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# Formulation Effects for the control of Virus Vectors.

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#### Abstract

In north India weather is not found so stable and hence the climate changes are most prominent which are in some way more appropriate for in coming and incidence of virus vectors belonging to class-insecta and order- Hemiptere. Observations were based on after effect spraying of different formulations with Neem oil, Ordinary neem oil soap or Neem oil+detergent soap. Thus, soap provided emulsified medium. The experiments were mainly concentrated on aphid (*Aphis gossypii*) and whitefly (*Bemisia tabaci*)

Keywords: Vectors, whiteflies, Bemisia tabaci, Aphis gossypii, Hemiptere

#### 1. Introduction

The experiments were based on the observations of mortality rate of Hemipteran insects which come on to the plant leaf surfaces mostly for feeding as well as also for shelter for oviposition and pupal development process to be overcome. The different combinations of formulations were found to be effective during the condusive weather conditions or we can say in other words during overcrowding of insects on plants vector incidence showed sharp distinction between the aphid and whitefly and accordingly their mortality rate.

#### **Method/ Procedure**

The neem oil when mixed in equal concentration with detergent soap then the best emulsifier is obtained to proceed experiment. The liquid solution sprays were applied on the plant leaves, most effectively on under surfaces of leaves (Abaxial surfaces) where the insects settle over.

- Pre- treatment on leaves as well as direct treatment was applied where with Aphids and whiteflies on leaves.
- Some additions such as Mncl2, Cacl2 and sesame oil to enhance the stickness and longlasting property (Schauer, 1983). Til oil contains sesamin which provides stickness also for long lasting property.

#### Observation table, findings and analysis

1. Mortality effects by direct treatment of adults and nymph stages by spraying of formulation.

	_	-		
Aphid (Aphis gossypii) on Bhindi plant		Aphid (Aphis craccivora) on Cowpea		
Adults	Nymphs	Adults	Nymphs	
98	99	98	99	

Percentage mortality

2. Direct treatment effect on the mortality of whitefly (*Bemisia tabaci*) with insecticidal soap formulation.

Percentage	mortality
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Egg	Nymphs	Pupae	Adult whitefly
99	99	99	99

Pretreatment table

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	Percen			
Treatmont	Days a			
reatment	2	3	4	5
	days	days	days	days
Formulation with til oil 1%	78	81	45	
Formulation with til oil 2%	98	96	80	38

### Discussion

The different combinations of formulations have shown different results which were found well marked satisfactorily and can be used to maintain and manage cultivated crop for better field. The stickiness and long-lasting nature of treated formulations can be increased by til oil, Mncl<sub>2</sub>, Cacl<sub>2</sub>. The til oil has synergistic effect with neem seed bernel extract (*Schauer-1983*).

- A formulation was developed with soap containing neem oil and til oil so that 4 gm of soap dissolved in 100 ml. water could give a 4% soap solution containing 2% neem oil and 2% til oil. This formulation is in the form of soap cake which has been well tested for its insecticidal property.
- In the above observation tables the mortality rate was well with desired results which was nearly 100%.
- The mortality rate is depenent also on number of days for observation and also given satisfactory mortality rate percent with 2% treatment til oil which was most effective.

# Conclusion

For inoculation feeding experiments, healthy bhindi and cowpea plants were taken and viruliferous whiteflies were caged in on treated plants. The insecticidal soap formulation completely prevents feeding by whitleflies by causing whiteflies during the feeding period.

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