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RODENTS OF COTTON

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Abstract : This in the article cotton to crops damage delivery person main rodent pests – cotton root , root worm , wire beetles and other insects biological and ecological characteristics , distribution status and they with fight measures illuminated . Pests deliverable damage , to productivity impact and ecological safe struggle methods importance scientific basically statement Also , agrotechnical and biological struggle measures efficiency analysis made .
Support phrases: Cotton rodent pests , Cotton Helicoverpa armigera), Root Worm (Agriotes spp.), Wire Beetles , Pests Biology , Development cycle , Pests against wrestling , Agrotechnics Events , Biological control Methods , Entomofauna monitoring, Ecological Security , Productivity impact .

Village farm crops between cotton of the plant place is incomparable . That is why this crop type pest and from diseases protection to do and high agricultural technology methods using productivity increase current from issues one is considered . Uzbekistan all cotton farming in the districts rodent pests of cotton harvest to the targets big damage delivers .

1. Turi – Sleep worm – (Heliothis armigera Hb .) (Oila – tunlams – Noctuidae . Turquoise – Butterflies – Lepidoptera.)

Wings 30-40 mm when writing , body 12-20 mm long goes . Previous wings in the center round , its above one by one to beans similar black There is a stain on the back . wings between colored crescent stain It will be . Insect complete variable to lay eggs of plants growth to the points and flowers based on places .

Eggs dome-shaped shaped is 0.5-0.7 mm in diameter and 0.4-0.5 mm in height . has . Eggs initially whitish-gray , then larva to the exit close brown to dream enters . From 4-6 days after from egg light blue white head larva comes out . Many without delay his head darkens and his body color and dark blue goes .

Worms fed when full to the ground falls and 5-12 cm to the depth enter to the mushroom The dome is 17-21 mm , and it is open . pink from yellow reddish-brown changing goes (Figure 1).

Butterfly 30-40mm	Egg 0.5-0.7 mm	Larva	Mushroom 17-21 mm

Figure 1 . I 'm sorry . worm [1] .

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In the fall chest worm fed plant in the field 10-12 cm of soil in the depth mushroom in the phase winter remains . In Koklam in April - May soil temperature to 16 ° C when rising flying comes out . Cossack worm In Uzbekistan one 3-4 times a year generation gives .

2. Type – Autumn tunlam – (Agrotis segetum Schiff.) (Family - night owls - Noctuidae). Category – Butterflies – Lepidoptera.)

Autumn night wings 40 mm when writing enough . Previous wings yellowish-gray , back wings white colorful Previous wing based on close in place wedge-shaped dark spot , wing in the center round and above renal There are stains .

Dome-shaped egg bulging , 0.65 mm . Autumn my night mature larva 5 cm tall until will be . Worm restless if done , round to form enter takes . The dome 14-20 mm long , light brown in color and last at the joint two tumor will be .

Autumn my night worms many village farm crops also cotton root to the throat close parts , ground to the page not released seed leaves , rolled up lying down the grass gnawing (Figure 2) .


Q anodes 40 mm when writing


Egg dome-shaped embossed 0.65 mm


Worm 5 cm


The dome length 14-20 mm

Figure 2 . Autumn I am tired .

Damaged cotyledons land to the page out when written in them symmetrical one in a way holes that there is see possible .

Autumn night one 3 times a year generation giving , bulging in the phase in the soil hibernates .

3. Tour – G'o'za leaf qurti (Karadrina) – (Spodoptera exigua (Hübner).) (Oila – Tunlamlar – Noctuidae . Turkum – Kapalaklar – Lepidoptera.)

Karadrina wings 23-30 mm, body when writing dark grayish is , they have two reddish colored spots to be with other from the tunnels difference does . Previous on the wings bean-shaped in the form of stains the first one wing in the center , the second round shaped and hungrier colored stain wing to the bottom close located will be . Next wings white with a baby will be .

Karadrina eggs ball-ball on top of that belly feathers lowering curtain puts . Eggs 0.5 mm , round edged will be .

Cotton leaf worm adult mature larvae 2.5 -3 cm to The head of the worms brown colored , body from light green dark to color . 13 mm brown dome colorful . The dome last at the end separately in relief located ventricle towards turning around standing two thorn it will be , that's it relief on top of later again two thorn located child . Karadrina dome 5 cm of soil until in the depth from the soil made in the nest (Figure 3).

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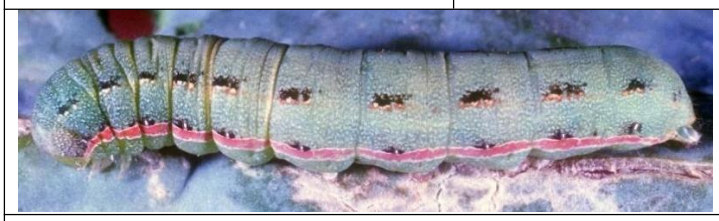
Karadrina wings when writing .	Eggs .	From an egg new came out larva
		
Worm's partially grown up larva	fifth month mature worms .	The dome .

Figure 3. Cotton leaf worm (Caradrina).

Cotton leaf worm often mushroom in case , some in cases egg and in the imago stage winters . Butterflies early in the spring flying come out , plant to the leaves egg sheep begins . From an egg came out larvae plant leaf gnawing is fed .

In Uzbekistan caradrine 5-6 times generation gives .

Cotton rodent pests against struggle methods :

In March-April:

1. Organize the application of Trichogramma at a rate of 0.5-1 grams per hectare against the eggs of the pest on weeds on the edges of the fields;

2. To determine the number of fall armyworm and bollworm butterflies in wheat fields planted between cotton rows, place one pheromone trap per 5-10 hectares of area and, based on this, release Trichogramma against armyworm eggs in the above-mentioned quantities,

3. Root caterpillar to the eggs against Trichogramma 1 gram 3 times a day for 4-5 days occasionally to put

In May :

1. May first ten from the day starting every 5-10 hectares cotton crops to the fields one by one pheromone handles to put organization to grow and to the handles fallen of butterflies from the number come out , 1-2 tunnels butterflies 3 times every 4-5 days when it comes to 1 gram per hectare trichogram to put ;

2. The hump worm in tomato generation middle and big aged to worms against pest to the number looking at to put poaching (in ratios of 1:20 or 1:10) done increase

June in the month of :

1. Cossack worm in cotton to the generation against installed pheromone handles renewal , 1 unit per 2 hectares pheromone handle to put organization to reach , to grasp one 2-3 butterflies per day when falling 1 gram per hectare 3 times every 4-5 days trichogram to put ;

2. In cotton chest worm middle and big aged to worms against per 100 bushels pest to the number in ratios of 1:20, 1:10 and 1:5 depending on poacher 3 times with an interval of 4-5 days to put

July in the month of :

1. Every 100 bushes 2-3 bundles of cotton worm eggs if , then the trichogram above shown quantity and in terms of time to put organization to grow ;

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2. The hump worm middle and big aged to worms against pest from the density come out , in ratios of 1:20, 1:10, 1:5 per hectare poacher horsemen to put ;

3. The moon third ten on the day chest worm eggs no to do for cracked of cotton growth points skirt collecting take , field to the edge remove buried to throw organization to grow ;

August in the month of :

1. Placed pheromone to the handles fallen chest worm butterflies to the amount looking at trichogram and poaching evening from 5:00 p.m. to 9:00 p.m. distribution above shown ratio and in terms of time to put continue to hold ;

2. Evening planted in cotton to pests against above shown entomophages to put continue to hold ;

Conclusion

To the cotton damage delivery person rodent pests village farm to productivity serious threat eater from factors is one . This in the article cotton in the fields occurring main rodent pests , their biological characteristics , living period , spread conditions and deliverable economic damage about information was given . Analyses this shows that this to pests against only chemical from tools use enough not , maybe agrotechnician and biological methods application , monitoring system strengthen necessary . Modern , ecological safe struggle measures working exit and to practice implementation to grow through cotton productivity stable storage and land and water resources preservation possible . Therefore , in the future this to pests against integrated protection systems develop current task become remains .

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