

**STUDY ON TEA PESTS AND PESTICIDE HANDLING
PRACTICES IN TEA IN JHAPA AND ILAM DISTRICTS
OF NEPAL**

A dissertation

**Submitted For The Partial Fulfillment of the Requirement for Master's
Degree of Science in Zoology (Entomology)**

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ABSTRACT

Tea is a woody, perennial plant grown as a monoculture in the highest range of soil and climatic conditions. It provides a stable microclimate and a suitable habitat for a number of pest and diseases in different seasons with different damage pattern and intensity. A study was undertaken in two major tea producing districts i.e. Jhapa and Ilam in the year 2010 for investigating the status of different types of pests, pesticides application and pesticides handling practices followed by this firm. A random questionnaire survey and interviewed with the experienced persons working with tea and personal field visit revealed that the tea production is greatly hindered due to number of pests and diseases in both Jhapa and Ilam districts. So far, 8 Arthropods pests including 2 mites and 2 fungal diseases have been recorded. among them *Toxoptera aurantii*, Boyr, 1856, *Scirtothrips dorsalis*, Hood, 1919, *Helopeltis theivora*, Waterhouse, 1886, *Andraca bipunctata*, Walker, 1865, *Biston suppressaria*, Guenee, 1857 were recorded from both districts, whereas, *Empoasca flavescene*, Fabr., and *Gracilaria theivora*, Walsingham, 1891 was reported from Jhapa and *Melolontha melolontha*, Linnaeus, 1758 was reported from Ilam district only. Among these pests, *Toxoptera aurantii*(Aphids) and *Scirtothrips* Sp. (Thrips) was considered as major pests in both districts. It was also reported that the tea plant also suffered a lot by a various types of fungal diseases. From 2 recorded fungal diseases, i.e., Blister blight and Black rot, Blister blight is considered as a major one which is caused by a fungus called *Exobasidium vexans* (Masse, 1898) and it is more prominent in Ilam district because this fungus attacks young succulent growth on all teas when the environment is foggy, moist and cool.

Similarly, *Acaphylla theae*, Watt, 1903 (Pink mite) was recorded from Ilam and *Oligonychus coffeae*, Nietner, 1861 (Red Spider Mite) was recorded from Jhapa and hence they are considered as serious pest in this district but in Ilam they were regarded as minor pest. It was also found that different types of pesticides are also used during tea cultivation to control varieties of insect pest and diseases. Pesticides being toxic in nature do not differentiate between target and non target species and cause an array of adverse effects, notably death, diseases and birth defects among animals and human. Tea could be one of the valuable cash crops in Nepalese agro- economy but the pesticide residues in tea become one of the biggest and touching problems on export of Nepalese tea. At the same time, increased used pesticides has made pest immune to the chemicals. As a result the plant resistance to pest and disease has decline. It is also suggested to monitor the common tea pests and existing practices of pesticides applications, its handling and also use of IPM techniques as possible in Tea in Jhapa and Ilam district of Nepal.

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Survey Questionnaire

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Banned Pesticides in Nepal

ABBREVIATIONS AND ACRONYMS

%	Percentage
AC	Acaricides
A.D.	After Date
CBS	Central Bureau of Statistics
CDZ	Central Department of Zoology
CTV	Citrus Tristeza Virus
Dept.	Department
F	Fungicides
H	Herbicides
HOTPA	Himalayan Orthodox Tea Producing Association
i.e.	That is
I	Insecticides
IPM	Integrated Pest Management
KTE	Kanyam Tea Estate
Ltd.	Limited
m.	Meter
mm.	Milliliter
MRL	Maximum Residue Level
Mt.	Metric ton
NTCDB	National Tea and Coffee Development Board

NTDC	Nepal Tea Development Corporation
Oc	Organochlorine
Op	Organophosphate
Pvt.	Private
Py	Pyrethroids
Rs.	Rupees
Sq. km.	Square Kilometer
VDC	Village Development Committee
WHO	World Health Organization