## Annotation

## Zabolotniy A.I., Zabolotna A.V., Leontyuk I.B., Rozborska L.V., Golodriha O.V. The level of contamination and the height of corn plants after applying Etalon herbicide

One of the physiological peculiarities of corn is its slow growth in the early stages of growth and development and weeds can freely grow with corn crops at this time. Herbicides provide a timely opportunity to exterminate weeds and it creates favorable conditions for the growth and development of crop plants.

Studies were carried out under the conditions of Department of Microbiology, Biochemistry and Physiology of Uman National University of Horticulture in maize crops of  $\square KC$  4014 hybrid in 2015–2016. Etalon herbicide was applied in 1.5; 2.0; 2.5 and 3.0 doses l/ ha after sowing corn and before occurrence of sprouts. The level of contamination was determined by common methods and plant height was determined by measuring 100 typical plants with the control variant.

The use of different doses of Etalon herbicide allows monitoring effectively the level of the segetal vegetation in crop crops.

In 2015, in a month after applying herbicide at 1.5 l/ ha, the preparation exterminated by 80% of weeds in the number and 74% by weight in the determination of the contamination level. With further increase in herbicide application rates there was a decrease of both the number and weight of weeds in corn crops. The greatest decrease in the number and weight of the segetal vegetation was observed after applying the greatest dose of the preparation of 3.0 l/ ha.

After repeated recording of the contamination of corn crops before harvesting we noted that the number and weight of weeds increased in comparison with the previous recording. This is due to the germination of new weeds during the period between recordings. However, the degree of extermination of the segetal vegetation through the herbicide application rate remained similar to the previous recording. The same tendency was observed in 2016.

When determining the height of corn plants at 8–10 leaf stage in 2015 we found that after applying Etalon herbicide in the dose of 1.5 l/ ha the plant height was larger than the control variant at 8%, at 2.0 l/ ha it was larger by 13%. The highest corn plants were observed in the variant of the experiment when applying preparation in the dose of 2.5 l/ ha. In this case plant height was greater than the control variant by 17%. Applying the highest dose of the preparation of 3.0 l/ ha somewhat inhibited growth processes of corn plants.

When determining the height of corn plants in the stage of panicle the same dependence was observed between the height growth and application rates of the preparation as in the previous stage of the plant development. The highest plants were when applying 2.5 l/ ha of the herbicide as in the previous stage. Corn plants were growing less intensively after applying other doses of the herbicide.

In determining plant height in 2016 it was noted that the dependence between the height growth and herbicide application rates remained the same as in 2015.

Thus, applying doses of Etalon herbicide allows monitoring effectively the level of contamination in crop crops. In addition, reduction in weed competition with corn plants concerning such factors as moisture, nutrients and sunlight has a positive influence on the height growth of corn plants, especially in the variant of 2.5 l/ ha of the preparation. In this case the corn height is growing in comparison with the control variant by 17–18%.

Keywords: maize, herbicide Etalon, level of segetal vegetation, plant height.