Anatolian Journal of Botany
7(2): 131-134 (2023)
Research article *doi:10.30616/ajb.1335980*

First record of *Arpinia luteola* J.Geesink from Türkiye

Yasin UZUN[1]*, Abdullah KAYA[2]
[1]*Karamanoğlu Mehmetbey University, Ermenek Uysal and Hasan Kalan Health Services Vocational School, Department of Pharmacy Services, Karaman, Turkey*
[2] *Gazi University, Science Faculty, Department of Biology, Ankara, Turkey*
**yuclathrus@gmail.com, [2]kayaabd@hotmail.com*

Received : 01.08.2023
Accepted : 24.08.2023
Online : 01.09.2023

Arpinia luteola J.Geesink'nın Türkiye'den ilk kaydı

Abstract: *Arpinia luteola* J.Geesink was reported as new record for the mycobiota of Türkiye, based on the identification of the samples from Aydıntepe district of Bayburt province. This species is the first member of the genus *Arpinia* in Türkiye. A short description of the species is provided together with the photographs, related to the macro and micromorphology, and the suggested Turkish name.

Key words: Biodiversity, macrofungi, *Pezizales*, Türkiye

Özet: *Arpinia luteola* J.Geesink, Bayburt'un Aydıntepe ilçesinden toplanan örneklerin teşhisine bağlı olarak, Türkiye mikobiyotası için yeni kayıt olarak rapor edilmiştir. Bu tür *Arpinia* cinsinin Türkiye'deki ilk üyesidir. Türün kısa bir betimlemesi, makro ve mikromorfolojisine ilişkin fotoğrafları, ve önerilen Türkçe ismiyle birlikte verilmiştir.

Anahtar Kelimeler: Biyoçeşitlilik, makromantarlar, *Pezizales*, Türkiye

Citation: Uzun Y, Kaya A (2023). First record of *Arpinia luteola* J.Geesink from Türkiye. Anatolian Journal of Botany 7(2): 131-134.

1. Introduction

Arpinia Berthet is an operculate discomycete genus within *Pyronemataceae* family. It was first proposed by Berthet (1974) with the type species *A. inops* Berthet. Members of the genus are characterized by cupulate, discoid to flat, stipitate to substipitate apothecia; whitish, dull whitish, cream, pale ochraceous, dull ochraceous, yellowish ochraceous or vitelline hymenium; scurfy to irregularly crenulate margin; concolorous or paler, usually scurfy receptacle; two-layered ectal excipulum; operculate, 8 spored, pleurorhynchous asci; ellipsoid to fusiform, usually biguttulate, thick-walled, uniseriate ascospores; filiform, straight, hyaline paraphyses subclavate at the apex, and non staining nuclei with acetocarmine.

IndexFungorum (2023) lists the current names of five *Arpinia* species (*A. fusispora* Hohmeyer, *A. inops* Berthet, *A. luteola* J. Geesink, *A. microspora* (Dissing & Raitv.) Hohmeyer, *A. rahmii* Hohmeyer & Senn-Irlet). Current checklists (Sesli et al., 2020; Uzun, 2023) and the latest contributions to the pyronemataceous macrofungi of Türkiye (Keleş, 2019; Altuntaş et al., 2021; Berber et al., 2021; Kesici and Uzun, 2021; Uzun and Kaya, 2021, 2022) indicate that, any member of the genus *Arpinia* have been reported from Türkiye before. Here we present *A. luteola* as new record for the mycobiota of Türkiye.

2. Materials and Method

Apothecia of *A. luteola* were collected from Salmankaş village of Aydıntepe (Bayburt) district during a routine field survey in 2023. Colour photographs of the apothecia were taken at their natural habitat, and notes were taken related to their ecology, morphology and geographic position. Then some apothecia were collected and transferred to the fungarium in paper bags. Microscopic investigations were carried out under a Nikon Eclipse Ci-S trinocular microscope. Photographs related to microstructure was obtained by the aid of a DS-Fi2 digital camera. It was identified by comparing the accumulated data with Geesink (1982), Hohmeyer (1988) and Fernández Vicente and Undagoitia (2004). The samples are kept at Karamanoğlu Mehmetbey University, Kamil Özdağ Science Faculty, Department of Biology.

3. Results

Ascomycota Whittaker

Pezizales J. Schröt.

Pyronemataceae Corda

Arpinia luteola J. Geesink

Syn: [*Arpinia luteola* var. *pallidorosea* Benkert, Häffner & Hohmeyer].

Macroscopic and microscopic features: Apothecia gregarious to somewhat caespitose, stipitate and up to 25 mm in diameter. Receptacle cup shaped at first, then discoid, and undulate at maturity. Hymenium yellowish to yellowish orange or yellowish ochraceous when young, somewhat brownish yellow towards the margin, light salmon pink to roseaeous at maturity, smooth when young, somewhat rough an furfuraceous at maturity (Fig. 1). Outer surface concolorous, smooth to furfuraceous. Outer layer of ectal excipulum with globose cells, inner layer of textura angularis. Medullary excipulum of textura intricate. Asci 120-175 × 8-10 µm, cylindrical, hyaline, octosporic, pleurorhyncal (Fig. 2a). Paraphyses 2.5-3 µm in diameter, filiform, hyaline, generally straight, some slightly enlarged towards the apex up to 4, rarely 5 µm (Fig. 2a). Ascospores 9.5-11.5 × 5.5-6.0 µm, uniseriate, cylindrical to ellipsoid, hyaline, thick-walled, usually with two oil drops (Fig. 2b).

Figure 1. Ascocarps of *Arpinia luteola*

Arpinia luteola, also regarding varity *pallidorosea*, was reported to grow on bare ground or humus in coniferous and deciduous forests, especially of *Larix* Mill. and *Picea* A.Dietr. spp. (Geesink, 1982; Hohmeyer, 1988; Fernández Vicente and Undagoitia, 2004).

Specimen examined: Bayburt, Aydıntepe, Salmankaş village, poplar grove, along with decaying leaves of *Populus* sp., 40°28′N-40°00′E, 1930m, 25.06.2023, Yuzun 7335.

Suggested Turkish name for the presented species is "Sarı kepeklikadeh".

4. Discussions

Arpinia luteola was added as a new record for the mycobiota of Türkiye. This species is the first member of the genus *Arpinia* in Türkiye. General characteristics of the studied collection are in agreement with Geesink (1982), Hohmeyer (1988), Fernández Vicente and Undagoitia (2004).

Together with the synonymized var. *pallidorosea*, *Arpinia luteola* is characterized by yellowish hymenium, small and somewhat cylindrical ascospores. *Arpinia microspora* and *A. inops* differs from this species by their whitish hymenia. Larger ascospores of *Arpinia fusispora* (15-17 × 6-.6.5 µm) and *A. inops* (13-16 × 9-10 µm) also differ them from *A. luteola* (Geesink, 1982; Hohmeyer, 1988; Fernández Vicente and Undagoitia, 2004; Rubio and Sánchez, 2005; Læssøe and Petersen, 2019).

All members of *Arpinia* seem very rare (Hohmeyer, 1988; Læssøe and Petersen, 2019) and current species generally have European distribution except, *A. microspora*. They have generally been reported from coniferous forests

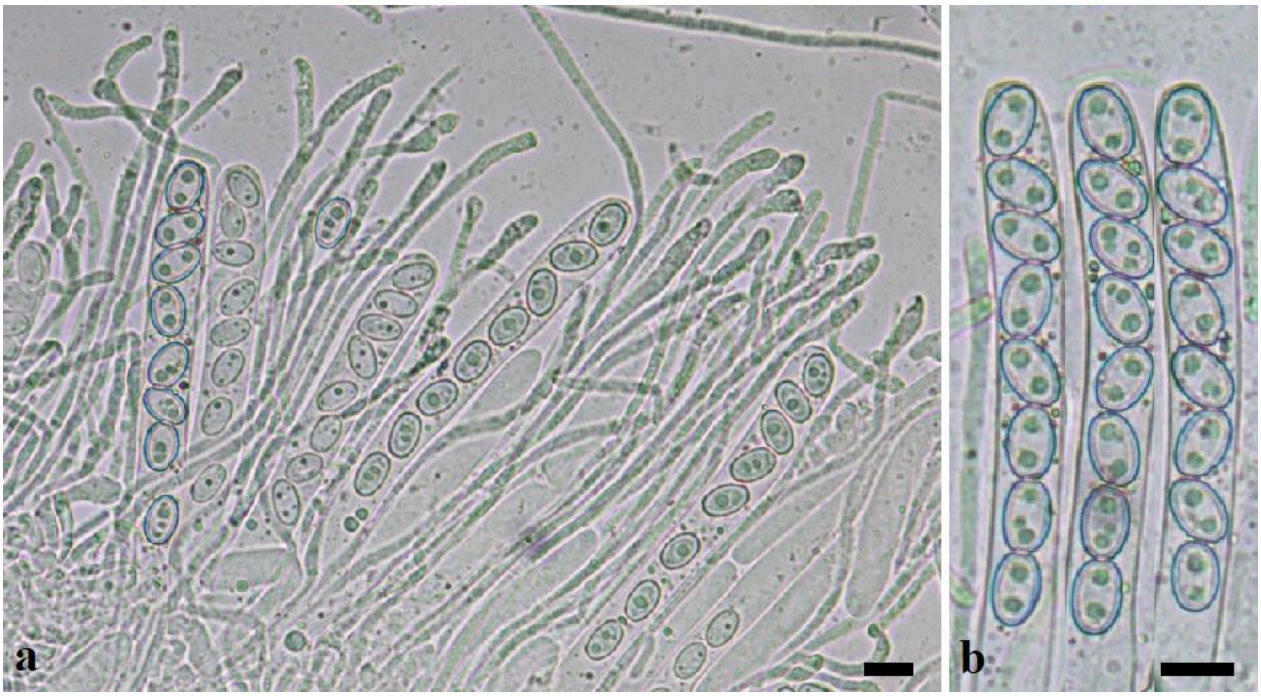

Figure 2. Asci (a,b), paraphyses (a) and ascospores (b) of *Arpinia luteola.* (in water) (bars: 10 µm)

(Berthet, 1974; Benkert, 1980; Geesink, 1982; Hohmeyer, 1988; Fernández Vicente and Undagoitia, 2004; Rubio and Sánchez, 2005; Perry et al., 2007; Carbone et al., 2021) except *A. fusispora* which was determined under beech, *Quercus* and *Fagus* spp. Though the type species of *A. luteola* was collected under *Larix* sp., our collection was made under *Populus* sp. One of the collection of synonymised *A. luteola* var. *pallidorosea* was also made from decidious forest (Hohmeyer, 1988).

Conflict of Interest

Authors have declared no conflict of interest.

Authors' Contributions

The authors contributed equally.

References

Altuntaş D, Bozok F, Taşkın H, Kabaktepe Ş, Allı H, Akata I (2021). New additions to Turkish Mycota from Ankara, Balıkesir and Kütahya provinces. Turkish Journal of Botany 45(1): 83-94.

Benkert D (1980). Bemerkenswerte Ascomyceten der DDR III - Die monotypischen *Pezizales*-Gattungen *Arpinia*, *Kotlabaea*, *Miladina* und *Smardaea* in der DDR. Boletus 4: 1-8.

Berber O, Uzun Y, Kaya A (2021). First report of *Octospora neerlandica* from Asian Continent. Mantar Dergisi 12(1): 61-64.

Berthet P (1974). *Arpinia inops*, espèce nouvelle et genre nouveau de discomycète opercule. Numéro special du Bulletin de la Société Linnéenne de Lyon [Travaux mycologiques dedies aR. KOHNER): 33-37.

Carbone M, Galeotti GB, Lezzi T, Athanasiadis A, Alvarado P (2021). *Warcupia cupulata* a new cup-shaped species in the cleistothecioid genus *Warcupia* (*Otideaceae, Pezizales*). Ascomycete.org 13(4): 145-156.

Fernández Vicente J, Undagoitia J (2004). *Pulvinula ovalispora* Boud., *Arpinia luteola* Gees. varo *pallidorosea* Benk. Haff. & Hohm., *Scutellinia torrentis* (Rehm) Schum. y *Spathularia nigripes* (Quél.) Sacc. en GPN, y listado de Ascomicetos (JI) en el Parque Natural del Gorbeia (GPN). Errotari 1: 56-69.

Geesink J (1982). A new species of *Arpinia*. Peroonia 11(4): 509-510.

Hohmeyer H (1988). The genus *Arpinia* (*Pyronemataceae, Pezizales*). Mycologia Helvetica 3(2): 221-232.

Index Fungorum. (2023). http://www.indexfungorum.org/names/Names.asp / [25 July 2023].

Keleş A (2019). New records of *Hymenoscyphus*, *Parascutellinia*, and *Scutellinia* for Turkey. Mycotaxon 134(1): 169-175.

Kesici S, Uzun Y (2021). Adaklı (Yüksekova/Hakkâri) ve çevre köylerde belirlenen makromantarlar. Mantar Dergisi 12(2): 148-162.

Læssøe T, Petersen JH (2019). Fungi of Temperate Europe vol 2. Princeton: Princeton University Press.

Perry BA, Hansen K, Pfister DH (2007). A phylogenetic overview of the family *Pyronemataceae* (*Ascomycota, Pezizales*). Mycological Research 111: 549-571.

Rubio E, Sánchez JA (2005). *Arpinia fusispora* Hohmeyer, un inusual miembro de la familia *Pyronemataceae* Corda, hallado en la provincia de León. Revista Catalana de Micologia 27: 35-39.

Sesli E, Asan A, Selçuk F. (edlr.) Abacı Günyar Ö, Akata I, Akgül H, Aktaş S, Alkan S, Allı H, Aydoğdu H, Berikten D, Demirel K, Demirel R, Doğan HH, Erdoğdu M, Ergül CC, Eroğlu G, Giray G, Halikî Uztan A, Kabaktepe Ş, Kadaifçiler D, Kalyoncu

F, Karaltı İ, Kaşık G, Kaya A, Keleş A, Kırbağ S, Kıvanç M, Ocak İ, Ökten S, Özkale E, Öztürk C, Sevindik M, Şen B, Şen İ, Türkekul İ, Ulukapı M, Uzun Ya, Uzun Yu, Yoltaş A 2020. Türkiye Mantarları Listesi. Ali Nihat Gökyiğit Vakfı Yayını. İstanbul.

Uzun Y (2023). The checklist of Turkish Pezizales species. Anatolian Journal of Botany 7(1): 1-20.

Uzun Y, Kaya A (2021). *Scutellinia kerguelensis*, a new ascomycete record for Turkey. Mantar Dergisi 12(2): 180-183.

Uzun Y, Kaya A (2022). *Octospora tuberculata*, a new record for Turkish *Pyronemataceae*. Biological Diversity and Conservation 15(2): 245-248.