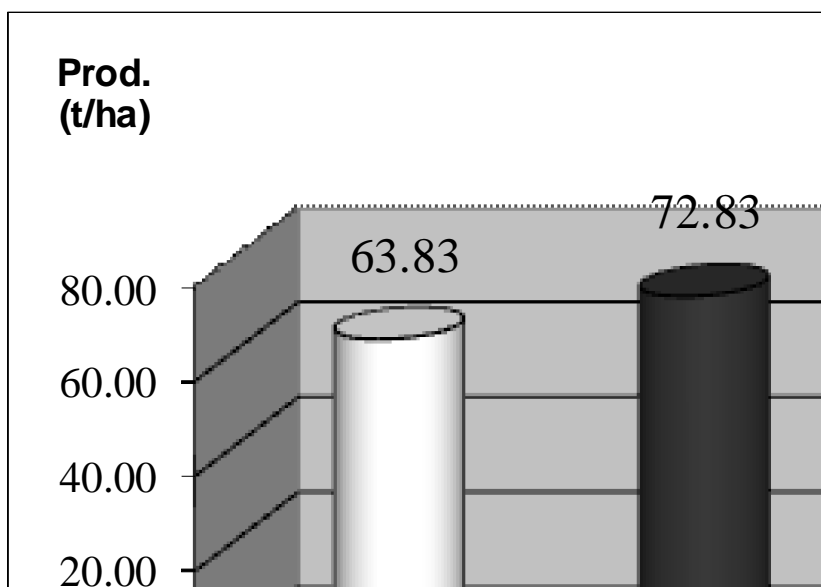


Figure 1 The hybrid influence on the solarium tomatoes production (Cluj-Napoca, Someșeni, 2007)

From the point of view of the irrigation influence on the tomatoes production, the researches shows that are some influence, regarding the results.

In the next table are the results of the productions, influenced by the irrigation level.

Table 3

The irrigation influence on the tomatoes production, in 2007

Variant	Medium production (t/ha)	Relative production (%)	$\pm d$ (t/ha)	Signification of the difference
I ₂ (70 % from A.I.H.)	67,77	100,0	–	Mt.
I ₁ (50 % from A.I.H.)	62,53	92,3	– 5,23	ooo
I ₃ (90 % from A.I.H.)	65,80	97,1	– 1,97	oo

DL 5%	=	1,12
DL 1%	=	1,54
DL 0,1%	=	2,09

The variant I₁, the irrigation at the minimum level of humidity of 50 % from A.I.H., comparing with the witness, the variant I₁, it has a very significant influence in negative way on the production (62,53 t/ha).

The variant I₃, the irrigation at the minimum level of humidity of 90 % from A.I.H. (65,80 t/ha), it has a distinct significant influence on the tomatoes production, in negative way, comparing with the wetness.

The figure below represents the influence of the irrigation on the tomatoes production in solarium area, in 2007.

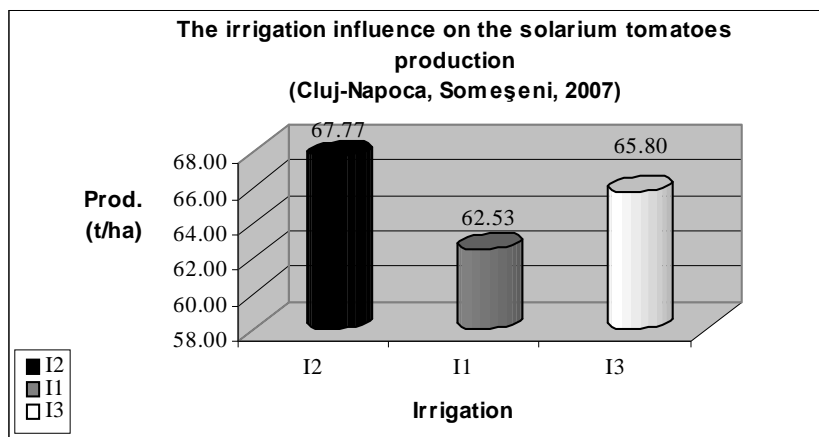


Figure 2 The irrigation influence on the solarium tomatoes production (Cluj-Napoca, Someșeni, 2007)

The second statistic method, the Duncan Test method, assumed that all the variants are comparing between themselves. Using this method we obtain the results show in next table.

Table 4

The difference of the variants and the signification between themselves at the tomatoes production, in Cluj-Napoca, Someșeni, 2007									
Var.	Medium production (t/ha)	Varianta și producția (t/ha)							
		2 58,60	3 61,50	4 62,70	5 63,20	6 66,80	7 69,10	8 72,00	9 77,40
I ₁ H ₃	57,00	1,60	4,50*	5,70*	6,20*	9,80*	12,10*	15,00*	20,40*
I ₃ H ₃	58,60	-	2,90	4,10*	4,60*	8,20*	10,50*	13,40*	18,80*
I ₁ H ₂	61,50	-	-	1,20	1,70	5,30*	7,60*	10,50*	15,90*
I ₂ H ₃	62,70	-	-	-	0,50	4,10*	6,40*	9,30*	14,70*
I ₂ H ₂	63,20	-	-	-	-	3,60*	5,90*	8,80*	14,20*
I ₃ H ₂	66,80	-	-	-	-	-	2,30	5,20*	10,60*
I ₁ H ₁	69,10	-	-	-	-	-	-	2,90	8,30*
I ₃ H ₁	72,00	-	-	-	-	-	-	-	5,40*
I ₂ H ₁	77,40	-	-	-	-	-	-	-	-

The DS 5% values for different limits of the compare between variants

Nr. of variants include between the compare limits	2	3	4	5	6	7	8	9
q 5%	2,97	3,12	3,21	3,27	3,32	3,36	3,38	3,41
s _d (t/ha)	0,65							

CONCLUSIONS

This paper represents the researchers from year 2007, of the tomatoes culture grow in solarium area.

Concorde with the experiences, the productions of the tomatoes grow in solarium area were influence by the hybrid, obtain the fallow productions: the Astona hybrid (72,83 t/ha) it influence very significant superior production, bringing plus on it, compare with the witness. Sprinter hybrid (59,43 t/ha) influence inferior significant the production compare with Falcato hybrid, taking as a witness (63,83 t/ha). The Falcato hybrid production was taking as a witness, to compare with the other two hybrids productions. The production of the Astona hybrid obtain 72,83 t/ha tomatoes, in 2007, and was the largest production from the point of view of the irrigation influence. And the production of the Sprinter hybrid obtain the lowest production 59,43 t/ha.

From the point of view of the irrigation influence, the tomatoes productions, both irrigations 50 % (62,53 t/ha) and 90 % (65,80 t/ha) from A.I.H., were influence negative. The influence of the irrigation at the minimum level of 50 % from A.I.H. on the tomatoes production was very significant, compare with the witness. The influence was significant at the variant of irrigation at the minimum level of 90 % from A.I.H., compare with the witness. The witness was take the tomatoes production irrigate at the minimum level of 70 % from A.I.H. in solarium area, with a production of 67,77 t/ha. The production of the witness was the largest production from all three variants.

The conclusions are that:

The hybrid Astona had the best influence on the tomatoes production grow in solarium, in the experimental year 2007, in Someșeni, Cluj-Napoca city.

The irrigation at the minimum level of 70 % from A.I.H. had the best influence on the tomatoes production in the experimental year 2007, in Someșeni, Cluj-Napoca city.

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