

Control Measures Against Bruhus on Leguminous Plants

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Abstract: Treatment of seeds of leguminous crops against Bruchids 20 days before sowing with insecticides disinfectants at a rate of 70% a.r. with Avalanche 5 kg / t and 35% k.sus Cruiser, 4 l / m at the end of the growing period retains 40-50% of the yield.

Keywords: legumes, grains, harmfulness, insecticides, disinfectants, biological efficiency, chemical treatment

INTRODUCTION

Legumes like other crops are heavily infected with various pests. Among these pests there are specialized ones and polyphages. Basically, specialized pests cause more harm than polyphages. Legumes also have such pests, and one of them is a weevil - Bruchidae.

According to the literature bean crops, chickpeas and mungbean are infected with this pest during the growing season and during storage in warehouses of up to 60-70%.

Currently, the primary goal is to develop measures to combat the above pests, and we conducted research work in this area for the period of 2012-2015.

RESEARCH METHODS

Testing of drugs (insecticide seed treatment) against the weevil on leguminous cultures was carried out in the farms of Tashkent and Kashkadarya regions. Thus the seeds of beans, mungbean and chickpea was treated with drugs 20 days before planting in a rate of 70% wp Avalanche 5 kg / t, and 35% sus.k. Cruiser, 4 l / t. Carrying out of the test and efficiency calculations were performed by the usual method [1, 3]. 5,000 seeds were viewed and analyzed from each option in order to determine the contamination of the harvested crop.

THE RESULTS OF RESEARCH

During the years of research, we have determined the infection up to 70-80% of the leguminous crops with bruchids during the growing season and during storage.

BIOLOGY

Bruchids (Bruchidae) are very mobile insects in hot and bright time of day. In spring, these pests

often heavily infect late sowing legumes in the phase of flowering and forming beans. Beetles of these pests feed on the nectar of flowers of legumes [4].

In conditions of Uzbekistan, there are 3 types of Bruchids - pea weevil - (*Bruchus pisorum* L.), four-point weevil - (*Callosebruchus maculatus* Z.) and bean weevil - (*Acanthoscelides obsoletus* Say.).

According to IF Pavlov [2], during the treatment of pea seeds before sowing against the pea weevil, efficiency was not observed and pea weevil infestation lasted during the growing season and during storage.

In our experiments, we observed the opposite data. Below are the results of experiments on bean crops, mungbean and chickpea. From the experimental results one can see that in the check option, the infestation of beans during the vegetation by Bruchids reached up to 48.4%, while in the experimental option, where the drug Avalanche was used (insecticide protectant) 70% w.p. at a rate of 5 kg / t against the Bruchids, beans infection was 9.7%. In a second option, where Cruiser 35% drug is applied at a rate of 4 l / t, bean weevil infestation was 13.3%.

The test results on mung crops shows that in the check option, infestation of mungbean seeds was 46.3% in the option with Avalanche 70% w.p. mung bean seed contamination was 3.8%, in the second option, where the drug Cruiser 35% was applied, one could observe 7.4% infestation.

In experiments, conducted on chickpea crops, in the control option, the resulting contamination of the crop by Bruchids was 45.7%. In an Avalanche 70% option, the infection was 10.6%, and 35% in the option with the Cruise. - 11.3% of the resulting crop.

Table 1: Biologic efficiency of protectants against seed beetles (bruchids) and leguminous plants (Uzbek Plant Protection Research Institute, Pilot Station, 2012-2015)

	Options	Applicati on rate, kg,l/t	Number of seeds' seen, pcs.			% of infectio n of seeds with bruchids , %	Average weight 1000 pieces of seed, gram		Preserve d crop in compari son with check, %
			Total	Out of which			Non infected, gram	infected, gram	
				Non infecte d	Infected				
Beans (Phaseolus vulgaris L)									
1.	Check (no treatment)	-	5000	2576	2424	48,4	152,1	112,7	-
2.	Avalanche 70% n .green (imidacloprid)	5	5000	4515	485	9,7	159,3	131,6	38,7
3.	Cruiser, 35% cyc.k. (thiametoxam)	4	5000	4335	665	13,3	157,0	129,4	35,1
Мам (Phaseolus aureus Pip)									
1.	Check (no treatment)	-	5000	2685	2315	46,3	77,1	39,3	-
2.	Avalanche 70% n .green (imidacloprid)	4	5000	4828	172	3,8	81,7	55,9	42,5
3.	Cruiser, 35% n.green. (thiametoxam)	5	5000	4627	373	7,4	80,7	52,1	38,9
Hyт (Cicer arietinum L)									
1.	Check (no treatment)	-	5000	2712	2288	45,7	219,1	116,0	-
2.	Avalanche 70% n .green (imidacloprid)	5	5000	4470	530	10,6	233,2	149,1	35,1
3.	Cruiser, 35% n.green. (thiametoxam)	4	5000	4435	565	11,3	228,0	145,1	34,4

CONCLUSION

From the results of scientific research one can make conclusions that the treatment of seeds of leguminous crops with protectants before 20 days to planting in a rate of 70% Avalanche 5 kg / t and 35% Cruiser, 4 l / t. the crop received will be less infected by Bruchids to 34.4% to 42.5%, than in crops with untreated plot (control). This method of control with weaver saves up to 40-50% of the crop from Bruchids (weaver).

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