AJEMA GLOBAL RESEARCH NETWORK

AMERICAN Journal of Engineering, Mechanics and Architecture
Volume 2, Issue 6, 2024 ISSN (E): 2993-2637

Effects of Defoliants on Seed Germination in Relation to Weeding Periods and Irrigation Regimes

Ochildiyev Najmiddin Narbayevich
q.x.f.f.d., head of the laboratory

Raxmonov Shoxrux Ubaydullo o'g'li
q.x.f.f.d., senior researcher

Chariyeva Yulduz Panjiyevna
Junior researcher of the Scientific Research Institute of Fine Fiber Cotton

Abstract: It is revealed that at irrigation scheduling and the methods of topping work on fatness of seeds cotton of a grade “Zarafshan”. At application defoliants UzDEF and PoliDEF fatness of seeds raises in comparison with defoliants LiquidXMD and without the use of de defoliation.

It is known that one of the main crops grown in our country is cotton. Although cotton is not an oilseed, 17-22% oil is obtained from its seed and it is widely used in the national economy for food and technical purposes. The change in the amount of oil in the seed depends on the characteristics of cotton varieties, as well as many other external factors and agrotechnical measures. Therefore, science should not only increase cotton productivity, but also improve seed quality. From this point of view, it is urgent to carry out scientific research on the effect of agrotechnical measures on seed fertility.

A.M. Grodzinsky stated that he came to the conclusion that the seeds store nutrients and physiologically active substances in order to withstand adverse conditions and for the development of embryos. In turn, weeding and defoliation agro-measures accelerate the ripening of cotton bolls and lead to acceleration of physiological processes [1].

Based on the above ideas, taking into account the effect of agro-measures carried out in cotton on seed fertility, studies were conducted on the effect of defoliants on seed fertility in the Zarafshan cotton variety in the conditions of meadow-gray soils of Samarkand region (2018-2020), depending on the duration of different watering and weeding.

Researches were carried out based on the manual "Methods of conducting field experiments" (2007) adopted at UzPITI [2], and the obtained results were analyzed mathematically and statistically according to the method of B.A. Dospehov "Metodokiya polevogo opyta" (1985) [3].

In the experiments, we analyzed the interaction of defoliant standards, irrigation methods, and weeding periods on the seed quality of the next year's spring, after harvesting cotton every year.

The agro-measures of chilpish in cotton were carried out in the 12-13 harvest kingdoms (1-16), the irrigation procedures were determined as 65-70-60% of ChDNS (1-8 var) and the seed moisture content was 20.8; 21.0; It was 19.1%. It should be noted that the seed quality of the seed improved from the 3rd harvest branch to the 6th one, and it was observed that it slightly decreased again in the 9th one.

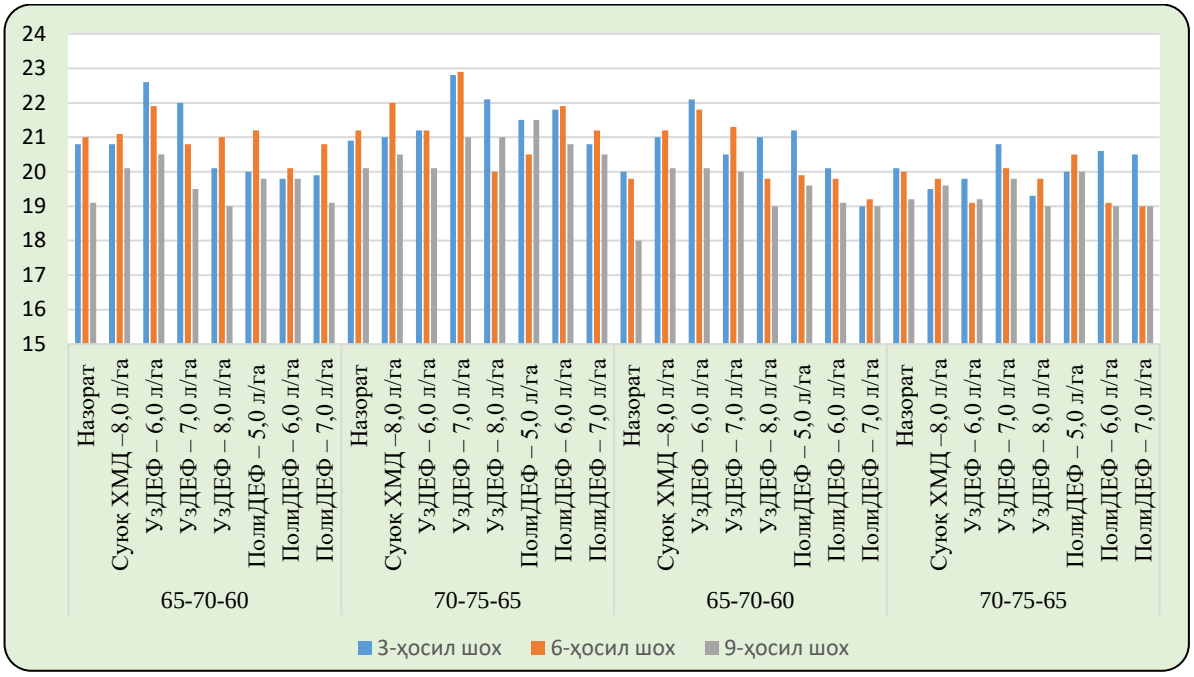

Figure 1. Effects of defoliants on seed germination as a function of watering patterns and weeding timing, 2019

Under these conditions, relatively acceptable indicators are taken from the UzDEF defoliant norm of 6.0 l/ha, 22.6 in proportion to the crop branches; 21.9 and 20.5% and 1.8 from the control; 0.9; It was found to be higher by 1.4%. Also, higher than the norm of 5.0 l/ha of PoliDEF defoliant, the seed oil content is 20.0; 21.2; It was 19.8%. 0.6 of these indicators compared to option 3; 0.7; It was analyzed that it was less than 0.7%.

In the control of variants (9-16) with watering procedures of 70-75-65% of ChDNS, moisture content is 20.9; 21.2; 20.1%, when the irrigation method is 65-70-60% of ChDNS (1) 0.1 compared to the control option; 0.2; It was higher by 1.0%. So, it is observed that with the change of irrigation methods, the moisture content of the seed in its natural state also improves.

Under these conditions, with higher values of UzDEF defoliant than the norm of 7.0 l/ha, the seed oil content is 22.8 in proportion to the crop branches; 22.9; 21.0%, 1.9 from the control; 1.7; by 0.9%, and 0.2 compared to the indicators of the parallel 3rd option when the irrigation method is 65-70-60% of ChDNS; 1.0; It differed by 0.5%. Under the influence of PoliDEF defoliant at the rate of 6.0 l/ha, the seed oil content is 21.8; 21.9; 20.8%, proportionally 0.9% of the control; 0.7; 0.7% higher, but 1.0 of the norm of UzDEF of 7.0 l/ha compared to the control; 1.0; It was found to be less than 0.2%.

Chilpish agrooperation was carried out in cotton in 14-15 harvest kingdom and irrigation regimes were set as 65-70-60% of ChDNS (17-24) in the control of options, seed moisture content was 20.0; 19.8; Making up 18.0%, Chilpish cotton is 0.8 compared to the parallel (1) option conducted in the 12-13 harvest kingdom; 1.2; It was found to be 1.1% less. Under these conditions, relatively acceptable indicators were obtained in the variant (19) where UzDEF defoliant was used at the rate of 6.0 l/ha, and proportionally 22.1; 21.8; 20.1%, the percentage of control is 2.1; 2.0; It was analyzed that it was higher by 2.1%.

Relatively higher values were obtained from the standard of 5.0 l/ha of PoliDEF defoliant, and the seed oil content was 21.2; 19.9; Making up 19.6%, the fat content is 1.2 more than the control; 0.1; 1.6% higher, but 0.9 due to the influence of UzDEF norm of 6.0 l/ha; 1.9; It was 0.5% less.

In the control of the options (25-32) where irrigation procedures are set to 70-75-65% of ChDNS, the above indicators are proportionately 20.1; 20.0; It is 19.2%, the fat content is 0.1 compared to option 17; 0.2; It was observed that it was higher by 1.2%.

In these conditions, relatively high indicators were obtained from the effect of UzDEF defoliant at the rate of 7.0 l/ha, and the seed moisture content was 20.8 in proportion to the yield; 20.1; 19.8%, 0.7% of the control; 0.1; 0.6% higher, but 2.0 compared to the parallel (12) option, when chilpish is carried out in the 12-13th harvest season; 2.8; It was 1.2% less. Similar patterns were observed for the effect of PoliDEF defoliant at a rate of 6.0 l/ha. So, the used defoliants improved the quality of the seeds, i.e., the oiliness of the seed, regardless of the watering procedures and the duration of the weeding.

REFERENCES:

1. Grodzinsky A.M., Grodzinsky D.M. A short reference book on plant physiology//Defoliants and Desiccants. – Kyiv: Naukova Dumka, 1964. -322 p.
2. Methods of conducting field experiments. UzPITI-Tashkent, 2007.–P. 145.
3. Dospehov B. Methodology of field experience. Moscow. 1985. –P. 268-285.