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Dr. R.K. Jain
 I.T. College, Botany
 Department, Lucknow, India.

Transmission Study of Bhindi Yellow Vein Mosaic virus by whitefly by the application of Neem oil

Dr. R.K. Jain

Abstract

Neem Oil (*Azadirachta indica*) spraying on plants before acquisition feeding or before inoculation feeding, there was seen effect on virus transmission by whiteflies (*Bemisia tabaci*) showing symptom were sprayed by Neem oil and for comparison point of view also sprayed by oxydemeton methyl and then the inoculation feeding time and acquisition feeding time were observed and analysed.

Keywords: Neem Oil, whiteflies, *Bemisia tabaci*, *Azadirachta indica*

1. Introduction

The whitefly (*Bemisia tabaci*) prefer to settle down on abaxial surfaces of plants as it has also been observed in adjacent fields with different crop plants. In other cultivated crops although the virus incidence was there but not so prominent and hence the frequency of transmission was lesser. The spray treatment effect also appears to vary with the host. Reduced disease incidence and transmission has been observed in both neem oil and oxydemeton methyl but differently.

Method

Required number of plants are taken into account in controlled environmental conditions to nullify the adjacent and surrounding climatic changes and for getting better and accurate results. In the field the number of infected and healthy plants for inoculation are sorted out. The plants are also found to be divided into equal numbers for comparative analysis both for treatment before acquisition and before inoculation feeding. The time for these is provided for 24 hrs. duration each.

Observation with analytic findings

Treatment	Treatment before acquisition feeding (disease incidence)	Treatment before inoculation feeding (disease incidence)
Neem oil 1%	80% infected	59% infected
Neem oil 2%	60% infected	0% infected
Neem oil 3%	69% infected	30% infected
Oxydemeton methyl 0.04 %	34% infected	18% infected

Discussion

Different concentrations of neem oil were taken into account both for acquisition and inoculation feeding. Along with spraying and inoculation, the effective neem oil (2%) was found more satisfactory as the disease incidence was found zero therefore transmission behaviour and pattern were also found to be retarded and in this case was found zero. Thus 2% concentration of neem oil is concentrated enough for the action to be demonstration. When 0.04% of oxydemeton was used it was found not so effective as it is synthetic chemical and so that 18% disease incidence is there, in treatment before acquisition. The higher concentration of oxyemeton is injurious to plants.

Correspondence:
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 I.T. College, Botany
 Department, Lucknow, India.

Conclusion

It is found that to some extent overall disease incidence and transmission are found decreased.

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