

Study of Working Conditions and Environmental Pollution, When Applying The Herbicide Zellec

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	<p>Annotation: In accordance with the tasks, studies were conducted to study occupational health and pollution of environmental objects when using Zellec. The drug was applied in the form of a liquid droplet aerosol. Field studies were conducted over two seasons of the drug.</p> <p>A hygienic assessment of working conditions when using the drug was carried out at the tractor driver's workplace, swabs were taken from open areas of their skin integument, as well as overalls. Studies have been carried out to study the functional state of the organism of tractor drivers, tankers working with an herbicide. Studies of the study of working conditions with the use of Zellec showed that workers have a combined effect of chemical and physical factors. The process of applying Zellec is accompanied by its spread into the atmospheric air. In the air above the treated field 6 hours after use of the drug is not detected. The introduction of herbicides is accompanied by it getting into the soil and water of open reservoirs.</p>
<p>Keywords: Zellec, aerosol, intensity, temperature, environment, organism condition.</p>	

According to the ILO, agriculture, which employs almost half of the world's workforce (1.3 billion people), is among the most hazardous to the health of workers, and every year a large number of agricultural workers are harmed by poisoning from pesticides and other chemicals.

In this regard, one of the priority areas of occupational health in modern conditions of agricultural production remains to ensure the safety for the health of workers and the environment when using pesticides. The prevention of acute and chronic pesticide poisoning is still relevant, based on a quantitative assessment of the risk of their exposure in combination with the severity and intensity of work.

Under these conditions, the role of those branches of hygienic science, whose task is to identify the pathology caused by chemicals, to establish the potential and real danger of specific, especially widely used pesticides in cotton growing, especially increases.

It is also important that the specific use of pesticides in agriculture and in the course of anti-epidemic measures actually determines the intermittent nature of their action, since work with them is carried out cyclically (seasonally) with breaks during the day or more. This indicates the need for a differentiated study of the joint and consistent effect of pesticides on the body of workers, taking into account the specific groups of pesticides used.

The study of the conditions for the use of pesticides in agriculture and the elucidation of their impact on the health of workers, it is necessary to develop a set of recreational measures to prevent occupational poisoning and protect the environment.

In accordance with the tasks set before the work, we conducted research on the study of occupational health issues and some issues of environmental pollution when using the herbicide selleka in cotton growing. Zellek is used as a selective herbicide during the vegetation of cotton at a dose of 2 l/ha by the tractor method. The drug was introduced in the form of a liquid droplet aerosol. Field studies were carried out during two seasons of herbicide application on cotton-growing farms in the Syrdarya region.

Hygienic assessment of working conditions when using the drug was carried out on the basis of a study of production and sanitary factors at the workplace of tractor drivers (the content of the drug in the air of the working area, microclimate parameters, noise and vibration intensity), swabs were taken from open areas of their skin, as well as overalls. Studies have been carried out to study the functional state of the body of tractor drivers, tankers, working with the herbicide.

In order to study the degree of pollution of environmental objects, sampling of atmospheric air, soil, water of open reservoirs was carried out for the content of the applied herbicide in them. Works related to the use of zeleck in cotton growing consist of the following stages: transporting the drug, opening the container, measuring the required amount of the drug, preparing working solutions, filling tanks, adjusting the output of the solution from sprayers and treating plants.

The results of the determination of Sellek in air samples show that at the time of application in the center of the treated part of the field, the concentration of Sellek is on average 0.49 mg/m³. After 2 hours after treatment, the content of selleck in air samples decreases more than 8 times, and after 6 hours it is practically not detected. In atmospheric air samples taken at different distances, the content of Söllek was different. The drug was found at a distance of up to 100 meters from the edge of the cultivated field on the leeward side.

In the process of working with zelek, it got on overalls and on open areas of the body. In tankers, in swabs taken from overalls, the average content of the drug was 0.32±0.07, from the

face - 0.17 ± 0.03 , and from the skin of the hands - 0.28 ± 0.04 mg/100 cm². For tractor drivers, these indicators were lower: 0.19 ± 0.03 , 0.12 ± 0.02 and 0.15 mg/100 cm².

Work on the introduction of sellek was carried out in the hot season. Studies of meteorological conditions have established: at the workplace of the tractor driver, the air temperature, depending on the time of day, was in the range of 24.3 - 36.2 0C (at the outside 22.6 - 31.30C). In the daytime, the temperature inside the cabin was 3-50C higher than outside. The relative humidity of the air varied within 29.4 - 46.2%, the speed of air movement was 0.2 - 0.8 m/s at the workplace of the tractor driver.

The operation of the engine of the tractor and sprayers generates noise. The noise intensity at the workplace of the tractor driver was at the level of 89 - 102 dbA. In connection with the use of the drug in the form of a liquid-drop aerosol, its content in the air of the working area of tractor drivers was not high and was within the permissible concentration. On the day of treatment of plants, the drug in soil samples was in the range of 0.04 - 0.34 mg / kg, in the water of open reservoirs (nearby ditches) the drug was found in the amount of 0.003 - 0.014 mg / l.

Conducted studies of the study of working conditions in the application of zelek showed that workers have a combined effect of chemical and physical factors. It is necessary to note the combined effect of select and high air temperature, noise and vibration. This situation to a certain extent exacerbates the shifts in the body of workers. To study the functional state of persons working with the drug for 2 years, 18 tractor drivers and 14 tankers with work experience from 2 to 5 years were examined. As a control group, tractor drivers and workers performing field work at the same time, but not related to pesticides, were used. Research was carried out during the day, before work, before a break. after a break and at the end of the day, 3 times within 1 working week.

Summing up the results of the studies conducted on the study of occupational health issues of functional changes in the body of tractor drivers performing work on the use of Sellek in cotton growing, it should be noted that the process of using the drug takes place in difficult hygienic conditions. A complex of industrial and sanitary factors of chemical and physical nature takes part in the formation of working conditions when using a herbicide. In the body of tractor drivers who worked under the above conditions, there are functional changes in the cardiovascular system, indicating the tension of its functions. There is an aggravation of shifts in the thermal state of the body. The process of applying zeleck is accompanied by its spread into the atmospheric air. In the air over the treated field 6 hours after the use of the drug is not detected. The introduction of herbicides is accompanied by its ingress into the soil and water of open reservoirs.

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