

Abstract:

In order to identify fungi causing dieback and endophytic fungi, samples were collected from shoot tips of some trees in Sistan and parts of Kerman province. Small pieces of the samples cultivated in Potato Dextrose Agar (PDA) after surface disinfection by sodium hypochlorite. A combination of morphological features including conidiomata (if present), conidiogenous loci, shape, size and septation of conidia and conidiophores have been used to identify the taxa. Extraction of genomic DNA performed based on CTAB method. Then ITS region of the ribosomal DNA amplified using ITS1 and ITS4 primers and PCR products were sequenced. Sequences of taxa compared with other correlate and similar sequences in Gene Bank. With morphological data and nucleotide sequencing of *ITS-rDNA* region, two species of the genus *Neoscytalidium* including *N. dimidiatum* (on *Ficus religiosa*, *Nerium oleander*) and *N. novaehollandiae* (on *Morus alba*) and three taxa including *Curvularia spicifera* (on *Celtis australis*), *Cadophora malorum* (on *Vitis vinifera*) and *Didymella macrostoma* (on *Citrus sinensis*) were identified as fungi causing dieback. *Chaetomium jodhpurensis* on *Olea europaea* is introduced as both endophyte and shoot tip parasite. Seven species of the genus *Alternaria* including *A. alternata* (on *Citrus reticulata*, *Juglans regia*, *Prunus dulcis*), *A. burnsii* (on *Prunus domestica*), *A. chlamydospora* (on *Juglans regia*), *A. consortialis* (on *Nerium oleander*, *Prunus dulcis*, *Vitis vinifera*), *A. infectoria* (on *Buxus sempervirens*), *A. malorum* (on *Prunus armeniaca*) and *A. tenuissima* (on *Citrus sinensis*) and three other taxa including *Cladosporium macrocarpum* (on *Ailanthus altissima*), *Fusarium proliferatum* (on *Citrus paradisi*, *Elaeagnus angustifolia*, *Prunus persica*) and *Sarocladium strictum* (on *Salix aegyptiaca*) are identified as endophytic fungi from shoot tips. *Curvularia australiensis*, *Fusarium brachygibbosum* and *Thielavia microspora* are new foe the mycobiota of Iran and are reporting for the first time.

Keywords: Anamorphic fungi, Taxonomy, Dieback, *ITS-rDNA*



University of Zabol

Graduate school

Faculty of Agriculture

Department of Plant Protection

The Thesis Submitted for M.Sc. Degree in Plant Pathology

Title

Morphological and molecular identification of *Neoscytalidium dimidiatum* isolates and other endophyte fungi dieback in Sistan and Kerman Province

Supervisors

Dr. M. Salari

Advisor

Dr. N. Panjehkeh

Dr. M. Pirnia

By

S. Rahmani

Winter 2018