



ECO-FRIENDLY METHOD TO CONTROL INSECT PEST AND AVOID ENVIRONMENTAL POLLUTION

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INTRODUCTION

Pigeon pea is cultivated in Madhya Pradesh to meet domestic requirement. Fourteen insecticides of different chemical groups were tested against pod borer complex i.e. Cypermethrin (0.015%), Lambda Cyhalothrin (0.05%), Deltamethrin (0.04%) and Quinolphos (0.03%) were highly effective in controlling pod borer complex giving good knock down effect.

Farmers use insecticides of different groups injudiciously which pose serious problems like killing of natural enemies and beneficial-insects, health hazards, environmental pollution. Neem contains Alkaloids, i.e. Azadirachtin which act as repellent, antifedent can be a part of insect pest management. Four different concentrations of neem is use to control insect pest and protect crop as well to avoid environmental pollution.

MATERIAL AND METHODS

Pigeon pea variety was sown in 8.1 m² in randomized Block design. Fifteen different insecticides were used to control insect pest and seed yield is recorded from each plot and then converted into per ha. The seed yield is calculated as shown in table. The Net profit (Rs/ha) is calculated.

RESULT

Among various insecticides use Cypermethrin, Lambda Cyhalothrin and Deltamethrin gave effective control with better grain yield (1449 kg / ha) with net profit of Rs 9847/ha and highest benefit cost ratio (15.43) Quinolphos also perform well but inferior to synthetic Pyrethroids. Refer to Table- A and B showing control measure by insecticides and bio-pesticides Neem.

Table A: Grain Yield by using Chemical Insecticides as control measures

S.No.	Chemical Insecticides	Concentration	Grain Yield	Avoidable Loss
1	Cypermethrine 25EC	0.015	1449	-
2	Lambda Cyhalothrin 5%EC	0.05	1423	1.79
3	Deltamethrin 25EC	0.04	1412	2.55
4	Quinolphos 25EC	0.03	1393	3.86
5	Triazophos 40EC	0.05	1307	9.79
6	Profenofos+Cypermethrin	0.05	1239	14.49
7	Endosulfan 35EC	0.07	1158	20.08
8	Monocrotophos 36SL	0.05	1142	21.18

9	Carbosulfan 25EC	0.05	1127	22.22
10	Methyl Parathion 50EC	0.05	993	31.46
11	Untreated control	-	849	41.40

Table B: Grain Yield by using Neem based products as control measures

S.No.	Neem based Insecticides	Concentration	Grain Yield	Avoidable Loss
1	Neem Seed Kernel Extract	5%	919	12.45
2	Neem Seed Kernel Extract	10%	928	13.30
3	Neem Leaf Extract	5%	918	13.39
4	Neem Leaf Extract	10%	903	14.81
5	Nimita	5%	851	19.71
6	Nimita	10%	902	14.90
7	Agrovit	5%	853	19.52
8	Agrovit	10%	914	13.77
9	Monocrotophos	0.05	1060	-
10	Simple control	-	720	32.07

DISCUSSION

The chemical means offer effective control measures but has got many disadvantages because this crop is used for human diet in the form of Dal and vegetables. The insecticides which are used to control insect pest like Endosulfan is neurotoxin while Cypermethrin kills various beneficial insects which help in pollination. Fishes are susceptible to Cypermethrin and causes nausea, headache, muscle weakness, salivation, paralysis or death. Deltamethrin causes adverse effect on soil to overcome this the bio-products will provide an alternate means for pest control, resurgence, pollution, problems of hazardous effect.

The four Neem based products with two different concentration for relative efficacy and compared with insecticide monocrotophos 36 sl @ 0.04% conc. with Neem leaf extract and Neem seed kernel extract of different concentration was found to be superior compared with other neem products.

SUMMARY

Insects grow on juvenile hormones. The insect larva feeds and grows and undergoes moulting. When pod borer sits on Pigeonpea (*cajanus cajan* L millsp) it starts on feeding on seeds and leaves through maxillary glands. Azadirachtin, Salanin, and Melandriol present in neem extract enter in the body of insects causes anti peristaltic movement in alimentary canal result stop in feeding process and invading activity is blocked.

RESULT

In place of chemical insecticides Neem bio pesticides is advisable to overcome environmental pollution.