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**ASSESSMENT OF SAFETY WORKING CONDITIONS OF EMPLOYEES OF THE  
AGROINDUSTRIAL COMPLEX WHEN APPLYING  
CLOPYRALID - BASED PESTICIDE**

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**Actuality.** Toxicological and hygienic studies to assess the toxicometric parameters of pesticides and the conditions for their use with an assessment of the risk for workers are an obligatory component of the process of regulating the safe circulation of plant protection products.

**Purpose:** to conduct a risk assessment for workers when using a herbicide based on clopyralid in an agro-industrial complex.

**Materials and methods.** The study of the conditions for the use of the herbicide based on clopyralid in the conditions of the agro-industrial complex was carried out by the Republican Unitary Enterprise "Scientific and Practical Center of Hygiene". The treatment was carried out using a boom sprayer on the plantings of sugar beets at a consumption rate of 0.5 l / ha for the preparation, the flow rate of the working solution was 200 l / ha. All operations were carried out by the operator and the tractor driver using personal protective equipment, according to the manufacturer's safety data sheet.

The assessment of the conditions for using the pesticide was carried out on the basis of the results of the analysis of residual amounts of clopyralid in the air of the breathing zone of the operator-tanker and tractor driver, washings from the skin of the operator and tractor driver after the end of work, drifts to the soil during processing. The results were statistically processed using the Statistica 10.0 software product.

**Results and discussion.** It was found that under the indicated conditions of performing production operations in the breathing zone of the operator - the tanker and the tractor driver, clopyralid was found within the limits not exceeding the hygienic standards. In the air at the edge of the field, 1 h after the treatment, the active ingredient of the preparation was not detected. In drifts to the soil during processing, clopyralid was found from the windward and leeward sides in concentrations not exceeding hygienic standards. The average dermal exposure of clopyralid for the tanker operator was 0.000001 mg / cm<sup>2</sup>, for the tractor driver - 0.000001 mg / cm<sup>2</sup>. The workers did not experience any deterioration in their health, irritation of the skin or mucous membranes of the eyes.

The research results made it possible to evaluate the clopyralid-based pesticide as a pesticide with an acceptable risk for workers in the agro-industrial complex, subject to the established agro-technical and hygienic regulations for use. In real conditions of treatment with the pesticide (at a maximum consumption rate of 0.5 l / ha) using the available agricultural equipment and the recommended application regulations, no excess of hygienic standards in the air of the working area was observed, there was no deterioration of working conditions, environmental pollution.

**Findings.** Based on the results of assessing the content of clopyralid in the air of the working area and on the skin of workers (taking into account the magnitude of the risk of inhalation and dermal exposure, set at 0.0049 for the fueling operator and 0.018 for the tractor driver, with a permissible <1), it was concluded that that, subject to the established consumption rates, application regulations and safety measures when using a pesticide, the working conditions when using this pesticide meet hygienic requirements.