The Sustainable Management ofI dioscopus clypealis (Mango Leaf Hopper) at Ratnagiri District, India.

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Abstract

India is very famous for 'Alphonso Mango' in the international market. However, due to indiscriminate use of agrochemicals, growth regulators, and fertilizers, reduces the exportable quality of fruit. Therefore, it is well felt need to adopt sustainable pest management. In the cursory survey, it is found that Idioscopus clypealis (Mango leafhopper) is the major pest in the study area.

The present study aimed towards the development of bio-insecticide and to check its potential against Mango leafhopper. Strychnos nux vomica extract contains alkaloids (Strychnine and Brucine) which are responsible for the insecticidal property. The efhcacy of Srtychnos nux vomica extract against mango leafhopper was checked in three different solvents (viz. Petroleum ether, Ethanol, Ethyl acetate) and the value obtained was statistically significant **i.e. $p<0.05$.** From the phytotoxicity test, it is concluded that a high amount of Neem oil is not good for plant health. The liquid insecticide was formulated in the form of emulsifiable concentrates (EC).

Different concentrations are prepared and all four (A1, A2, A3, A4) concentrations of the formulation are further analyzed for the bioassay for 24 hrs. The bioassay results showed that the formulation 'A1' and 'A2' showed 100% mortality after 24 hrs.

showing optimum results in terms of phytotoxicity and bioassay. Hence, the 'A3' formulation was selected. However, by using probit analysis LC50 was carried out. The LC50 was observed at concentration i.e. 2.57%. Formulation 'A3' was further diluted to 5%, 10%, and 15% to analyze its critical concentration effectiveness against mango leafhopper (Idioscopus clypealis). From the mortality curve and through regression equation it is concluded that the critical concentration of 'A3' is 15% and it showed 78.57% mortality which is close to that of the mortality observed with Imidacloprid chemical insecticide (88.59 + 8.64) used frequently to manage mango leafhopper at the study area. Therefore, it is highly recommended to use newly formulated bio- insecticide for the effective management of mango leafhopper in the study area.

Biography:-

Dr. Tart Vinaya Satyawan Savitri is currently working as an "External Consultant" at GauEcoGram Agrovikas Producer Company Private Limited, Pune, Maharashtra, India. She has completed her Ph.D. in Environmental Science from the University of Mumbai. She did under graduation studies in Zoology, M.Sc. in Environmental Science, and a Diploma in Biotechnology (2 years) from the University of Mumbai and B.Ed. from S.N.D.T. University. She has qualified State Level Eligibility Test for Assistant Professorship valid in the states of Maharashtra and Goa, India. She has been awarded the 'Young Scientist Award' from Deccan Environmental Research Organization (DERO). She has attended around 33 conferences/ workshops/ webinars/ faculty development programme. She has published more than 20 research items in reputed journals, Magazines/e-Newsletters, and conferences. Her current research interests are Environmental economics, sustainable crop protection practices, botanical pesticide formulations & Environmental pollution. She has also engaged as a reviewer for various reputed journals. She has co-authored book chapters with several reputed publishers. She is a certified mentoron'Expertrons', for guiding students and professionals on their career path. She has collaborated with abroad countries such as Thailand, Qatar, Indonesia, Australia, etc.

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