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Title: **INFLUENCE OF THE ECOLOGICAL FACTOR ON ROT DISEASE OF COTTON PLANT**

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INFLUENCE OF THE ECOLOGICAL FACTOR ON ROT DISEASE OF COTTON PLANT

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Abstract: This article is focused on the influence of ecological factors on the tolerance of cotton plants to rot diseases. The method of sowing cotton seeds discussed in the article does not only influence on the tolerance of the plant to diseases but also increases the fertility of the crop, besides the method discussed below is considered to be both cheap and ecologically effective. This article is based on field experiments carried out on sowing cotton seeds, their results and conclusions made upon them.

Keywords: 80C hot water, cotton seed, budding, root rotting, growth, development, fertility, conclusion.

Introduction

The Republic of Uzbekistan occupies a leading place in gaining cotton harvest among independent countries. Nevertheless, today gained harvest does not meet the requirements. Since, a part of the harvest is lost due to pesticides and diseases increasing the harvest are the main task of today. For this, high harvest is gained from healthy plants due to carrying out the measures on time. It is known from cotton science that application of agro technical measures is not enough to increase the harvest. First of all, it is important to sow the seeds in rotation, plugging the land in 30-40 cm depth, processing the seeds with chemical substances against disease pesticides and carrying out planned sowing under polyethylene in a well processed field when the weather is good. Sowing should be planned in such way that full hectare of harvest from young plants is gained in a short period of time. For this, it is recommended to sow such a plant sort that gives high harvest. Andijan-35, Andijan-36, 37 sorts grown in Oltinkul, Balikchi, Pakhtaabad regions can be good examples to this. Nevertheless, today, due to applying the achievements of science by the heads of leading farmers, high cotton harvest is gained successfully. Taking all these into consideration, we carried out field experiments in conditions of educational experimental farms of Andijan agriculture and agro technologies

Institute. The experiment was organized by the following scheme.

Experiment scheme

Experiment versions	
1 Control	-
2 Zerebro seed, Etalon	0.4-0.6 l/t
3 Cotton seeds are held	In 80° hot water for a minute
4 Cotton seeds are held	In 80° hot water for 1.5 minutes

The seeds of the 3rd and 4th versions were kept in 80 liters of hot water for 1 minute and the seeds of the 4 version were kept for 1.5 minutes. The reason for this is that the advantages of seeds were compared to the etalon version. The experiment consisted of 4 repetitions and 4 versions. Seeding works were accomplished in convenient dates of the weather. In 7 days after seeding the seeds of the 3rd version started to bud. The seeds of the 1st and 2nd versions sown at the same date were late for 2 days. Or in other words, in the 3rd version budding composed 88.3 % and in the control version this index composed 78.3 %. It is important to regard that when the seeds were kept in 80 C hot water for 1.5 minutes, the hot water spoilt all the seeds. The carried experiment is described in Table 1.

Influence of pure ecological environment on seed budding and root rotting disease.

Table 1

Experiment versions	The percentage of young plants budded in squares	The number of plants diseased with rot disease	Biological effectiveness
Control	76.9	23.4	30.4
Zerebro seed	86.3	12.1	14.0
When kept in 80C of hot water for 1 minute	89.7	3.7	4.1
When kept in 80C of hot water for 1.5 minutes	32.4	1.8	5.5

Note: since all the seeds of the 4th version were lost when kept in hot water for 1.5 minutes, on April 24 common seeds were sown again. As it is seen from the gained results, seeds budding process was differently, for example: 76.9 % of the seeds were budded in the control version. In other versions as 3 and 4 this index varied from 86.3 thousand/ha up to 89.7 thousand/ha or from 9.4 up to 12.8 % more than budding process in most of the squares in the control version. Cotton rot disease is considered to be one of the most dangerous diseases in cotton growing, one should take such a measure that, it would result in the decrease of the reserve of disease causatives in the soil by creating new ecological environment. For this, by taking developed

measures of fighting against the pathogen, the thickness of young plants would be preserved. By sowing any sort of the cotton plant in one and the same field, the tolerance of the plant to the disease falls. That is why it is required to sow the seeds in a rotation way so that to increase the tolerance of plants to diseases. Therefore it is important to regard that by sowing one sort of cotton plant in one field continuously the tolerance of this sort of plant to diseases decreases. By creating pure ecological environment for the cotton sorts tolerant to diseases in impaired fields will create the opportunity to increase their tolerance to diseases. As it is seen from the references given in Table 2, when the seeds were kept in 80C hot water for 1 minute before sowing, the degree of getting diseased with rot diseases of the seeds was equal to 3.7% on May 6. The index of the cotton plants in the control version composed 23.4% on the same date. We can conclude from it that one can achieve budding of cotton seeds 2-3 days earlier when the seeds are kept in 80C hot water for 1 minute. Moreover it resulted in the increase of the tolerance to root rotting diseases to 7-8 times than the cotton plants in the control version.

Influence of pure ecological environment on the growth and development of cotton plant seeds

Table 2

Experimental versions	Plant sickness (thousand/ha)	Height of the growing branch of cotton plant (cm)	Number of cotton bolls	Fertility c/ha	Weight of one cotton boll (g)
Control	79.7	78.6	9.3	28.7	3.4
Zerebro seed etalon	82.4	86.2	11.5	31.2	4.6
When kept in 80C hot water for 1 minute	84.1	87.9	12.1	32.5	4.9
When kept in 80C hot water for 1.5 minutes	90.7	59.6	4.4	18.6	3.0

NOTE: when the seeds in the 4th version were kept in hot water for 1.5 minutes, they all were spoilt. Due to the gained references we know that the purer ecological environment was create for the plants when they were sown again, the more new morphological signs appeared in them. Along with this the new appeared features resulted in the growth,

development, increase of the tolerance to diseases and high fertility of plants. This is seen in the example of our experiment. As it is known from the given table 3:

Influence of pure ecological environment on the fertility of cotton plant when it effects on the seeds.

Table 3

Experiment versions	Repetitions				Crop from the average 4 repetitions c/ha	Due to the control version c/ha	Weight of one cotton boll (g).	Weight of 1000 seeds(g).
	1	2	3	4				
Control	28.2	30.5	27.1	28.0	28.4	-	3.2	96.2
Zerebto seed etalon	31,1	31,5	29,0	29,2	30,2	+1.8	3,6	98,5
When kept in 80C hot water for 1 minute	31,6	31,9	32,3	31,2	31,7	+3,3	4,1	105,3
When kept in 80C hot water for 1.5 minutes	20,1	17,5	18,8	18,4	-18,7	18,7	2,9	76,4

The main crop was gathered in the first gathering, the most crop was gained from the 3rd version. In this version, 3.3c/ha more crop was gathered from cotton plants than in the control version. In the etalon version, this index showed 1.8 more crop than in the control version. The best index of the weight of one cotton boll was registered in the 3rd version, the weight of cotton bolls in this version is characterized with being heavier to 0.9 g, this kind of index was registered in the etalon version, i.e. if it differed to 0.4 g, the best index of the weight of 1000 pieces of cotton seeds was observed in the cotton plants of the 3rd version, i.e. it was heavier to 9.1g, in the etalon version this index differed to 2.3 g.

As a conclusion we can say that, first of all, by keeping the seeds in 80C hot water for 1 minute, in the result of early budding of fetus in the content of the seed, the seed budding occurs 2-3 days earlier than the control version. Along with this, we consider this method to be cheap and convenient. Secondly, we can achieve the formation of full hectares in the fields during a short period of time in the result of fast awakening of fetus in the seed content by keeping the seeds in 80C hot water for 1 minute before

sowing. Along with this, it will result in acceleration of the growth and development of plants to 2-3 times comparatively to the control version.

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