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# Study of Weather parameters of Vectors like Aphids and whiteflies incidence

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**Abstract**
Insect vectors like Aphid (*Aphis gossypii*) and whitefly (*Bemisia tabaci*) population is found increased depending on weather conditions which are found fluctuating and mostly prominent in North India especially Eastern Uttar Pradesh. There are found prominent fluctuations in weather conditions. Accordingly, the incidence parameters are also found varied and hence the frequency on leaves and then directly the disease symptomatic appearance.

**Keywords:** vectors, Aphid, *Aphis gossypii*, whitefly, *Bemisia tabaci*

## 1. Introduction
The weather fluctuations are variable in maximum and minimum parameters in reference with temperature, RH (relative humidity), rainfall, wind velocity and light intensity. Aphid (Aphis gossypii) and whitefly (Bemisia tabaci) incidence showed distinct co-relation with fluctuations in temperature and relative humidity. The incidence of vectors is recorded by use of yellow sticky traps. The density of incidence is done by counting the number of vectors on whole plant body specially concentrating on lower ventral surface (Abaxial surface). The data obtained are recorded and then analytically co-related.

## Method
The pooted plants are well prepared in required number in replicates. If the observations have to be done in field, then plot size is measured and calculated. In this case the experiments were done by taking both categories for getting better mean average results. The yellow sticky traps used as trappers of insects were wrapped over with yellow polythene for its insect's attractive capability by its color. The direction of traps is changed with variation of sunlight in different for setting of vectors. The observations are done very carefully throughout months of years in relation to weather parameters for incidence from trap catches.

**Observation, findings and analytic Computation**

| Experimental Crop | Weather conditions | Aphid incidence % | Whitefly incidence % | Percentage (Average for both) of incidence per unit area of traps |
|---|---|---|---|---|
| Mung | Temp | 60 | 65 | 62.5 |
| | $R_H$ | 89 | 79 | 80 |
| | Rainfall | 56 | 47 | 51.5 |
| | WindVelocity | 42 | 39 | 40.5 |

| Vector | Trap count per 1000 $cm^2$ trap area | Count from 100 plants taken with 50 leaves | Count number % for one plant |
|---|---|---|---|
| Aphid | 800 | 500 leaves | 1.6 |
| Whitefly | 690 | 500 leaves | 1.38 |

**Discussion**

Due to prominent fluctuations in weather conditions, the viral symptoms appearance was also found to be fluctuating. The symptoms appearance directly reflects the ecological climatic fluctuations and hence also reveals the population density gradient. By observing the above tables, the most condusive fluctuation which is favourable for vector is $R_H$ (relative humidity) as analytic data reveals therefore for better production of crops- $R_H$ parameter should be kept in mind.

**Conclusion**

Cumulative effect of all parameters of weather should be considered as required necessity.

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