

THE USE AND ITS EFFECTIVENESS OF ADJUSTABLE CONTROL METHODS IN THE MANAGEMENT OF APPLE FRUIT BODIES

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Abstract: It is known to everyone that the application of the correct, timely and economically based system of agrotechnical measures has an effective effect on making the condition of plants resistant and more robust against various pests and diseases.

Key words: apple, branch, tree, carona, phytophages.

Introduction

In the studied areas, certain agro-measures, such as removing large branches and bark from the body, pruning branches, applying organic and mineral fertilizers, shaping on a scientific basis, were approached with distrust and performed poorly. Taking this into account, we have included the following additional agrotechnical measures that directly affect the reduction of pests in our system:

Research object and results

Thinning of branches of medium-sized trees In the holdings of Biokiyo intensive LLC in Andijan district and G. Kambarov garden in Izboskan district, the length of apple trees in orchards is rarely 8 m or more. During chemical treatments, the upper part of these trees does not reach the working solution and serves as a reserve for pests, affecting the effectiveness of treatments.

In horticultural farms of Andijan region, we recommend shortening tree branches to 2 meters and more, and their length is 5-6 meters. These events were held on an area of more than 6 hectares.

From the data presented in the table, it can be seen that when the branches (crown) of apple orchards were reduced to 2 meters, the damage of apple orchards by the fruit borer was reduced by 2 times compared to the control. Also, it was observed that the infestation with purple shields from companion pests was up to 8 times, and the number of other species was also significantly reduced. Without this method, even chemical treatments could not bring the amount of the main phytophagous species to an economically safe level. Our observations of companion pests show that before cutting the upper branches of the trees, the branches were 100% covered with purple shield, after this event, only 4-6 pests were found on a 10 cm branch. Reduction also affected the amount of plant saps and spider mites. The reason is observed by cutting thick branches, which serve as a gathering place for poison ivy belonging to this group.

Debranching also affected pest control to a lesser degree.

This is explained as follows, due to the high thickness and length of the branches (higher than 8-10 meters), it is not possible to carry out high-quality chemical treatments. At the same time, the thickness of the branches creates good conditions for the development of a number of phytophages

(bark-eaters, lice) due to the formation of an optimal microclimate between the branches. This reduction of branches in combination with annual shaping is an effective and important way to protect apples from many harmful insects.

The loss of root gardeners in early summer also affects the destruction of pests. In this case, the number of apple aphids and red blood aphids will decrease, because in the second half of summer, the above-mentioned pests prefer to feed on root beetles.

Table 1

The impact of agrotechnical measures against the apple borer in apple orchards on companion pests ("Biokimyo intensive" LLC in Andijan district and "G. Qambarov garden" in Izboskan district, 2016-2017)

Options	Damage rate, %					
	Apple fruit eater	Companion pests				
		Purple is a shield		Plant juices		Spider mites, e.g.
		leaf	branch	leaf	branch	
Control (idle)	5.9	59.1	31.6	28,3	19,9	122.8
Cutting tree branches	4.0	30.8	20.7	8,3	6,9	42.2
Reducing tree branches by 2 meters and carrying out all agro-technical activities	3.0	6.3	3.9	2,6	2,2	17.1
HCP _{0,05}	0.79	2.24	1.68	4.02	1.02	2.15

Cleaning the stems and branches of the main trunk and dead bark, in turn, plays an important role in the fight against the apple fruit eater, green leaf borer, and fruit mites. Debarking reduces overwintering larvae of the apple fruit borer by 50% or more, although certain pest species persist in branches, cavities and other hard-to-reach places. Full implementation of all agrotechnical measures can reduce the amount of damage to fruits by 12-15% apple fruit eater, 35-40% purple shield, 25-30% apple moth, 25-30% green leaf borer, 20% green apple weevil, red blood weevil and fruit mite. brings

Observations and calculations show that in orchards where chemical treatments have been carried out many times, outbreaks of certain types of pests have been observed between the rows and in the transverse parts of the orchards. In such gardens, their amount is quite high. The amount of natural enemies is less than these in gardens where only the field itself is cultivated, and the lawn parts are left uncultivated.

In 2015, in an intensive garden with an area of 10 hectares, the rows of the garden were treated 5 times in both directions. The development of fruit mites was observed in these areas. 85% of the

leaves were affected by spider mites, more than 100 mites were observed per 1 leaf. The increased use of chemical treatments in gardens may be due to the fact that pests have developed resistance to pesticides.

According to a number of researchers, the increase in the number of pests in gardens is explained by the systematic use of pesticides. However, in our conditions, multiple cultivation of rows in gardens plays a big role in increasing the number of pests.

Complete loss of inter-row plants in the garden deprives predators and free-eaters of additional nutrition in the sap of plant tissues, as well as aphids and other pests that feed on herbaceous plants, the hosts of the aphids. Also, the microclimate of the garden changes. During chemical treatments, dusts that have a negative effect on the number of predators rise and have a negative effect on the development of predators and predators.

In connection with the aforementioned, since 2015, cross-cutting has been canceled at the farm "Biokimyo intensive LLC" of Andijan district, and a green path remains between the trees.

Agrotechnical measures are important in carrying out the integrated control system in gardens.

The fight against garden pests and diseases is carried out mainly in two directions.

1. Prevention and warning: to prevent the multiplication of pests in fields, gardens, meadows and other crops, as well as in warehouses where agricultural crops are stored.
2. Eradication: Eradication of pests that cause damage to crops and threaten to kill crops. Garden pests are combated by agrotechnical, biological, chemical, mechanical, physical methods and quarantine measures are carried out.

Agrotechnical measures for the control of plant pests, diseases and weeds are mainly preventive measures. The advantage of these measures is that they protect against the appearance of harmful organisms in dangerous quantities and increase the resistance of plants to damage, increase the defense response of plants to the attack of pests and diseases, and also increase the effectiveness of protective measures.

As a result of agrotechnical measures, the following situations occur in fruit trees.

1st case; Healthy plants are resistant to pests and diseases by themselves, and using the method creates unfavorable conditions for the development of pests.

2nd case; Favorable conditions are created for the development and recovery of damaged trees.

As a result of proper implementation of agrotechnical measures, it is possible to create unfavorable conditions for pests, good growth and development of cultural plants, and favorable conditions for the reproduction of entomophages. Another advantage of agrotechnical measures is that the cultivated products are free from pesticide residues, and the fields provide opportunities for the development and reproduction of beneficial insects. In addition, implementation of the Agrotechnics method together with integrated measures is one of its advantages. This method often does not require additional costs.

In intensive gardening, agrotechnical measures are carried out as follows:

1. Cutting dead branches due to the effects of pests and diseases:
2. Regularly shaping and pruning trees, carrying out rejuvenation activities, picking fruits that have fallen due to disease and damage:

3. Weeding between garden rows:
4. Timely feeding with mineral fertilizers:
5. In early spring or late autumn, cleaning trees from dead bark and burning fallen waste, whitening tree trunks with lime, plowing the garden row to 40-45 cm, watering in winter will prevent the damage of pests.

When carrying out the above measures, the number of eggs, worms and adults of pests in the soil will decrease by 25-30%. Adding local and mineral fertilizers to the soil between garden rows creates favorable conditions for the growth of trees, increases their resistance to damage by harmful organisms. It should be noted that the simultaneous application of nitrogen fertilizers to the soil increases the damage of trees by powdery mildew, and on the contrary, fertilizers (using them in moderation, determining the ratio of NPK, is fruitful increases the resistance of trees to harmful organisms. It is necessary to use more ecologically safe methods in integrated pest control measures in agriculture. In practice, more chemical agents are used, and the physiological and biological characteristics of pests are not taken into account [4, p. 56].

In recent years, the use of pheromone traps has become popular, along with chemical and biological means, which are the basis of integrated control. Pheromone traps have the ability to determine the time of appearance of the population of pests in orchards, and prevent their spawning. Controlling the number of apple borers by preventing them from spawning is currently considered the most effective. In orchards, pheromone sticks containing the sex pheromone of apple fruit eaters are hung 2 meters above the ground. A non-drying entomological adhesive is applied to the bottom of the pheromone trap. A rubber capsule impregnated with a synthetic substance (female pheromone) is placed in it. The pheromone trap attracts the males of certain insects to the trap and forces them to stick to the sticky surface. Insect pheromones are made up of many structures, especially the pheromones produced by the females of the centipede can contain from 4 to 20 structures.

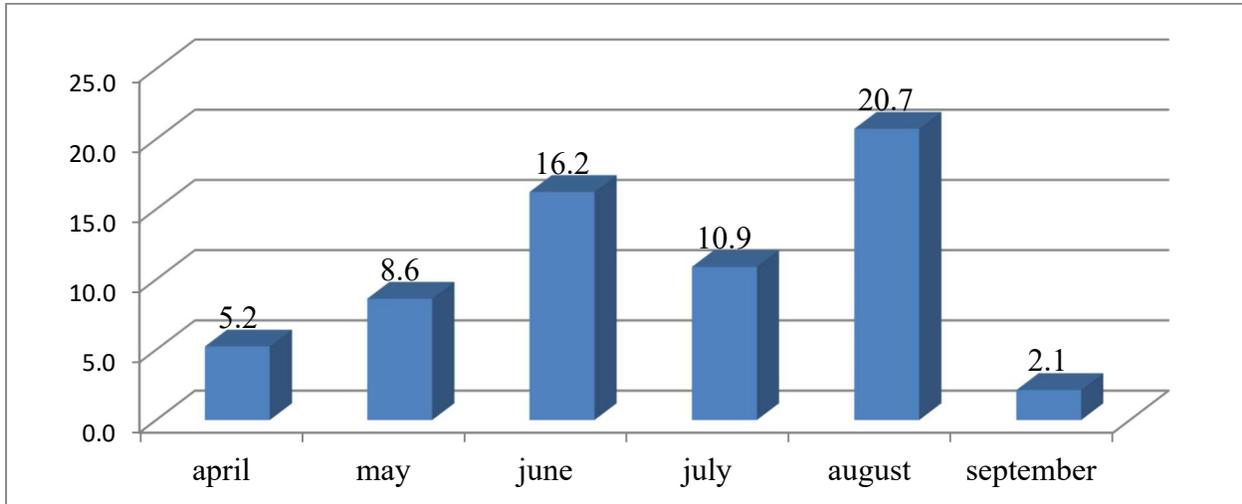
When protecting plants from pests, pheromone traps can be used to combat certain pests. For this purpose, there are 2 methods of practical application of this measure: the method of "sterilization" of butterflies through gross capture and the method of "distraction" of butterflies by saturating the protected environment with the pheromone smell of target insects. Therefore, V.N. According to Jimerikin, he mentioned that the method of "distracting" the breeds of oriental fruit-eater males in peaches ripening at different times in orchards turned out to be effective. This idea was expressed by B.P. Adashkevich and E. Gummel also noted that they conducted their research in the Ferghana Valley.

Various countermeasures have been developed by scientists to control the amount of apple borer, but not all of them are without drawbacks.

According to scientists, it was found that apple fruit eaters reproduce three times in the conditions of our country, but the majority of apple fruit eaters go to the village at the end of August.

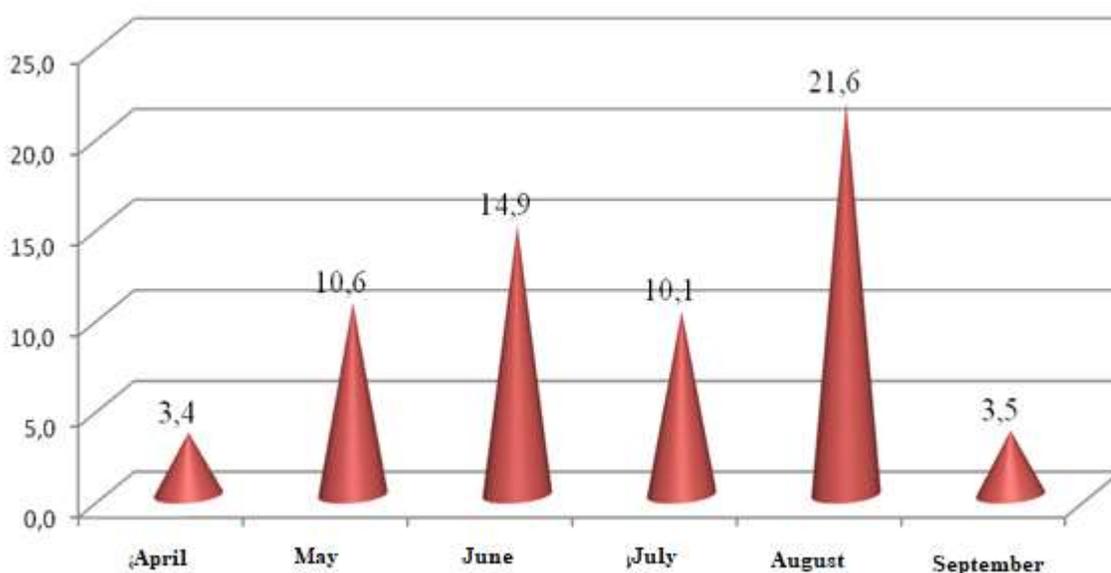
A number of studies have been conducted to determine the number of generations and their duration during years and seasons using pheromone traps against the apple fruit borer. According to it, it was observed in the Semirenkonavli orchard of the local 8-hectare apple farm "G.

Qambarov Bogi" of the Izboskan district of the Andijan region for three years (2015, 2016, 2017). First, it was studied on the basis of the long-term phenological development of the apple fruit fly and the analysis of the literature in the experimental area. Also, in monitoring the phenological development of apple borer, the sum of useful temperatures for generations was determined.



1 picture. Number of butterflies caught in pheromone traps, units (Andijan District, 2019)

In 2015, the pest exit period coincided with the beginning of April, and it was observed that on average 1 pheromone trap caught 5.2 pieces in April, 8.6 pieces in May, and 16.2 pieces in June. Also, in the following months, the landing of pest butterflies in traps varied according to the change in air temperature, that is, in July, the average landing of butterflies was 10.9, and in August, it was 20.7. In September, this indicator decreased sharply and made 2.1 units compared to the average month. The research was carried out from April, and pheromone traps were placed at a height of 2.5 m from the ground, 10 pieces, two pieces per hectare. Every 10 days, the entomological adhesive paper of the pheromone traps, and the sex pheromone capsules were replaced with a new one once a month. Trapped butterflies were counted every 3 days, first every 10 days, then averaged over the month, averages for generations were taken into account



2 pictures. The number of butterflies caught in Feramon traps, pieces (Izboskan district, 2019)

Also, in order to continue research, observations were made for the 2016 season.



Figure 3. Apple Fruit Eater Sex Pheromone Capsules and Trapped Apple Fruit Eater

According to the observations, the average number in April was 3.4 pieces, but in the first ten days, no pest butterflies fell into the traps.

The average number of butterflies in May was 10.0 pieces, and in June it was 13.8 pieces, in July it was 14.9 pieces, and in July it was 10.1 pieces, in August 21.6 pieces, in September of butterflies the amount of falling into the handles sharply decreased and made an average of 3.5 pieces.

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