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Methods Of Applying Herbicides Against Weeds Around The Field

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Annotation. *The article identifies the harmful effects of herbicides on weeds around the field by determining the degree of herbicide effect for each species, specifically determining the dosage of preparations based on weed species and development conditions, and recommending control measures.*
Key words. *Plant, abiotic, weeds, control, vegetables, herbicides, annual plants, perennial plants.*

Introduction

It has been determined that weeds spread to agricultural crop fields mainly from areas where they grow more abundantly around the fields. Therefore, it has been determined that it is advisable to eliminate weeds in these locations first, and it has been confirmed that measures for the use of herbicides against weeds should be carried out more in these locations. Because, as mentioned above, glyphosate, an active herbicide, has a potent toxic effect on all plant species. It is known that when used in fields during the initial growth and development period of the growing season, it completely destroys all plant species.

Taking this into account, the types of weeds that have appeared around the fields of cotton and vegetable and melon crops in the observed districts, as well as the bioecology of their development, were taken into account.

Experimental methods.

The determination of weed species was carried out according to Seypullayev's [2016] method. Scientific research was conducted, the results of which were subjected to dispersion analysis, and mathematical statistical processing was carried out according to the method of B.A. Dospekhov (1986).

Experimental results: Around the fields, close to areas where cultivated crops are growing, there have been areas where weeds have been growing for several years, with the main species being licorice, camel thorn, and reed. Among annual plants, several varieties of sorghum have been identified. There has also been sedimentation along the irrigation ditches.

As a continuation of the established long-term scientific research (such experiments were conducted by A. Khojaniyazov (2016)), during the initial developmental phases of sorghum, when the height of licorice and reeds reached 20-30 cm, i.e., on the third day of April, characteristic of the current year, the types of weeds in these areas were determined, and various doses of the preparations Uragan forte and Intoglifos were prepared according to the established method using OVX-28 units mounted on tractors.

For this, the number, species, and phases of the weeds distributed per 1 m2 were thoroughly determined in advance, and then treated with preparations using special sprayers.

To determine the biological effectiveness of herbicides, special observations were conducted on the 10th day after spraying the solution to account for cases of yellowing and complete destruction of weeds in the field. These observations, namely the effects on weeds in the experimental fields, were carried out on the 30th day after the use of herbicides.

In experiments conducted in this regard, to determine the biological effectiveness of herbicides, nearby fields with the same species and number of weeds were identified, and observations were also carried out simultaneously in the uncultivated field as a control, and the number of weeds was recorded on the indicated days. In this process, the presence of perennial weeds such as field bindweed, reed, barnyard grass, couch grass, camel thorn, and annual weeds such as honeysuckle, sorghum, wheatgrass, and honeysuckle was determined, and the degree of their influence on each was taken into account, depending on their morphological changes.

The effect of the selected amount of herbicide on the types of weeds growing in the fields, starting from the 10th day after sowing, indicates that mainly annual weeds have stopped growing and developing, and have begun to turn completely yellow. Because these types of weeds stopped growing and developing in

the days following herbicide application, and it was taken into account that the youngest ones completely died within 15-20 days.

It was noted that the complete destruction of weeds to this extent is noticeable not only in one-year-olds but also in many-year-olds, and on the 20th day after the use of the preparations, some species, especially field crops, completely yellowed.

In fields treated with herbicides, plants turned yellow from the first days and stopped developing. On the 10th day, 51.1-64.1% of annual weeds and 16.2-68.4% of perennial weeds turned yellow and showed the effect of the herbicide, but complete death was not detected. Complete destruction of weeds was observed on the 20th day after use. The maximum biological effectiveness of the preparations was observed on the 30th day after use, where 91.5-98.5% of annual weeds were completely destroyed, and 84.6-97.2% of perennial weeds were destroyed depending on the amount of the preparation used.

The fact that the physiological processes of weeds that did not completely die from the effects of the preparations on the indicated days were also disrupted, and they did not fully grow and develop, which indicates that the field was completely cleared of weeds when evaluating the degree of preservation of weeds in the field by the 40th day.

In terms of the degree of biological effectiveness of herbicides relative to each other, it has been established that their biological effectiveness increases with an increase in the amount applied per hectare, and the activity of herbicides is higher.

The results obtained in this regard show that the effectiveness of the preparation increases with increasing selective doses, and it can be seen that the death of yellowed weeds in the field, that is, complete drying, was mainly taken into account on the 20th day after the use of the preparation. In this case, it was observed that wheatgrass and alfalfa were typically among the first to show high sensitivity to the preparation from the first years of life, while later-growing plants and sorghum species died completely on the 10th day after the herbicide was used. If the plants have grown slightly over many years, they are resistant to herbicides, and it is clearly visible that they will completely die by the 30th day, which indicates the high effectiveness of the measures taken.

The developed two types of herbicides demonstrate the high effectiveness of their effects on the perennial life of wild plants. This is because the cessation of germicidal effects on the growth and development of widely distributed field bindweed, reeds, and couch grass is characterized by the cessation of plant growth and development on the 10th day after use, followed by the complete destruction of some by the 20th day. This indicates the active effect of herbicides on these species. It has been determined that, depending on the developmental conditions of the field crop, the younger it is in its phase, the more susceptible it is to the effects of herbicides.

Conclusion. Thus, to determine the effectiveness of the herbicide for each type of weed growing around agricultural crop fields, it has become clear that it is necessary to determine the dosage of the preparation for each plant species and its developmental conditions, and to clarify the timing of use by isolating the dosages used for different types of weeds growing in the field and conducting observations. Therefore, using herbicides with the action of glyphosate against perennial and annual weeds around agricultural crop fields and for their mass destruction, in the second decade of April, when the average air temperature rises to 15-17°C, it is required to use perennial and annual weeds such as reed, field bindweed, barnyard grass, couch grass, camel thorn, sorghum, wheat, and other sorghum species at a stem height of no more than 20-30 cm.

For these purposes, it is required to apply maximum amounts of herbicides, conditionally mixing them with water, using OVX units, ensuring complete contact of solutions with the plant body. In this case, to prevent the regrowth of plants in the days following the application of the herbicide to the fields, it is recommended to stop irrigation and organize work, taking into account that measures will be taken to begin sowing agricultural crops by irrigating the field on the 30th day after application, in order to ensure soil moisture.

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