



**CYTOGENETIC EFFECTS OF HERBICIDE GLIF ON MONOCOTS AND DICOTS**

**Nemertsalova M.V.\***

*I.I. Mechnikov Odessa National University, Odessa, Ukraine*

E-mail: [tvass@ukr.net](mailto:tvass@ukr.net)

Nowadays the universal total non-selective herbicides on the basis of different salts of glifosate - Glif, Roundup, Tornado and other trade marks are widely apply in the agriculture productions. The chemicals depress the development of monocots and dicots (grassy plants, trees and bushes). It districts in soil quickly enough and it is non-volatile so it is practically not dangerous for the human being. But is the preparation so safe for culture plants that it must protect? Some quantity of chemicals stays all the same.

The investigations have been provided on the raise seeds of dicot *Helianthus annuus* L. cv. Evrica and monocot - *Triticum aestivum* L. cv. Fantsiya odesskaya. The concentration of chemical 1:16 from the working solution has been used for anaphase method of chromosome anomalies counting. The change of frequency of forming chromosome aberrations - bridges and fragments - from anaphase to telophase is revealing in our investigations. The frequency of cells with bridges decreases from anaphase to telophase, as in the control though in the experiment and the frequency of cells with fragments disproportionately increases.

Apparently, sometimes the ruptures of bridges take place without forming fragments. These cells are visually normal, but as the result of their division daughter-cells with surplus or lack of genetic material are generated. That is why the herbicide effects should be considered by the differences of anaphase with bridges and fragments frequency. This cells seemed to be for certain ( $P < 0,05$ ) more rare in the control that in the experiment. The seeds of wheat with this concentration of Glif do not grow. That is the result of the heightened sensibility monocots towards present herbicide.

Thus the effect of chemical concerning dicots chromosomes structure (sunflower) was ascertained. And its availability for monocots with less concentrations of herbicide is expected. The studied concentrations of the chemical decrease mitosis.

This work is about cytogenetic effects of herbicide Glif on monocots and dicots. The investigations have been realized on the dicot *Helianthus annuus* L. cv. Evrica and the monocot - *Triticum aestivum* L. cv. Fantasiya odesskaya. The different sensibility toward the monocots and the dicots was revealed. The studied concentrations of the chemical decrease mitosis.

**ЦИТОГЕНЕТИЧЕСКОЕ ВЛИЯНИЕ ГЕРБИЦИДА ГЛИФ НА ОДНОДОЛЬНЫЕ И ДВУДОЛЬНЫЕ РАСТЕНИЯ**

Немерцалова М.В.

Настоящая работа посвящена исследованиям цитогенетических эффектов гербицида Глиф на однодольные и двудольные растения. Исследования проводились на проростках семян двудольного *Helianthus annuus* L. cv. Эврика и однодольного *Triticum aestivum* L. cv. Fantsiya odesskaya растениях. Была выявлена разная чувствительность для данных растений. Изученные концентрации гербицида подавляют митоз.

**\*Supervisor A.L. Sechnyak**