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The color attraction of white fly (*Bemisia Tabaci*) through sticky cards in brinjal Crop

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Abstract
In eggplant (*Solanum melongena* L) the management practices for insect pests rely heavily on scheduled insecticide applications. Whitefly *Bemisiatabaci* that mainly infests eggplant, there was an urgent need to develop a sustainable control system, Integrated Pest Management (IPM) approach. Successful IPM is based on control options that are economically sound, environmentally acceptable and user friendly. Whiteflies use their piercing, needlelike mouth parts to suck sap from phloem, the food-conducting tissues in plant stems and leaves. Yellow sticky traps are a commonly used method for population monitoring of many pests. The experiment trial was conducted at Rice Research Institute Dokri, Larkana to evaluate the color attraction of white fly (*Bemisiatabaci*) through sticky cards in brinjal crop, cards were placed randomly in brinjal field.

Keywords: sticky traps, monitoring, whiteflies, brinjal

1. Introduction
In Aubergines (Solanum melongena L), insects are largely dependent on the applied application of insect insects. Many species of one egg and leaves (*Thapps Spp*. and *Franklinella Sp*.). Other minor insects that have a chain of insects, also attack those crops. In these crops, with a restricted number of registered insects, there was urgent need to increase or diversify the registered quantity or type of registered product to develop the perspective control system, the practice and integrated pest Management (IPM) view point. The beneficial activity of the was important in effect or meaning to previous research project exploring practices of main pests of these crops, Those who were found generally were parasites and predatory insects which are lady bird beetle, bugs and lacewing. Successful MIP is based on control options that are economically suitable, environmentally acceptable and easy to use, and so on market producing production. In recent times Silverleaf whitefly (*Bemisia tabaci*) are common potentially major pest of Brinjal. Whitefly can become a problem under dry warm conditions. White flies suck the juice from plants, or otherwise change the leaves of yellow shades, and if the infections are severe, its rate of decline reduces. Insects have created honey and promote road development, which reduce photosynthesis and reduce the strength of the plant. White flies feeding by can also cause due to unusual cooking by fruit and fruit disorders. These insects are some vegetarian vectors, and these pests are vectors of some plant viruses. Different insect pests are reported on brinjal crop which are stem borers, fruit and shoot borers, leaf hoppers, Aphids, Thrips, Mites and white flies which are causing and damaging to eggplant. Different approaches to use and control to these insect to brinjal crop through IPM. White flies usually put their little eggs at the under sides of leaves. Egg size, and small white sizes gradually increase the size through four stages of syrup in shape. The first nymph stage (crawler) is also apparently visible with hand lenses. Crawlers move for several hours before they start feeding. Steps of the moisture are thick, high and tall, small bugs, such as small legs and antenna like small scale insects.
Different tactics are use to control white fly, among all Sticky cards traps frequently used in pest control to catch and monitor insects and other pests. Typically sticky cards consist of a sticky layer mounted on a piece of cardboard/Cards that is folded into a tent-structure to protect the sticky surface. Most sticky traps contain no pesticides, although some may be impregnated with aromas designed to be attractive to certain pests. In current studies white fly preference to colors were evaluated with different color trap cards in field conditions. White flies are very destructive insect pests that suck the sap of plant leaves, stems buds and flowers etc. (Mohd Rasdi 2005) [7].

Chapter.02
Materials and Method
The experiment trial was conducted at Rice Research Institute Dokri, Larkana. The experimental trial was conducted to evaluate "The color attraction of White fly (*Bemisia Tabaci*) through sticky cards in Brinjal Crop". The Data was collected from 08 December to 08 January 2017 (One month Period).
There were 04 Treatments and 03 replications in conducted trial. The Data was collected on every 72 hours after pacing sticky cards in filed. The population of White fly observed from cards for evaluation of White fly attraction to different colors. Cards were placed randomly in Brinjal field. Cards were placed in morning time. Total 06 observations were taken in one month period.
The experimental details are as under
Total observation: 06
Treatment: 04
Replication: 03

Plots size: 21780
Data collection Time: One Month
Collected data was analyzed through mean and percentage.

Chapter.03
Results

Table 1: Mean of different Sticky Cards used to evaluate the color attraction of White fly (*Bemisia tabacci*)

Observation	Date	Rep.	Green	R2- L. Green	R3- Yellow	R4- Pink
01	10-12-16	01	103.5	21.5	33.0	30.4
		02	110.0	24.5	45.0	43.0
		03	89.5	21.0	44.5	44.5
02	12-12-16	01	102.5	44.4	32.0	30.0
		02	88.5	21.0	40.5	29.0
		03	97.0	35.5	50.5	34.5
03	14-12-16	01	100.5	33.0	44.5	32.0
		02	99.5	37.0	39.5	45.0
		03	81.0	21.0	41.5	38.0
04	16-12-16	01	88.5	27.7	45.0	37.0
		02	87.0	25.0	50.5	19.0
		03	91.3	33.0	30.4	21.5
05	18-12-16	01	93.7	31.0	34.5	17.0
		02	87.0	36.0	38.8	21.0
		03	76.5	33.0	41.0	23.5
06	20-12-16	01	87.0	32.5	44.0	28.5
		02	88.0	21.0	42.0	34.0
		03	60.0	28.0	23.0	29.5
Mean			92.11	29.22	40.01	30.96

Table 2: Temperature, Humidity and Wind recorded during data collection.

Date	Temperature °C		Humidity	Wind
	Minimum	Maximum		
15-12-16	32	22	25%	7km/h
16-12-16	11	27	25%	7km/h
17-12-16	15	02	28%	8km/h
18-12-16	22	01	48%	6km/h
19-12-16	12	31	48%	6kn/h
20-12-16	11	30	41%	5km/h
21-12-16	11	31	44%	4km/h
22-12-16	13	31	31%	5km/h
23-12-16	10	30	44%	4km/h
24-12-16	12	30	42%	7km/h
25-12-16	10	29	36%	6km/h
26-12-16	09	28	19%	7km/h
27-12-16	09	29	39%	12km/h
28-12-16	08	27	31%	6km/h
29-12-16	04	28	50%	5km/h
30-12-16	07	25	50%	7km/h
31-12-16	05	28	46%	8km/h
01-01-17	07	30	31	5km/h
02-01-17	06	31	28%	7km/h

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