CONTENTS

List of Tables
List of Plates
List of Figures

PART I
GENERAL SURVEY ON PHYTOPHAGOUS MITES
INFESTING MEDICINAL PLANTS OF KERALA

Introduction
Review of Literature
Materials and Methods

1. Sampling localities
   1.1. Botanical/herbal gardens
   1.2. Other collection localities in various districts of Kerala
2. Medicinal plants surveyed
3. Collection and identification of phytophagous mites
   3.1. Collection of mite infested leaf/twig samples
   3.2. Segregation of mite specimens
   3.3. Clearing and mounting of mite specimens
   3.4. Identification of mite specimens
4. Study on faunal diversity, seasonal abundance and relative distribution of phytophagous mites

Observation

1. Faunal diversity of phytophagous mites on various medicinal plants
2. Seasonal abundance and relative distribution of phytophagous pest mites
PART II
STUDY ON BIOLOGICAL PARAMETERS OF SELECTED SPECIES OF PEST MITES

Introduction

Review of Literature
1. Feeding biology
2. Breeding biology

Materials and Methods
1. Host plants selected for conducting detailed biological studies of phytophagous pest mites
2. Laboratory rearing of mites
3. Study on feeding biology of selected species of pest mites
   3.1. Cultivation of host plants of selected species of pest mites
   3.2. Inoculative release of pest mites onto experimental plants
   3.3. Assessment of feeding damage induced by pest mites
      i) Qualitative assessment of feeding damages
         a). Assessment of feeding damages under laboratory condition
         b). Assessment of feeding damages under field condition
         c). Assessment of feeding damages by leaf sectioning
      ii) Quantitative assessment of feeding damages
         A). Assessment of mite induced alterations in the factors affecting photosynthesis of host plants
            a). Estimation of concentration of major photosynthetic pigments
            b). Assessment of photosynthetic efficiency of host plants
         B) Estimation of biochemical compounds
            a) Estimation of proline
            b) Estimation of phenol
4. Study on breeding biology of selected species of pest mites
4.1. Experimental set up for conducting studies on breeding biology of pest mites
4.2. Morphological studies of life stages of pest mites
4.3. Scanning Electron Microscopic studies of pest mites

Observation

1. Feeding biology of pest mites
   1.1. Feeding Biology of *Tetranychus neocaledonicus*
   1.2. Feeding Biology of *Oligonychus biharensis*
   1.3. Feeding Biology of *Brevipalpus phoenicis*
2. Breeding biology of pest mites
   2.1. Breeding Biology of *Tetranychus neocaledonicus*
   2.2. Breeding Biology of *Oligonychus biharensis*
   2.3. Breeding Biology of *Brevipalpus phoenicis*

PART III
STUDY ON BIOLOGICAL CONTROL OF PEST MITES

Introduction

Review of Literature

1. Natural enemies
2. Biopesticides

Materials and Methods

1. Detection and identification of natural enemies of selected species of pest mites
2. Studies on feeding potential of natural enemies on selected species of pest mites
   2.1. Rearing/laboratory maintenance of natural enemies
   2.2. Experimental set up for studies on predatory potential of the natural enemies
3. Evaluation of acaricidal activity/bio-control efficacy of plant extracts on selected species of pest mites
   3.1. Plant species selected
   3.2. Preparation of crude plant extracts
   3.3. Acricidal/miticidal test on pest mites

Observation

1. Identification of the natural enemies of the pest mites attacking the common medicinal plants
2. Feeding potential of natural enemies on selected species of pest mites

a) Nature of predation and predatory potential of the natural enemies on *Tetranychus neocaledonicus*
b) Nature of predation and predatory potential of the natural enemies on *Oligonychus biharensis*
c) Nature of predation and predatory potential of the natural enemies on *Brevipalpus phoenicis*

3. Acaricidal activity of the plant extracts

DISCUSSION 252-302
SUMMARY 303-317
REFERENCES 318-366
PUBLICATIONS
PRESENTATIONS