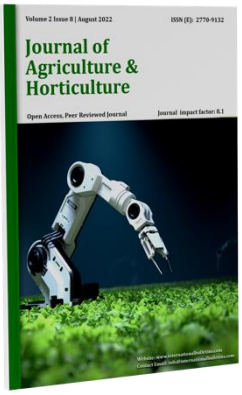

REPEATED DEFOLIATION AND DESICCATION OF COTTON

Ataniyazov A.S.
Mechanization of agriculture
Head of Laboratory
Sultanbayov Sh.A.
Mechanization of agriculture
Laboratory researcher
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Abstract: For the defoliation of medium-staple cotton varieties, butiphos, calcium chlorate-chloride, and magnesium chlorate are used, while for fine-staple cotton varieties, only calcium chlorate-chloride and magnesium chlorate are employed.

Keywords: Defoliation and desiccation are of great importance in the implementation of comprehensive mechanization in cotton growing.

The use of defoliants for cotton defoliation provides a profit of up to 30 soums per hectare, and with machine harvesting - up to 150 soums. In addition, the early completion of the harvest will allow for the best timing of autumn-winter work and create a solid foundation for a bountiful harvest next year. Thanks to timely autumn plowing, the yield may increase by 2-4 centners per hectare next year. Chemicals used for defoliation and desiccation also eliminate pests present in cotton fields.

According to SoyuzNIXI data, timely and high-quality defoliation accelerates boll maturation and opening by 10-15% after 12 days. The accelerated boll opening leads to a significant change in the assortment of harvested crop varieties and an increase in the yield of first and second-grade cotton. The main part of the harvest can be gathered under favorable weather conditions.

Cotton fields undergoing defoliation are expanding year by year. For example, in Uzbekistan, 75 thousand hectares of cotton were defoliated in 1950, in 1960 this figure increased to 576 thousand hectares, and in 1970 - to 2237 thousand hectares. In 1978, 4,390 tons of butifos, 11,746 tons of calcium chlorate-chloride, and 11,397 tons of magnesium chlorate were used for defoliation; a record amount of defoliation was carried out on 2,705,000 hectares, and desiccation on 88,000 hectares.

However, these figures show that many fields still have to be re-treated.

This is the result of poor-quality defoliation in some farms.

The spring of 1979 was unfavorable for the formation of dense cotton seedlings. Nevertheless, the cotton growers of our republic produced a rich harvest. However, the cotton plants are not evenly distributed everywhere, and their height is not the same. Therefore, we consider it important to draw the attention of agricultural specialists to issues related to the quality of defoliation and desiccation.

Defoliation of medium-fiber cotton varieties is recommended to begin when most cotton plants in the northern cotton-growing regions have 2 bolls, in the central regions 2-3 bolls, and in the southern regions 3 bolls.

In high-yielding fields, when autumn is warm, defoliation can be delayed until one more boll opens.

Fine-fiber cotton should be defoliated when 4-5 or more bolls open.

For medium-fiber cotton defoliation, butyphos, calcium chlorate-chloride, and magnesium chlorate are used, while for fine-fiber cotton, only calcium chlorate-chloride and magnesium chlorate are used.

7-8 days after defoliation, this work is repeated in fields where 65-70 percent of cotton leaves have not fallen. In this case, it is necessary to pay attention to the use of calcium chlorate-chloride or magnesium chlorate during repeated cultivation in fields where butifos was previously used, and only magnesium chlorate when calcium chlorate-chloride is used for the first time.

Depending on the growth and development of cotton, its thickness, varietal characteristics, leaf surface, availability of mineral and organic fertilizers, the last feeding period, soil moisture, and average daily air temperature, 2-3 kg of butifos is used per hectare, 20-24 kg of calcium chlorate-chloride for medium-fiber varieties, 26-30 kg for fine-fiber varieties, and 10-12 kg and 15-17 kg of magnesium chlorate respectively.

Cotton that is underdeveloped, not ready for defoliation, as well as strongly developed, with many green bolls but not opened, is desiccated. Conducting desiccation against the background of defoliation ensures even greater leaf drop and an increase in bolls by up to 90 percent.

During desiccation, 25-30 kilograms of magnesium chlorate-chloride or 40-45 kilograms of calcium chlorate-chloride are used per hectare for medium-fiber cotton varieties, and 30-35 kilograms of magnesium chlorate for fine-fiber cotton varieties.

However, it should be noted that the range of defoliants is extremely limited, which does not always allow their selective use, taking into account cotton varieties, agrotechnical, ecological, and soil-climatic conditions.

Therefore, work is underway to search for and test new drugs such as dropp, etrel, hydrel, kampozan, alpha-M, and others. Recently, research on determining the effectiveness of dropp, alpha-M, hydrel, and its mixture with butylcaptax has been successfully conducted at the SoyuzNIKHI and its Kashkadarya branch. A small amount of dropp (5904-I) yielded high results in fine-fiber cotton fields. At an application rate of 8 kg/ha of the Alpha-M preparation, the leaves of the "Tashkent-1" cotton variety fell well, and at an application rate of 11-14 kg/ha, the fine-fiber cotton varieties "5904-I," "Termiz-7," "Termiz-9," "S-6036," "S-6037" and "Surkhan-2" fell well. In experiments conducted on small plots, the application of 4 kg of hydrel mixture per hectare yielded the highest effect on fine-fiber cotton.

References:

1.Kurvantaev R.K. Плотность сложения почвы и урожай хлопчатника (Soil structure compression and cotton harvest).-Tashkent.: RTsNTI «Uzinformagroprom».-1991.-88 p.
2.Muhamedjanov M.V. В ответе за землю (In response for land) // Mehnat Tashkent.-1987.-P. 10…13.
3.Kaipov M.U. Substantiation of main parameters of track-loosen scrater to cultivating tractors. Dissertation of candidate of technical sciences. -Yangiyul.- 2002, -P. 101…107.