

**Evaluation of Tomato Cultivars Against  
Root-knot Nematodes (*Meloidogyne* spp.)  
In Screen House**

*A thesis submitted in partial fulfillment of the Master's degree in  
Zoology with special paper Parasitology*

**Submitted by**

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**Submitted to**

**Central Department of Zoology  
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## LETTER OF RECOMMENDATION

It is pleasure to mention here that Miss Purni Lama has completed her dissertation work entitled "**EVALUATION OF TOMATO CULTIVARS AGAINST ROOT-KNOT NEMATODES (*Meloidogyne spp*) IN SCREEN HOUSE**" under my supervision. To the best of my knowledge, her work has not been submitted in any publications and for any other degree.

I recommend for the acceptance of this dissertation in partial fulfillment of Master's Degree in Zoology.

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On the recommendation of supervisor Prof. Dr. Ranjana Gupta, this dissertation work of Miss Purni Lama has been accepted as a partial fulfillment of Master's Degree in Zoology of Institute of Science and Technology, T.U.

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## **CERTIFICATE OF APPROVAL**

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## ABSTRACT

Root-knot nematodes, *Meloidogyne spp* are important pathogen affecting vegetable production including tomato (*Lycopersicon esculentum*); which is popular vegetable crop grown in Nepal. A study was conducted in the screen house under pot conditions to evaluate the response of fourteen tomato cultivars (*Nildhari, Yashwant, Hybrid 1506, Yumi, Lehar, Avinash, CLN 2545 B, CLN 2026 D, HRD-2, HRD-7, C-315, Nayak - B- SS-422, Pusa Ruby* and *T-597-5*) against root-knot nematode *Meloidogyne spp*. All together 70 pots with five replications inoculated with 4 eggs per gram of soil were placed in RCBD. Nematodes were extracted from the whole root and 100g soil sub sample after 36 days of inoculation. Analysis of the data showed that the cultivars *Nildhari, Yashwant, Hybrid 1506, Yumi, CLN 2545 B, CLN 2026 D, HRD- 2* were highly susceptible compare to *Avinash, HRD - 7* followed by *Lehar, Pusa Ruby* while *C-315, Nayak - B-SS-422* were moderately resistant. Cultivar *T - 597-5* was found resistant to *Meloidogyne spp*.

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**Key words:** *Meloidogyne spp*. Tomato, cultivars (*Nildhari, Yashwant, Hybrid 1506, Yumi, Lehar, Avinash, CLN 2545 B, CLN 2026 D, HRD-2, HRD-7, C-315, Nayak - B-SS-422, Pusa Ruby T-597-5*)

# CONTENTS

<b>Page</b>		
<b>Letter of Recommendation</b>		<b>i</b>
<b>Letter of Approval</b>		<b>ii</b>
<b>Letter of Acceptance</b>		<b>iii</b>
<b>List of Figures</b>	<b>vi</b>	
<b>List of Tables</b>		
<b>vii</b>		
<b>Abbreviations and Acronyms</b>		
<b>viii</b>		
<b>Acknowledgement</b>		<b>ix</b>
<b>Abstract</b>		<b>x</b>
<b>1. INTRODUCTION</b>	<b>1</b>	
1.1 Significance of the study		
4		
1.2 Limitations of the study		
4		
<b>2. INTRODUCTION OF <i>MELOIDOGYNE</i> SPP.</b>		
<b>5</b>		
Taxonomic position of <i>Meloidogyne</i> spp.	5	
Morphological description of <i>Meloidogyne</i> spp.	5	
Measurement	5	
Host range	7	
General symptoms and feeding behavior	8	
Life cycle	10	
Reproduction	10	
Sex determination	11	
Host-parasite relationship	12	
Ecology	13	
<b>3. OBJECTIVE</b>		
<b>15</b>		
3.1 General objective		
15		
3.2 Specific objectives		
15		
<b>4. LITERATURE REVIEW</b>		
<b>16</b>		
4.1 General review of the plant parasitic nematodes		
16		
4.2 Review on screening research in global context		
17		
4.3 Host resistance and tolerance		
21		

23	4.4 Screening technique	
24	4.5 Screening condition	
	4.6 Inoculums preparation and inoculation	24
	4.7 Host nutrition and chemical application	
25		
	4.8 Extraction and estimation of nematode density	26
<b>5.</b>	<b>MATERIALS AND METHODS</b>	
27		
	5.1 Materials	
27		
	5.1.1 Lab equipment	
27		
	5.1.2 Glassware	
27		
	5.1.3 Chemicals	
27		
	5.1.4 Farm materials	
27		
	5.2 Method	28
	5.2.1 Preparation of inoculum	
28		
	5.2.2 Counting of the nematode eggs	
29		
	5.2.3 Preparation of the soil.	
29		
	5.2.4 Crop cultivar	
30		
	5.2.5 Screen house condition	
30		
	5.2.6 Inoculation of eggs	
21		
	5.2.7 Caring of the plants	
31		
	5.2.8 Extraction and estimation of final density of <i>Meloidogyne</i> spp	31
	5.2.10 Data collection and statistical analysis	32
<b>6.</b>	<b>RESULTS</b>	
34		
	6.1 Experimental analysis	
35		
	6.2 Determination of reproduction factor	
36		
<b>7.</b>	<b>DISCUSSION</b>	
39		
<b>8.</b>	<b>CONCLUSION</b>	
42		



**9. RECOMMENDATIONS**

43

**REFERENCES**

44

**Appendices**

56

*Annex 1* Classification of species of *Meloidogyne* Goeldi, 1887

56

*Annex 2* Key species of *Meloidogyne* Goeldi, 1887

58

*Annex 3* Distribution of RKN, *Meloidogyne* species by continent and order of economic importance 62

*Annex 4* Tabular key to *Meloidogyne* female

63

*Annex 5* Summary of important diagnostic of perinéal patterns of the agriculturally most important RKN, *Meloidogyne* spp. 64

*Annex 6* Summary of important diagnostic characters of stylet of female

65

*Annex 7* Summary of important diagnostic characters of head shape of male 66

*Annex 8* Summary of important diagnostic characters of second stage juveniles of the root knot nematodes 68

# LIST OF TABLES

Page

<b>Table 1.</b> Summary of cytogenetic information related to root knot nematodes.....	
... 11	
<b>Table 2.</b> Differential host test identification of the most common <i>Meloidogyne</i> species and races.....	22
<b>Table 3.</b> Response of different tomato cultivars on the gall index ( <i>GI</i> ) of <i>Meloidogyne</i> spp. .....	34
<b>Table 4.</b> Response of different tomato cultivars on the reproduction factor ( <i>Rf</i> ) of <i>Meloidogyne</i> spp.....	36

## LIST OF FIGURES

	<b>Page</b>
<b>Fig. 1.1.</b> Life cycle of <i>Meloidogyne</i> spp.....	10
<b>Fig. 2</b> Land preparation for nursery establishment in HRD, Khumaltar.....	28
<b>Fig. 3</b> Nematode identification and counting in laboratory PPD, Khumaltar.....	29
<b>Fig. 4</b> Different tomato cultivars planting in pot at screen house PPD, Khumaltar.....	30
<b>Fig. 5</b> Establishment and caring of plant in screen house at PPD, Khumaltar.....	31
<b>Fig 6</b> Influence of different cultivars of tomato on the gall index on root of <i>Meloidogyne</i> spp.....	32
<b>Fig 7.</b> Gall formation rate of <i>Meloidogyne</i> spp. on the different tomato cultivars in screen house condition at Khumaltar.....	35
<b>Fig. 8</b> Influence of different cultivars of tomato on the reproduction factor of <i>Meloidogyne</i> spp.....	37
<b>Fig. 9.</b> Multiplication rate of <i>Meloidogyne</i> spp. on the different tomato cultivars in screen house condition at Khumaltar .....	37

**Fig 10.** Interaction of gall index with reproduction factor of *Meloidogyne* spp. in different tomato cultivars in screen house condition at Khumaltar  
.....38

## ABBREVIATIONS AND ACRONYMS

@	:	At the rate
μ	:	Micron
AMF	:	Arbuscular micorrhizal fungi
CMA	:	Corn meal agar
Cv	:	Cultivar
DEGO	:	Dorsal oesophageal gland orifice
e.g	:	Example
GI	:	Gall index
GM	:	Gelatinous matrix
HRD	:	Horticulture Research Division
i.e	:	That is
J <sub>2</sub>	:	Second stage juvenile
J <sub>4</sub>	:	Fourth stage juvenile
Kg	:	Kilogram
LSD	:	Least significant difference.
NaCl	:	Sodium chloride
NaOCl	:	Sodium hypochloride
NARC	:	National Agriculture Research Council
Pf	:	Final population
Pi	:	Initial population
PPD	:	Plant Pathology Division
ppm	:	Parts per million
RBCD	:	Randomized Complete Block Design
Rf	:	Reproduction factor
SE	:	Standard error
SEM	:	Scanning electron microscope
Spp	:	Species
USA	:	United States of America
Var.	:	Variety

