THINK INDIA JOURNAL

ISSN:0971-1260
Vol-22-Issue-10-November-2019

Field Evaluation Of Snpv With Uv Protectent And Adjuvents Against Spodoptera On Cauliflower

Divya srivastava
Dherandra mahila PG College
srivastava.anand1965@gmail.com

INTRODUCTION–In India intensive agriculture using high yielding crop varieties resulted in accelerated use of chemical insecticides. Indiscriminate use of these agrochemicals resulted in development of resistance in insect and consequently poor yield. Entomologists were therefore forced to look at eco-friendly alternatives for pest management.(2) Due heavy infestation of S.litura causes -37 to 67 % losses in yield (3) Traditional insecticides are used to control the pest but are often inadequate (4) SNPV use with UV protectent and adjuvent gives effective result – This paper report effectiveness in field trials of SNPV with protectent against *Spodoptera .litura*on Cauliflower .

MATREIALS AND METHOD – The culture of S. litura was maintained in the laboratory on castor (*Ricinuscommunis L.*) in sanitary condition . A semi purified suspension of polyhedral occlusion bodies (POBs) was obtained from diseased dead larvae of S.litura .The impact of UV radiation on SNPV was studied by exposing variable concentration of POBs(10^3 ,10^4,10^5 and 10^6 POB/ml) for 0-15 minutes under UV bar of 60 watt at 20 cm distance. Effect of UV exposure time (5,10,15, and 20 minutes) and used protectants on bioefficacy of SNPV in terms of lethal time (LT 50) was studied by mixing the UV protectants(same concentration as mention earlier) further the mixture of UV protectant and viral solution was exposed to UV rays for 5,10,15and 20 minutes prior to carrying out the bioassay. Studies were conducted at Varanasi IIVR field .The experiment was laid out in RBD with 10 treatments in 3 replication . In this experiment different treatments consisted of NPV application alon and in combination with UV protectant and adjuvants against S. litura in cauliflower . The NPV spray application were givgn to the crop ,first at 30 days after transplanting and second at an interval of 7 days .First application coincided with appearance of early instar larvae in field . A commercial sticker, Triton X-100 was added @ 0.5 ml/litre of spray solution in all the NPV treatments . Data was recorded on larval count in 5 plants samples in each plot. The observation on larval population was recorded at 3 and 7 days after the NPV Application . Five plants were observed in each plot per replication.

RESULT-The data on population of S. litura larvae in different treatment recorded at pretreatment ,3 and 7 days after the first spray and 3,7,10 days after second spray is presented in table.Pre treatment mean larval population ranged between 7.0 and 7.9 larvae per sample in different plot . At 3 days after the spray all the treatment registered significantly lower larval population then the untreated control (9.4 larvae per sample). Lowest population 5.86 larvae was recordrd in the treatment of NPV +Ranipal (0.5%) ,NPV +Robin Blue (0.5%) + Milk powder (1%) and endosulfan (0.07%) spray treatments.

Table; Effect of NPV, alone and in combination with UV protectent and adjuvants on mortality of SNPV on cauliflower.

SI.	Treatment	Mean larval population/sample*		
		Pre treatment	After first spray	After second spray

ISSN:0971-1260
Vol-22-Issue-10-November-2019

No.			3days	7 days	3 days	7 days	10 days
1	NPV 250 LE	7.46	7.93(2.81)	7.00(2.63)	2.26(1.48)	0.86 (0.92)	2.33 (1.67)
2	Endosulfan(0.07%)	7.46	6.00(2.44)	5.46(2.88)	1.26(1.11)	0.26 (0.50)	1.00 (1.22)
3	NPV 250 LE +Robinblue(0.5%)	7.98	5.93(2.42)	5.60(2.35)	1.26(1.12)	0.88 (0.56)	0.66 (1.05)
4	NPV250LE + Milkpowder(1.5%)	7.38	6.00(2.44)	5.46(2.33)	1.00 (0.99)	0.88 (0.55)	0.88 (0.88)
5	NPV250LE + Rainpal(0.5%)	7.86	5.86 (2.41)	4.93(2.21)	0.98 (0.96)	0.26 (0.50)	0.0 (0.70)
6	NPV250LE+Crude sugar(1.0%)	7.00	6.26 (2.49)	5.60(2.36)	0.86 (0.92)	0.26 (0.50)	0.00 (0.70)
7	NPV250LE+Boric acid(0.5%)	7.53	6,18(2.46)	5.58(2.34)	1.06 (1.08)	0.46 (0.65)	0.00 (1.05)
8	NPV250LE+Robinblue(0.5%)crude suger(1.0%)	7.66	6.73(2.53)	5.53(2.34)	1.60 (1.08)	0.26 (0.50)	0.00 (0.70)
9	NPV 250LE+Borice acid (0.5%)Ranipal (0.5%)	7.18	7.46	5.33(2.30)	1.06 (1.03)	0.26 (0.50)	0.00 (0.70)
10	control	7 .26	9.40(3.06)	9.20(3.03)	3.86(1.95)	1.46(1.19)	4.33(2.19)
Sem	CD(P=0.5)	0.35 NS	0.06 0.19	0.05 0.16	0.09 0.22	0.07 0.21	0.10 0.30

Mean of 15 sample*

Figure in parenthesis are ((X+0.5)^0.5) transformed value.

DISCUSSION–Application of NPV with adjuvent and UV protectant proved better as compare to the application of NPV alone.Treatment having different adjuvents and UV protectants did not show significant variation in larval population , whereas NPV and milk power combnation gave better result Althought the crop condition of different exerpriment plot was uniform in all repect ,some major damage due to larvae feeding was observed in control experiment plot ..

REFERENCES

1. Kumar,C.M.S. and Rabindra , J., (2003). Influence of dietary vegetable oil on the tobacco *Spodopteralitura*(Fab.) and its NPV infection. J. Biol . Control, 17(1);57-61.
2. Rabindra , R. J., Sathiah, N., Muthanah, C. and Jayaraj, S.,(1989). Controlled droplet application of NPV with adjuvants and UV protectants for the control of *Heliothisarmigera*(Hbn.) on chickpea Journal of Biological Control, 3(1);37-39.