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First Report of Tuber and its Host Plant from Iran

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Abstract

In December 2013, oak trees in Kermanshah province were visited. In this study, one specimen at symbiosis with roots of oak (*Quercus infectoria*) were found that based on morphological and cytological characteristics this fungus identified as *Tuber* Sibthorp.

Keywords: Tuber; *Quercus infectoria*; Iran

Introduction

Truffles are the hypogeous fruiting bodies of Ascomycete fungi that live in symbiosis with roots of trees such as oaks, hazels, poplar and some shrubs as Cistus. As a result of the symbiosis, modified roots called ectomycorrhizas develop. Truffles belong to the genus Tuber, one of the few ectomycorrhizal Ascomycetes. Few older studies, report the presence of desert truffles in various parts of Iran. *Terfezia claveryi* was mentioned for the first time in Iran by Malencon in 1973 [1]. Daneshpajuh reported the presence of two species of *Terfeziaceae, T. leonis* and Tirmania pinoyi [2]. Based on morphological and molecular characters, *T. claveryi, Picoa lefebvrei, P. juniperi, T. pinoyi* and *T. nivea* have been recently reported from Iran [3-7]. To this time was not report of Tuber in Iran.

Material and Methods

Location

The Javanrood region is close to the cities of Paveh and Ravansar in the west of Iran to the west of Kermanshah and between Kordestan and Ilam provinces. It is a particylary oak-bearing forest and therefore it was chosen as the main study area. Several visited were made during the months from April to december 2012-2013.

Morphological study

Morphological features such as peridium color, glebal texture and color, shape, size, color of asci, number of ascospores per ascus, color and ornamentation of ascospores, reaction to Meltzar,s reagent were checked.

Results

In this study, one specimen of Tuber at symbiosis with roots of oak (*Quercus infectoria*) were found with featurs following: Ascocarps subglobose to much lobed and irregular, 8 cm in diam, verrucose and brown to black (Figure 1A). Gleba solid, brown to black and with brown veins (Figure 1B). Immature asci globose, ovoid, clavate and ellipsoidal, variable in size and nonamyloid (Figure 1C and 1D). Ascospores globose, ellipsoidal, brown and variable in size (Figure 1E and 1F). Based on morphological and cytological characteristics this fungus identified as Tuber Sibthorp [8]. This fungus was found only once in several visit from Javanrood region in Kermanshah province. This fungus was not reported from Iran. Despite ecological and economical important, the understanding of many basic aspects of Tuber is still in its infancy in Iran and comprehensive studies should be carried out.

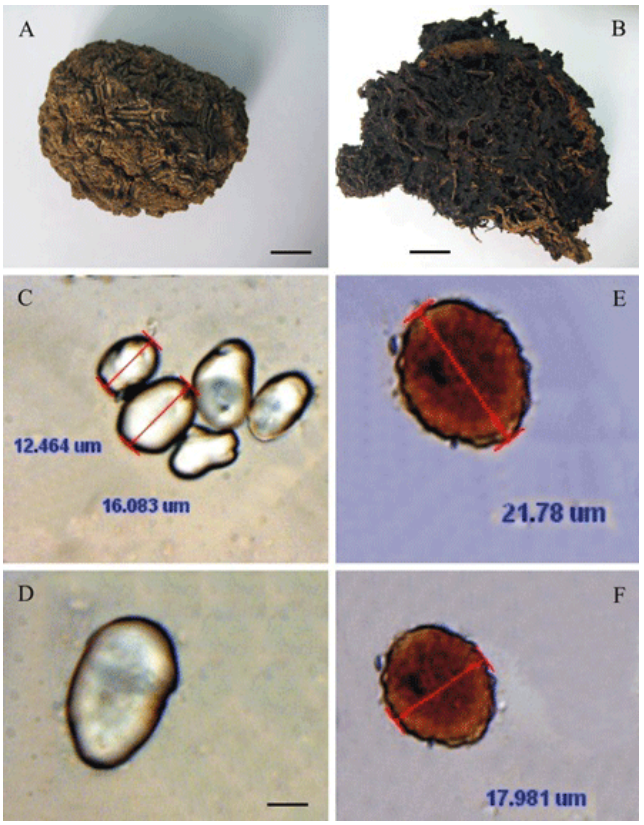

Figure 1: Tuber; Ascocarp (A), Gleba (B), Immature asci (C, D), Ascospores (E, F). Bars=1 cm in Figures. A and B, 16 μm in D.

Discussion

The present surveys from oak trees in Kermanshah province showed that Tuber exist in Iran. Based on the morphological and cytological characteristics this fungus identified as Tuber Sibthorp. The morphological features of this fungus resembled those of Trappe and Trappe and Castellano [8]. In this study, one specimen of Tuber at symbiosis with roots of oak (*Quercus infectoria*) were found. To this time was not report of Tuber in Iran. Despite ecological and economical important, the understanding of many basic aspects of Tuber is still in its infancy in Iran and comprehensive studies should be carried out.

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