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**INFLUENCE OF THE BACTERIA OF GENUS PSEUDOMONAS  
ON TOMATO SEED SOWING CHARACTERISTICS**

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The question of ecologically pure food production is actual in conditions of environmental degradation. The exception of the chemicals' use is necessary for obtain ecologically pure food products. The processing of tomato seeds (as a valuable food crop) by biological agents permits to reduce the use of pesticides. The purpose of the research was to study the effect of the bacterium of genus *Pseudomonas* on sowing characteristics of tomato seeds.

The objects of our study were three sorts of tomatoes: Volgogradsky, Mobil, Novatok. We treated tomato seeds liquid cultures of bacteria species *Pseudomonas aureofaciens* strain A-2, UCM B-109, UKM B-111 and *Pseudomonas fluorescens* strain AP-33. The bacterial cultures were grown at beef-extract broth during the 48 hours at 27 degrees above zero. The control seeds were treated by drinking water. 150 seeds of each sort on each bacterial strain have been studied.

Tomato seeds were treated by bacterial cultures during the 24 hours and placed in sterile Petri dish with filter paper. The germination of seeds was

carried out in a thermostat at the temperature of 25°C. We have determined the germination energy on the sixth day of research. Then the Petri dishes were placed in thermostatic room with the temperature of 25 degrees above zero. Germination capacity was calculated on the 12 day. We measured the length of the seedling roots at the same time.

Table 1

Influence of the bacteria of genus *Pseudomonas* on tomato seed sowing characteristics

Variant of treatment	Germination, %			Germination capacity, %		
	Tomato sort			Tomato sort		
	Volgogradsky	Mobil	Novatok	Volgogradsky	Mobil	Novatok
A-2	67,2±2,5	70,0±4,5	1	68,1±4,0	68,0±3,9	3,2
B-109	68,3±3,3	64,3±3,7	4	72,0±3,6	63,5±3,5	5,0
B-111	55,4±3,6	70,0±3,5	5	67,5±4,2	61,5±2,8	9,0
AP-33	64,2±2,6	56,5±3,8	5	66,4±3,4	57,3±2,7	8,9
H <sub>2</sub> O	66,1±2,8	66,8±2,6	3	63,6±2,5	61,4±3,1	1,2

Table 2

Influence of the bacteria of genus *Pseudomonas* on length of the seedling roots

Variant of treatment	The length of the seedling roots after 6 days, cm			The length of the seedling roots after 12 days, cm		
	Tomato sort			Tomato sort		
	Volgogradsky	Mobil	Novatok	Volgogradsky	Mobil	Novatok
A-2	2,9±0,2	2,5±0,3	0,1	4,9±0,3	3,5±0,2	0,3
B-109	4,6±0,3	3,2±0,3	0,1	6,1±0,5	4,4±0,3	0,3
B-111	4,4±0,5	3,3±0,2	0,2	5,3±0,4	4,4±0,3	0,4
AP-33	5,0±0,4	2,5±0,3	0,1	6,8±0,5	4,7±0,5	0,2
H <sub>2</sub> O	4,9±0,2	4,0±0,5	0,4	7,0±0,5	7,2±0,9	0,6

It was found out that the germination energy and germination capacity increased in the almost all variants of seed processing. The seed germination energy increased to 10% and germination capacity - 7%. Sort Volgogradsky shown especially good results. We also noted that the well-developed root hairs were in seedlings treated of B-109, B-111 and A-2. They improve plant nutrition as the result of increasing the absorptive surface of the roots. Novatchok has shown unsatisfactory results, because seeds were infected by fungal phytopathogen. Probably the seeds were not saved correctly. That is why we did not get reliable results of this sort.

The author would like to thank the supervisors for help!