

## EFFECT OF NEEM (*Azadirachta indica A. juss*) PRODUCTS ON DISEASE INCIDENCE TRANSMITTED BY WHITE FLY (*B. tabaci*) IN BHINDI PLANT

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### ABSTRACT

**Effect of Neem products such as Neem Azal, Neem insecticidal soap, Dimecron, Achook and control on disease incidence transmitted by white fly (*B. tabaci*) in *Abelmoschus esculentus* (Bhindi) was studied. The efficacy of Neem based insecticide formulations were effective alternation to the synthetic insecticides.**

**KEYWORD:** *Azadirachta indica*, White Fly, Pesticide.

*Azadirachta indica A. juss* (syn *Melia azadirachta* Linn) *M. indica* is a highly esteemed tree. (Jayaraj, S. 1993). It is universally recognized tree due to its plethora of Biological activities. These include excellent insecticidal various medicinal properties and repellent effects and biocontrol of pests. (Ranjana Gupta - Personal Publication).

Biocontrol is an alternate strategy to chemical pesticides, which have created environmental health hazards besides being building resistance in it. (Alam. M. Kashkoo 1991)

### MATERIAL AND METHODS

For the evaluation of Neem products for biocontrol of viral diseases of vegetable crops, seasonal vegetable crop; Bhindi (*Abelmoschus esculentus*) was grown and used as test plant. Garden soil were mixed with FYM for raising the plants. (Bhawani, T. and Rao, G. P. V. (1991)

Virus transmission was attained by mechanical transmission in which young virus infected leaves of infected host plants showing prominent symptoms were macerated to pulp with simultaneous addition of distilled water. (Parmar, B. S. and Ketkar, C. M. 1993). The slurry were squeezed through double folds of muslin cloth. Sap was centrifuged and the supernatant thus obtained were used as inoculum. Introduction was made with the fore finger dipped in inoculum by rubbing the leaves of test plants. 15 minute after inoculation the leaves were washed with water. The White fly (*Besimia tabaci*) on the leaf surface were moved with the tip of brush moistened with water. (Sharma, P. D. 1998).

Collected in a beaker covered with muslin cloth for starvation. After starvation the White fly were

transferred to health plants.

The antivectoral effect of Neem was seen on the transmission of Bhindi YVMV by White fly (*B. tabaci*) vector on Bhindi Figure - 1. 10 Bhindi plants were taken for each treatment. They were sprayed before 10 - 15 minute of inoculation feeding. (Table No.01)

The plants were kept covered in cages during the duration of the experiment in the glass house. They were observed for symptom appearance.

**Table 1: Antiviral Effect of Neem**

| Products Used          | Treatment |
|------------------------|-----------|
| Neem Azal              | 4 ml/L    |
| Neem Insecticidal Soap | 4%        |
| Dimecron               | 0.02%     |
| Achook                 | 5 ml/L    |
| Control                | 50 ml     |

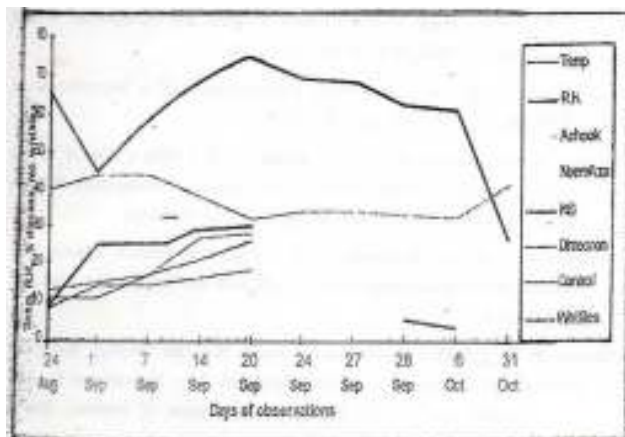
### RESULTS

Table showed that maximum disease incidence was observed in untreated Bhindi plants inoculated with viruliferous White flies whereas the minimum disease incidence was found in N. I. S. treated plants. Disease symptoms occurred equally in Neem Azal and Achook treated plants followed by Dimecron treated plants. Symptoms were delayed in N. I. S. treatment.

**Table 2: Effect of Neem product on disease incidence transmitted by White fly (*B. tabaci*) in Bhindi plants.**

| Treatment | % Disease Incidence |
|-----------|---------------------|
| NA        | 40% (39.23)         |
| NIS       | 30% (33.21)         |
| DIM       | 50% (45.00)         |
| Achook    | 40% (39.23)         |
| Control   | 70% (56.79)         |

Disease in descending order Cont > DIM > Achook > NA > NIS



**Figure 1: Effect of Weather Parameters Temperature (°C) and relative Humidity (%) on Disease incidence in Bhindi and on Whitefly Incidence.**

## DISCUSSION

In Bhindi the virus is transmitted by the White fly vector. *Bemisia tabaci*. This is an important vector of virus YVMV. In U. P. is also affect Mung and Urad crops. Control of this vector and virus diseases transmitted by it is important for plant protection. The

White fly vector is becoming immense to synthetic insecticides.

The efficacy of Neem based insecticide formulation has already been established as viable alternatives to the synthetic insecticides.

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