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Perspective Efficiency of Local Defoliants in “Termiz-202” Cotton

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Abstract

The article states that in order to obtain a high and high-quality yield of raw cotton of the fine-stapled cotton variety "Termez-202", the defoliants Liquid-KhMD and Avguron-extra were used with the rates of 9.0 l / ha and 0.250 l / ha with opening of bolls 45-50%, where a high yield of raw cotton was achieved 30.6-32.6 c / ha, which is 2.8-4.8 c / ha higher compared to the control option.

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Introduction. As is known in recent years as a result of the creation by scientists of the early-maturing varieties field of cotton suitable for each soil and climatic conditions and the cotton defoliation in most areas, along with all agro-measures in cotton fields every year the cotton crop is harvested in the first half of October.

The next time the spring season lasts longer, delay of rainy and cold days until summer and early arrival of rainy cold days in autumn has a major impact on the cotton growth and development. Unfavorable weather in autumn delaying the ripening of most cotton varieties and this leads to a decline in yield. In such cases, chemical defoliants are used before the start of the harvest season to speed up the crop ripening. Based on the above considerations, in the southern regions taking into account the biological characteristics of fine-fiber cotton varieties the chemical properties of the defoliants applied, the norms development, duration and methods of application are relevant.

One of the practical defoliation aspects in a cotton plant is these cotton stalks maturation, the opening speed, and the increase in the first crop weight. Cotton yields vary depending on many factors, including irrigation regime, seedling thickness, feeding regimens, and the type and norms of defoliants used [2].

T.Zokirov, I.Rakhmatov's experiments (1971) on fine-fiber cotton defoliation in 1969-1970 in Kashkadarya region, chlorate magnesium defoliant at 16 kg/ha and calcium chlorate-chloride at 30 kg/ha were found to be effective when 4-5 cotton balls were opened [3].

M.Turaev, O.Naimov, B.Rakhmatov in their scientific research (1989) found that defoliation of fine-fiber Ashgabat-25 and C-6037 cotton varieties in cotton stalks 45-50%, the fast-ripening Termez-14 variety is the most optimal time when 50-55% cotton balls are opened in the cotton bush or when the youngest cotton balls are 40-45 days old [4].

It is known that cotton defoliation, along with ensuring leaf shedding, accelerates the opening of cotton balls and increases the first harvest weight, allowing to harvest most of the crop without cold and rainy days, ensuring high industrial quality of raw materials [5].

Based on the above considerations, research to study the local defoliants effectiveness in cotton was conducted in 2020.

Research methodology: The research was conducted on the basis of the manual "Methods of conducting field experiments" [1]. The experiment consisted of 14 variants and was repeated in 3 repetitions. The total area of the experimental options was 2016 m^2.

The study examined the effect of “Termez-202” fine-fiber cotton cultivar grown in the conditions of grazing soils of Surkhandarya region on productivity using different norms of local Liquid-XMD and Avguron-extra defoliants at 45-50% of cotton balls.

Definition of used defoliants. Liquid chlorate-magnesium defoliant - a pale yellow liquid, odorless substance, containing 36-43% of the active substance, is less toxic to warm-blooded people. The action mechanism is similar to that chlorate-magnesium in the crystalline salt form. Chemical formula Mg(ClO3)2+6H2O.

Avguron-extra – Avguron-extra defoliant is a white, distinctive, low-toxic defoliant containing 360 mg/kg tidiazuran and 120 mg/kg diuran. It is recommended to use Avguron-extra defoliant in the amount of only 100-200 ml/ha, which is a very small amount. Therefore, strict adherence to the following is required when using this defoliant.

“Termez-202” fine-fiber cotton variety –Surkhandarya ITS was created by Kh.D. Chorieva, A.A.Yangiboev, M.N.Tojiev, S.M.Boltaev and etc. 6608-B x Termez-11 varieties have been crossbred and selected for many years. “Termez-202” cotton belongs to the medium-ripe varieties group. The crop ripens in 117-118 days.The cotton balls of the variety open well at a fast pace. The cotton in the bowls does not spill. The fiber is white, the weight of a cotton ball cotton is 3.4-3.5 g. Fiber length is 39,2 mm, fiber output is 36,8%, weight of 1000 seeds is

117-120 g. The metric number of the fiber is 7340, fiber toughness is 4,5 g.k, relative break is 31,4 gk/tex, fiber type is II, fiber microneir is 4,2-4,3.

Research results: According to the observations, the cotton fiber yield "Termiz-202" was 27.8 s/ha from the control variant without defoliation at the cotton balls opening 45-50%, Liquid-XMD defoliant is 30.6 s/ha when used at 9.0l/ha, 2.8 s/ha compared to control, the yield was 32.6 s/ha when the Avguron-extra defoliant was applied at 0.250 l/ha, and 4.8 s/ha compared to the control variant (Table 1).

Conclusion. Based on the study results, the soil and climatic conditions of Surkhandarya region when determining the fine-fiber effectiveness "Termez-202" cotton navigation using different standards of local Liquid-XMD and Avguron-extra defoliants in the opening period of cotton balls 45-50%, including cotton cotton balls 45-50% in the opening period Liquid-XMD-9.0 l/ha and Avguron-extra-0.250 l/ha in the normally used variants cotton yield 30.6-32.6 s/ha, respectively, compared to the control variant increased to 2.8–4.8s/ha.

Table 1

Productivity of the studied fine-fiber cotton variety, s/ha (Surkhandarya region, 2020).

№	Name of defoliants	norm l/ga	Returns			Average yield	The difference from control
			I	II	III		
When 45-50% cotton score is opened							
1	Control -	-	29,1	25,6	28,7	27,8	-
2	Liquid-XMD	8,0	30,4	30,7	31,8	31,0	3,2
3	Liquid-XMD	9,0	28,7	32,1	30,9	30,6	2,8
4	Liquid-XMD	10,0	29,2	28,7	32,1	30,0	2,2
5	Avguron-extra	0,200	28,3	30,2	28,7	29,1	1,3
6	Avguron-extra	0,250	32,6	31,8	33,3	32,6	4,8
7	Avguron-extra	0,300	28,1	29,3	29,6	29,0	1,2

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