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THE ACTION OF SELLER INSECTICIDE ON THE SOIL LAYER HYGIENIC JUSTIFICATION

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ABSTRACT

More than 4 million pesticides are used against pests worldwide, of which only 1% are effective. The development of hygienic standards of pesticides is of particular importance in preventing the negative impact of pesticides on the human body and the environment. The resistance of Seller insecticide to soil, its movement in layers, accumulation, the degree of transition of plants to the surface, the level of air pollution in the workplace and atmospheric air in the processing of agricultural crops were assessed.

KEYWORDS: *Insecticide, Sanitary-Toxicological, Permissible Concentration, Migration, Hygienic Regulation.*

INTRODUCTION

More than 100 chemical compounds used in agriculture are known in our republic .

The use of many pesticides in agriculture, on the one hand , increases productivity and achieves economic efficiency, as well as the introduction of new biologically active substances into the environment, which leads to major problems in environmental protection. **[1,2]**

Large amounts of chemicals are used to protect agricultural crops. All this is aimed at the destruction of living organisms together and separately **[3].** Most chemicals are highly resistant to the environment and retain their toxic properties under natural conditions **[4].** Some pesticides have carcinogenic, mutagenic, gonadotoxic properties. Therefore, in the study of the toxicity of pesticides, it is important to assess their gonadotoxic, carcinogenic, mutagenic effects **[5].** Pesticides with such properties are prohibited for use in agriculture. In some countries around the world, the use of toxic chemicals with such properties continues. As mentioned above , it is estimated that the annual damage from agricultural pests in the CIS countries is 45 billion soums [**6,7].**

In order to prevent the negative impact of pesticides on the environment, human health, their food products, the environment, atmospheric air, working air, soil, water bodies, norms and regulations, the factors influencing these conditions, the state of their preservation in nature. detection is the basis for preventing the adverse effects of pesticides **[7,8].**

It is known from the above literature that insecticides 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). **[9,10,11]** 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 area, the amount of them used, soil type and moisture and other factors. . **[12,13]**

The purpose of the study. It consists of a hygienic assessment of the accumulation of Seller insecticide in the soil, the degree of resistance and its movement in the soil layer.

Materials and research methods

The object of testing is the drug Seller 20% x, developed by Euro Team Uzbekistan - Germany.

Emprik: $C_{22}H_{19}CL_{2}NO_{3}$

Molecular weight: 416.3

The accumulation of Seller insecticide in the soil, the degree of resistance and its movement in the soil layer were tested in the area where the grain was planted. The residue of the insecticide in the soil was determined by the thin-layer plate method. The drug was used in the experimental area in the amount of 0.01, 0.02, 0.04, 0.05, 0.1, 0.2 kg / ha. A soil sample for inspection was taken according to a set standard over a period of time.

The results of the inspection and their discussion

Results of the study of the degree of resistance, condition and movement processes of seller insecticide in the soil

It is known from the above literature that insecticides 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).

The action of Seller insecticide in the soil layer was studied in its three layers (0-10, 10-20, 20-30 cm). Soil samples were taken 60 days after insecticide application. The results of the audit are presented in Table 1.

TABLE 1 RESULTS OF TESTING THE ACTION OF SELLER INSECTICIDE ON FINE-GRAINED YELLOW SOIL

The amount used is kg / ha	**Sampling time, day**	**The drug was detected in mg / kg**		
		Soil layer cm		
		0 - 10	**10 - 20**	**20 - 30**
0 , 0 1	60	0	0	0
0.02	60	0.0 1± 0,001	0	0
0.04	60	0.0 2± 0,002	0	0
0.05	60	0.0 3± 0,002	0.0 1± 0,002	0
0.1	60	0.0 5± 0,004	0.0 2± 0,002	0.0 1± 0,001
0.2	60	0.0 6± 0,004	0.0 3± 0,002	0.0 2± 0,001

Checks that showed that the insecticide was 0.01 kg / ha amount 60 days when used then preparation of the soil none layer not detected .

When the amount of drug used increased to 0.02 kg / ha, the insecticide ± 0,001was detected only in the amount of 0.01 mg / kg in 0 - 10 cm layer of soil. As the amount of Seller drug

increased, so did its content in the soil. For example, when the amount of the drug was increased by 0.04 kg /, its residue was not detected in the amount of 0.02 in a ± 0,002 *мг/кг*layer of fine-grained yellow soil 0-10 cm . In other untested layers of soil (10-20, 20-30cm) no insecticide was detected. When using the insecticide in the amount of 0.05 kg / ha, the action of the drug with the soil layer was observed.

When the insecticide is applied in an amount of 0.04 kg / ha, the soil is 0 -10 cm. and 0.03 ± 0,002mg / kg, 10 - 20 cm. was found to be 0.01 ± 0,002mg / kg. It should be noted that the higher the amount of Seller drug used, the greater its action in the soil layer. When using the insecticide in the amount of 0.1 and 0.2 kg / ha, the insecticide was detected at a depth of 10 - 20 cm in the soil at a depth of 0.02 ± 0,002and 0.03 ± 0,002mg / kg, respectively, and at a depth of 20 - 30 cm in the amount of 0.01 ± 0,001and 0.02 ± 0,001mg / kg. The action of Seller insecticide in the soil layer was also investigated in fine-grained gravelly soils. When the insecticide was applied at a rate of 0.01 kg / ha under these soil conditions, no residue was found in any layer of soil after 60 days. The insecticide used in the amount of 0.02 kg / ha of the drug was detected only in the amount of 0.02 ± 0,002mg / kg on the surface of the soil (0 -10 cm). When increasing the amount of insecticide application to 0.05 kg / ha, the drug acted on the next part of the soil (10 -20cm) and in a layer of 20 - 30 cm. Thus, the amount of soil was determined at a depth of 0.03 at 10 - 20 cm and ± 0,0040.02 ± 0,002mg / kg at a depth of 20 - 30 cm (Table 6). This is 17 and 22 percent more than this layer of fine-grained yellow soil, respectively.

Table 2

Results of testing the action of seller insecticide on fine-grained gravel yellow soil

The amount used is kg / ha	**Sampling time, day**	**The drug was detected in mg / kg**		
		Soil layer cm		
		0 - 10	**10 - 20**	**20 - 30**
0 , 0 1	60	0	0	0
0.02	60	0.0 1± 0,002	0	0
0.04	60	0.03± 0,003	0	0
0.05	60	0.04± 0,003	0.03± 0,004	0.02± 0,002
0.1	60	0.0 5± 0,006	0.04± 0,004	0.02± 0,002
0.2	60	0.0 6	0.05± 0,003	0.03± 0,003

Insecticide soil when the application rate is increased to 0.1 and 0.2 mg / kg

in three layers (0 - 10, 10 - 20, 20 - 30 cm) (from 0.05 ± 0.006 to 0.03 ± 0.003 mg / kg). [9,10]

C eller insecticide moves through the soil layer when used in agriculture. Its degree of mobility depends on the amount of chemicals used and the type of soil. The higher the amount of insecticide used, the higher its deep movement into the soil layer. In addition, the migration of celery insecticide is higher in fine-grained gravelly soils than in fine-grained yellow soils.

CONCLUSION

From the above, it can be concluded that Seller insecticide is stored in the soil for a long time (60 days or more). This situation pollutes the plants planted in such areas and contaminates the food products obtained from them. The amount of insecticide in the soil depends on the type of soil and the amount used. The insecticide accumulates in the deep layer of soil (0-10 cm) depending

on the dose used. The greater accumulation of Seller on the surface of the soil can be explained on the one hand by the low solubility of the insecticide in water, on the other hand by the abundance of organic matter on the surface of the soil. It should be noted that the fate of the seller insecticide in the soil depends directly on the type of soil. Insecticide fine-grained gravel has higher migration in the soil layer than in fine-grained yellow soil. This is because gravel soil retains less organic matter. Based on field experiments, half (T_{50}) and complete decomposition of Seller was found in fine-grained yellow soil conditions.

It can be concluded from the above. When Seller insecticide is used in agriculture, it is observed that the insecticide penetrates not only the soil but also the chemical preparation of plants into the surface layer.

Hence, it leads to contamination of food products derived from these plants. The degree of penetration of seller insecticide into the surface part of plants depends on the type of soil. Therefore, in the development of hygienic regulation and preventive measures of new pesticides, it is important to take into account the level of their resistance in the soil, the transition of plants to the surface. The type of soil should also be taken into account.

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