

**FUNGITOXICITY OF ESSENTIAL OILS AND EXTRACT OF
SOME AROMATIC PLANTS AGAINST *FUSARIUM*
OXYSPORUM FROM *CARICA PAPAYA***

A Dissertation

Submitted for the Partial Fulfillment of M.Sc. in Botany

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RECOMMENDATION

This is to certify that **Mr. Kumar Kamlendram** has carried out the dissertation work entitled "**FUNGITOXICITY OF ESSENTIAL OILS AND EXTRACT OF SOME AROMATIC PLANTS AGAINST *FUSARIUM OXYSPORUM***" under my supervision. The entire work is based on the collection of primary data by student. This result has not been submitted elsewhere for any other academic degree. I, therefore, recommend this dissertation to be the partial fulfillment of Master's Degree in Botany from Tribhuvan University, Nepal.

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LETTER OF APPROVAL

This dissertation entitled "**FUNGITOXICITY OF ESSENTIAL OILS AND EXTRACT OF SOME AROMATIC PLANTS AGAINST *FUSARIUM OXYSPORUM***" submitted by Mr. Kumar Kamlendram has been requirement for Master's Degree of science in Botany.

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ABSTRACT

The infected papaya were collected from the local market of Kathmandu. The fungus was isolated and identified as *Fusarium oxysporum*, that cause surface rot of Papaya. Pathogenicity test was carried out for the conformation of disease. For the control measures, the essential oils and extracts of 5 aromatic plants viz. *Acorus calamus*, *Mentha arvensis*, *Cymbopogon flexuosus*, *Cinnamomum tamala* and *Xanthoxylum armatum* were used and assessed their fungitoxic effect against the test fungus. Each essential oils and extracts was diluted to different concentrations and the value of minimum inhibitory concentration (MIC) were obtained. The MIC of oil and extracts are 2.5 and 10 ~ lml⁻¹ for *Cymbopogon flexuosus*, 10 and 40 ~ lml⁻¹ for *Mentha arvensis*, 20 and 60 ~ lml⁻¹ for *Xanthoxylum armatum*, 40 and 80 ~ lml⁻¹ for *Acorus calamus* and 40 and 120 ~ lml⁻¹ for *Cinnamomum tamala* respectively.

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ABBREVIATIONS

ALT	-	Altitude
T.U	-	Tribhuvan University
CDB	-	Central Department of Botany
S.N	-	Serial number
Sq	-	Square
cm	-	centimeter
m	-	meter
gm	-	gram
ml	-	Millilitre
~ l/ml	-	Micro liter per milli liter
ppm	-	Part per million
Gc	-	Gas chromatography
HPPCL	-	Herb Production and Processing Co. Ltd.
MAPS	-	Medicinal and aromatic plants
MIC	-	Minimum inhibitory concentration
mm	-	millimeter
km	-	kilometer
NARC	-	National Agricultural Research Council
CHC	-	Central Horticulture Centre
NTFPs	-	Non-timber forest products
PDA	-	Potato Dextrose Agar
TLC	-	Thin layer chromatography
WEC	-	Western, Eastern and Central