

**Light trapping of *Raphidopalpa foveicollis* (Coleoptera: Chrysomelidae)
insect pest during standing crop of *Luffa cylendrica* at Bichpuri
Block of Agra (U.P.)**

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ABSTRACT

Raphidopalpa foveicollis adult are not directly damaging the standing crops of *Luffa cylendrica* but their larva do. *Raphidopalpa foveicollis* of order Coleoptera is one of the important destructive agent of *Luffa cylendrica* during standing crop. It has high rate of reproduction and short life span. They have the ability to multiply the amazing numbers. The use of chemical pesticides led to many problems like bio-magnification and resistance in addition to toxic effect to the non-target species.

Adults are positively phototropic and attracted toward artificial light. Light trapping is a mechanical process by which without any side effect of crop. We can control the population of such serious pest as by light trapping we can control egg laying of such pest. During experiment successful finding have reported with three colors of light in which green, yellow and red colors light used to find that *Raphidopalpa foveicollis* attracted more in light of wave length 580 μ and 700 μ i.e. is yellow light. *Raphidopalpa foveicollis* has no sexual variation during light trapping in the field of *Luffa cylendrica*. Insect light trapping is not use for pest control but it is very important as to indicate information of the presence of specific pest for which we can apply selected pesticides only as some pollinators insects may be protected. Present finding is useful as light trapping in the cultivated field of *Luffa cylendrica* use as monitoring of specific insects pests.

Keywords: *Standing Crops, Phytophagous, Light Traps, Wavelength*

INTRODUCTION

Various chemical attractants and repellents for phytophagous insects in several plants have been used but these chemical give side effects to productivity of food as well as also harmful for pollinators insects. With the help of light trapping of insect pest, we can also relate environmental aspects with population of different insect pest and their life span related to environment. The use of light traps as an entomological survey device has been in vague for long time than the other sampling devices like sweepnet, sticky traps, pheromone traps etc. Light traps are especially suited to nocturnal flying insects over a large area. In recent time the value of light traps in "***Integrated pest management programme***" is being stressed and such an integrated approach is highly essential for the management of pest. Light trapping is a mechanical process by which without any side effect of crop, we can control the population of such serious pest as by light trapping we can control eggs laying of such pest (Bhatnagar and Devies, 1979; Goel, 1976a; Rowleyni and Jorgensen, 1967 and Mehta *et al.*, 2007).

MATERIALS AND METHODS

Following instruments have used for light trapping with the field of *Luffa cylendrica*.

1. Jermy type light trap
2. The killing jar filled with ethanol (C_2H_5OH)
3. Humidity meter.
4. Thermo merter
5. The insect which caught by light trapping have not get in contact with the chloroform for killing jar because of its strong fat dissolving action.

The new design of light trap (Jermy type light trap model) was used to recorded in the trap contents. Light Trap using to 250 watt mercury vapour bulb in the experimental field of *Luffa cylendrica*.

RESULTS AND DISCUSSION

Table 1

Attraction of *Raphidopalpa foveicollis* (Coleoptera) to different colour sources of incandescent light in the field of *Luffa cylendrica*

Sl. NO.	Standard week no.	Temperature			R.H. (Relative Humidity)	<i>Raphidopalpa foveicollis</i>		
		Max.	Min	Mean		GREEN	YELLOW	RED
1	38	29.01	17.34	23.18	74.00	14(1.15)	130(2.11)	3(0.48)
2	39	22.78	15.20	18.99	68.00	12(1.08)	102(2.01)	11(1.04)
3	40	27.87	23.58	25.72	67.00	19(1.28)	135(2.13)	48(1.68)
4	41	36.33	26.81	31.57	72.00	17(1.23)	115(2.06)	32(1.51)
5	42	37.96	31.21	34.59	59.00	24(1.38)	123(2.09)	36(1.48)
6	43	42.01	34.54	38.28	32.00	20(1.3)	87(1.94)	11(1.04)
7	44	39.02	29.6	34.19	39.00	32(1.51)	64(1.81)	25(1.4)
					Mean	1.28	2.02	1.23
					Percentage (%) Catch	28.16	44.62	27.22

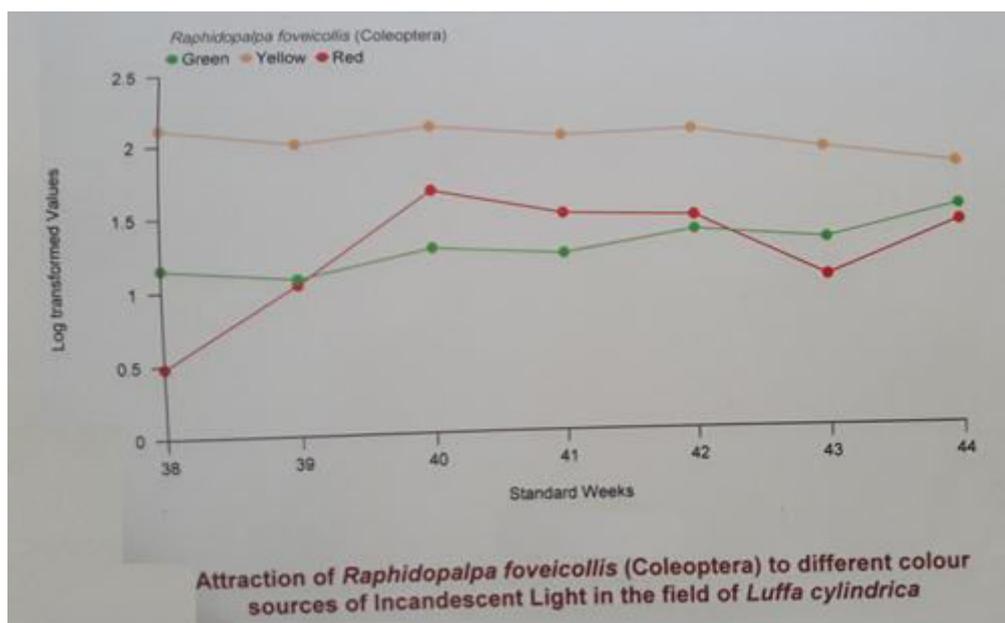


Fig. 1

During experiments successful finding have reported with three colors of light in which green, yellow and red colors light used to find out that *Raphidopalpa foveicollis* attracted more in light of wave length 580 μ and 700 μ i.e. yellow lights. Experimental data shows that yellow light is more attractant to *Raphidopalpa foveicollis* i.e. the wave length of the light between 580 μ and 700 μ . During experiment main abiotic factors are temperature and humidity, which showed their effect as approximate 26 degree Celsius temperature and 67 relative humidity are responsible for increase the population of *Raphidopalpa foveicollis* (Table 1, Fig. 1).

From the experimental finding it is clear that *Raphidopalpa foveicollis* have more efficacy in yellow monochromatic light ray of wave length 580 μ and 700 μ . This work supported by Calcote and Smith ,1974., Pandey *et al.*, 2001; Verma *et al.*, 2006; Verma *et al.*, 1982; Vinod *et al.*, 2007 and Vora and Ram Krishnan, 1991. This will give more light against pesticidal use for vegetable crops production.

This mechanical process for insect pest management will replace the use of synthetic pesticides.

CONCLUSION

Light trapping is a mechanical, more successful method for pest management of standing crops and by this method a number of pollinators and other organism remain safe and no experimental Hazard created as by using synthetic pesticide in general. Light trapping is ecofriendly method of standing crops protection by these method synthetic pesticides can be over look light trapping method is safer.

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