

Description of Practically Used Insecticides

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Article Information

Received: April 25, 2023

Accepted: May 26, 2023

Published: June 30, 2023

Keywords: pyrethroid, insecticide, cyclopropane, allergoeffekt, sumicidin, tsimbush, ripcord, detsis. Synthetic pyrethroids.

ABSTRACT

The chemical method is of great importance in the fight against the cotton bollworm because of its rapid effectiveness. In areas where the pest is strongly developed, the efficiency of the biological method is usually insufficient. Organic synthetic preparations are mainly used against harmful insects and mites. They belong to different classes of chemical compounds. While each class has certain common physicochemical properties, the mechanism of action may also be common. Therefore, it is appropriate to describe the preparations by groups according to their chemical structure and effect on pests.

In the last 25 years, a new group of drugs - pyrethroids - has taken a strong place in the protection of plants from pests. These drugs have several advantages over all other drugs that have been used for many years, but there are also some disadvantages.

Synthetic pyrethroids are products of cyclopropane acids and differ from natural pyrethrins in their light resistance. At the same time, they are less dangerous for people and the environment, because they are used in very small quantities and break down into safe substances in a relatively short time. Due to the unique mechanism of action of pyrethroids on the insect organism, the pest is quickly poisoned. In a matter of minutes, due to the effect of the drug on the surface or inside, it stops feeding, comes out and releases a yellow liquid from its mouth. Finally, depending on the degree of poisoning, he dies in a few minutes to several hours. Pyrethroids have a "knockdown effect", which means that if the body is not poisoned with sufficient amounts of the drug, it may first suffer and then recover. Most pyrethroids can affect eggs, larvae and adults simultaneously.

Pyrethroids can be toxic to humans and warm-blooded animals differently. Among them there are low toxic (ambush, corsar, rovikurt, anometrin-M), moderately toxic (tsimbush, sumicidin, etc.) and highly toxic (decis). But usually, the forms of pyrethroid drugs have a very small amount of active substance (for example, 25 grams per 1 liter of decisis), and the amount of the drug used per hectare is also small. Therefore, in practice, a very strong diluted amount of the drug is used. This greatly reduces the possibility of poisoning. But pyrethroids are not without their drawbacks. Among them, "allergo effect", that is, an allergy (redness, itching, soreness) can occur in a person under the

influence of the drug.

Allergoeffekt is not typical of all pyrethroids. Such an effect is manifested in some, but not all, of the employed people. Many pyrethroids are effective on adults and larvae (maggots) of beneficial insects within 7-12 days, but not during the period of pupation and thus endoparasitism. All pyrethroids have a strong effect on aquatic animals. Therefore, it is forbidden to use them near water bodies and water structures.

Pyrethroids, according to their properties, are divided into the first and second classes. The first ones affect most insects, but not spider mites (sumicidin, ripcord, tsembush, kinmix, detsis, etc.). The latter affect insects as well as spider mites and are more important in practice (karate, talstar, danitol). At the same time, the consumption of the latter per hectare is much lower.

Treatment with pyrethroids is not expensive compared to other preparations. The reason for this is the low rate of consumption. Pyrethroids have been studied since 1979 at the Republican Scientific Research Institute of Plant Protection. The first pyrethroid substance was sumicidin. Later, drugs such as ambush, tsembush, rovikurt, detsis, Nurell-D, danitol were studied and widely tested against pests of cotton, alfalfa, corn and vegetable crops and recommendations were made.

The impact of pyrethroids on cotton and the possibility of residues in the seed and extracted oil were studied at UzOHI. It was found that when pyrethroids such as sumicidin, tsembush, ripcord, detsis were sprayed on pest-free cotton, the yield did not decrease, but even slightly increased. When pyrethroids were sprayed 4 times (every 25 days) during cotton growth, no residues of these drugs were found in seed and oil.

Thus, drugs belonging to the group of pyrethroids were widely introduced, as they were the most effective and met the highest requirements. But over the years, tolerance to pyrethroids has started to develop. Therefore, it became known that the effectiveness of pyrethroids, which have been used for many years, is decreasing. Therefore, new types of pyrethroids are being developed and mechanisms to prevent tolerance are being discovered.

ARRIVO (tsembush, tsirax, nurell, sherpa, Tsipi, tsypermethrin, besttsiper, moermethrin, superkill). Pure substance: cypermethrin- α -cyano-3-phenoxybenzyl-2,2-dimethyl-3-(2,2-dichlorovinyl)-cyclopropane-carboxy-late. Belonging to the first generation of synthetic pyrethroids, it has been used since 1981 to protect almost all technical, vegetable-policy crops, garden trees and pastures (from grasshoppers) from various pests (except spider mites). The drug was created by the world's largest pesticide manufacturers and called by different names. In particular, it is also produced in Uzbekistan under the name cypermethrin. All manufacturers prepare it in the form of a 25% emulsion concentrate (e.v.), that is, 1 l of the drug contains 250 ml of pure substance.

Preparations with an active (pure) substance called cypermethrin affect insects from the surface and inside. These do not have the ability to act systemically (through the plant). According to the annotation of the drug, cypermethrin is among the compounds that have a moderate effect on animals with fever (O'D50 for rats is equal to 242-542 mg/kg); slightly toxic through the skin (O'D50 – 3000 mg/kg). It does not lose its strength in 2-3 years in a dry and cool place. In Uzbekistan, 15 types of crops and pastures are allowed to be used against various pests at different rates (0.14-1.6 l/ha) (List, 2007).

DANITOL, 10% em.k. Pure substance: fenpropathrin (2,2,3,3-tetra-methyl-cyclopropane-carbon-1-acid, α -cyano-3-phenoxybenzyl ether). A moderately toxic drug, it is mainly produced by the Japanese company Sumitomo, and its analogues are produced at the Dalian plant of the People's Republic of China (datrin, 20% m.c.) and Uzbekistan (uzfen, 20% m.c.).

Danitol is one of the new generation synthetic pyrethroids, which effectively affects many insects - pests, as well as spiders. In terms of action, it is an insectocarcide. There is enough of such a need in agriculture. Preparations with fenproprathrin in the form of 10% and 20% of pure substance. and produced in Flo forms. Proportionally, the consumption rate also changes from 1-2 l/ha to 0.5-1.0

l/ha. Widely tested in Uzbekistan, it was included in the "List" since 1989 to protect cotton, apple and mulberry from the main sucking and rodent pests. It can be stored for at least 2 years in dry and cool conditions.

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