

## **HYGIENIC JUSTIFICATION OF THE PERMISSIBLE LEVEL OF SELLER PESTICIDE IN ATMOSPHERIC AIR AND WORKPLACE AIR**

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### **ABSTRACT**

*Based on the conducted research, the safety of the use of the new insecticide Seller in agriculture was established. Scientifically substantiated the maximum permissible concentration of insecticide in atmospheric air, air of the working area, in the soil. Approximately permissible concentration of the drug in products of plant origin, in the water of water bodies has been developed.*

**KEYWORDS:** *Seller, Toxicity, Hygiene Regulations*

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### **INTRODUCTION**

The growth of the world's population requires a solution to the food problem on all continents. It should be noted that the prevention or reduction of crop yields under the influence of pests, diseases and weeds around the world is very important and requires immediate action. The solution to this problem today is the use of chemicals in agriculture. A number of factors point to this "... the cost of importing pesticides from an economic point of view requires development in every region." Therefore, it is important to study the level of safety of such pesticides in the environment and the human body. [1]

At present, modern science has enough evidence about the negative impact of environmental and hygienic factors on the health of the population. Multi-scale studies conducted in recent years have shown that there is a link between deteriorating public health and pollution of the environment with pesticides and other chemicals. Protection of the environment and human health, priority scientific issues related to environmental safety when using new pesticides in agricultural practice Our government has developed state social programs and adopted laws. During the period of independence of the Republic of Uzbekistan, reforms have been carried out in healthcare, industry and agriculture. Article 3 of the Law of the Republic of Uzbekistan "On protection of atmospheric air" states that one of the main principles of protection of public health is the priority of preventive measures and the unity of medical science and practice. [2]

When wheat fields are treated with celery pesticide, the drug pollutes the air in the workplace. When using the pesticide in the amount of 0.01 kg / ha, the residue of the drug was found to be 0.05 to 0.01 mg / m<sup>3</sup> during pesticide treatment in the workplace. ± With the increase in the use of the drug Seller (0.02; 0.04; 0.05; 0.1; 0.2 kg), the increase in the level of air pollution in the workplace (0.1; 0.2; 0.3; 0) , 5; 0.6mg / m<sup>3</sup>) was observed. [3]

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Q When agricultural crops were treated with Seller pesticide, the workplaces were contaminated with the pesticide.

it is very important to take measures to protect workers involved in pesticide treatment from poisoning .

**The amount of Seller pesticide in the workplace ( $n = 12$ )**

Quantity used, kg	Sampling time, days	Amount of pesticide. mg / m <sup>3</sup>
0.01	during use	0.05 ± 0,01
0.02	during use	0.1 ± 0,02
0.04	during use	0.2 ± 0,01
0.05	during use	0.3 ± 0,02
0.1	during use	0.5 ± 0,03
0.2	during use	0.6 ± 0,04

**Results of the study of atmospheric air pollution with Seller pesticide.** When grain fields were treated with Seller pesticide, its amount in atmospheric air was studied in dynamics. When using Seller pesticide in the amount of 0.01 kg / ha, its content in atmospheric air (15 m height) was 0.04 mg / m<sup>3</sup>. After 2 hours of use, its amount in the air is reduced by half, 0,02 ± 0,005 mg / m<sup>3</sup>. On the third day of the experiment, no drug residue was found in atmospheric air. With increasing the use of pesticides (0.02; 0.04; 0.05; 0.1; 0.2 kg) an increase in the amount of pesticide in the air was noted (0.05 ± 0,06 and 0,09 ± 0,08 mg / m<sup>3</sup> each). [4]

mg / m<sup>3</sup>, respectively ± 0,004 – 0,07 ± 0,06 and 0,01 ± 0,002 – 0,03 ± 0,002). It should be noted that when using the pesticide in the amount of 0.1 kg / ha, the trace of the drug was detected in the air for 3 days, and when used in the amount of 0.2 kg / ha, the pesticide was detected in the air in the amount of 0.01 ± 0.002 mg / m<sup>3</sup> (Table 4.2). Based on the above, it can be concluded that when Seller pesticide is used in agriculture, the air is polluted with the chemical. The level of air pollution lasts up to three days. Therefore, it is advisable to develop specific measures to protect the atmosphere from air pollution when Seller is used in agriculture.

**Develop a permissible norm of seller pesticide in water bodies**

The organoleptic properties and sanitary regime of the water were studied to develop the permissible level of the pesticide in the water.

Based on the organoleptic properties (odor) of water of the drug, its hypersensitivity concentration was determined to be 0.04 mg / l.

The drug did not foam at such a concentration and did not change the color of the water. Thus, as a result of sanitary-toxicological tests, the hypersensitivity concentration of the drug was set at 0.72 mg / l.

Calculation: 0.72 - 100

X - 5 = 0.03 x 20 = 0.72 mg / l

As a result of complex and sanitary-toxicological examinations, the permissible level of Seller in water was set at 0.04 mg / l (sensitivity indicator - organoleptic indicator).

**Floods of the drug in atmospheric air amount**

<b>№</b>	<b>Used amount , kg / ha</b>	<b>For example get time , day</b>	<b>Pesticides amount mg / m<sup>3</sup></b>
1	0.01	Used per hour After 2 hours 2- day 3- day	0.04± 0,007 0.02± 0,005 0 0
2	0.02	Used per hour After 2 hours 2- day 3- day	0.05± 0,006 0.03± 0,004 0.01± 0,002 0
3	0.04	Used per hour After 2 hours 2- day 3- day	0.06± 0,006 0.04± 0,002 0.01± 0,003 0
4	0.05	Used per hour After 2 hours 2- kun 3- kun	0.07± 0,006 0.05± 0,002 0.02± 0,003 0
5	0.1	Used per hour After 2 hours 2- day 3- day	0.08± 0,007 0.06± 0,005 0.02± 0,005 izi
6	0.2	Used per hour After 2 hours 2- day 3- day	0.09± 0,008 0.07± 0,006 0.03± 0,002 0.01± 0,002

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**Determining the maximum permissible level of seller pesticide in food.**

The maximum permissible level of Seller pesticide in food products was developed on the basis of the guidelines "Methodical instructions on the hygienic assessment of new pesticides."

The level of environmental resistance and toxicity of the drug were taken into account.

Calculation:

0.72 - 100%

X - 70% X = 0, 0 5

0.5 - 1000

X -360 X = 0, 18

The maximum permissible level of Seller pesticide in wheat was set at 0.18 mg / l. However, the small amount of pesticide use (0.05 kg / ha) should not be a residue of the drug in wheat.

celery leprosy on the sanitary condition and organoleptic properties of water bodies, its hypersensitive concentration (effect on the smell of water) was determined to be 0.04 mg / l. The drug does not foam in water at this concentration and does not change the color of the water.

**Hygienic parameters of seller pesticide**

Indicator	Defined and allowed norm
Atmospheric air mg / m <sup>3</sup>	0.002
Workplace air mg / m <sup>30</sup>	0.24
Water basins mg / l	0.04
In the soil, mg / kg	0.2
Food - mg / kg	Not allowed

With this in mind, as a result of in-depth toxicological and hygienic inspections, hygienic standards for Seller pesticide have been developed in water bodies, foodstuffs, soil, and atmospheric air. In the development of hygienic standards in water bodies, the effect of the drug on the organoleptic properties of water and sanitation was taken into account. As a result of sanitary-toxicological experiment, the sensitive dose of the drug was set at 0.72 mg / l, and the effect on the odor of water was set at 0.04 mg / l. Taking into account the results of complex inspections and sanitary toxicological examinations, the permissible concentration of Seller pesticide in water bodies was determined as 0.04 mg / l (organoleptic sensitive mark). [5]

Taking into account the environmental resistance and toxicological properties of Seller pesticide, its maximum permissible level in food (wheat) was set at 0.18 mg / kg. Given that the drug is used in small quantities (0.05 kg) in grain fields, it was determined that it should not be in wheat.

concentration of Seller pesticide was determined by mathematical calculation, taking into account the amount and toxicological properties of the pesticide determined during use in atmospheric air and in the workplace . According to him, the permissible concentration of Seller pesticide in atmospheric air was set at 0.002 mg / m<sup>3</sup>, and at workplaces - 0.24 mg / m<sup>3</sup>. [6]

Based on the sanitary-toxicological experiment, the sensitive concentration of the drug Seller was determined to be 0.72 mg / l. Complex sanitary-toxicological experiments became the basis for the recommendation of the permissible concentration of the drug in water bodies as 0.04 mg / l (the main sign-organoleptic index). Based on the toxicodynamics of Seller leprosy and its resistance in nature, mathematical calculations were developed to allow it in food products.

According to him, the maximum permissible level ( MRED ) of Seller leprosy in wheat was set at 0.18 mg / kg. However, given the small amount of the drug used in grain fields (0.05 l / ha), wheat should not have any residues. [7]

Based on the approach to the regulation of harmful substances in the air, the toxicological parameters of the drug and its physicochemical properties and the method of calculation, the permissible concentration of Seller leprosy in the air (REK) is 0.002 mg / m<sup>3</sup> and 0.24 mg / m<sup>3</sup> in the workplace. Taking into account the complex and rapid methodology of pesticides in the environment (2015) and the maximum permissible level of the drug in food, its permissible concentration (MREK) in the soil was set at 0.2 mg / kg. As a result of the analysis of the chemical structure and biological activity of synthetic pyrethroids, it was concluded that the replacement of the ethyl group in chains 4 and 6 of their chemical structure with the methyl group increases the toxicity and biological activity of pesticides. This is the case with the Seller pesticide. [8]

does not pose a risk to human health and the environment when used in recommended norms and regulations in agriculture . It is known that pesticides belonging to the class of synthetic pyrethroids are stored in the soil for a certain period of time and pollute the surrounding objects (air, workplaces, water, food). [9] The duration of storage of synthetic pyrethroids in the soil, their movement in the soil layer, and the degree of transition of the plant to the surface depends on the climatic geographical conditions of the region, the amount used, soil type and moisture and other factors. In the hygienic assessment of new pesticides, it is important to assess their fate in the soil system, their movement in the soil layer (migration), their accumulation and their transition to plant-derived foods. Because their results play a special role in the development of preventive measures for the safe use of pesticides in agriculture. It is the study and evaluation of these situations that form the basis of this scientific research. [10]

Resistance of Seller pesticide in soil, its movement in layers, accumulation, the degree of transition of plants to the surface were studied in the soil-climatic conditions of the republic (fine-grained yellow soil, fine-grained gravelly yellow soil), which differ from each other. Initially, the level of air pollution in the workplace and atmospheric air during the processing of agricultural crops with Seller pesticide was assessed. [11]

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