

A Fatal *Inocybe* (Fr.) Fr. Poisoning in Mediterranean Turkey

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Abstract: A fatal case of mushroom poisoning by *Inocybe rimosa* (Bull.) P. Kumm. in Isparta is reported and documented. The description of the poisonous taxon and a short discussion of the case of poisoning are presented.

Key Words: Mushroom poisoning, *Inocybe*, muscarine syndrome, Turkey

Akdeniz Bölgesi'nden (Türkiye) Ölümcül Bir *Inocybe* (Fr.) Fr. Zehirlenmesi

Özet: Isparta'da *Inocybe rimosa* (Bull.) P. Kumm. kaynaklı ölümcül bir mantar zehirlenmesi rapor edilerek detayları verilmiştir. Zehirlenmeye neden olan zehirli taksonun tanımı ve kısa tartışması yapılarak sunulmuştur.

Anahtar Sözcükler: Mantar zehirlenmesi, *Inocybe*, Muscarin sendromu, Türkiye

Introduction

People have been aware of mushroom poisonings since antiquity (Ainsworth, 1986; Dugan, 2008). The collecting and eating of mushrooms has become a commercial and popular leisure activity due to renewed positive interest in consuming wild foods and recreational activities. In consequence, poisonings by different kinds of mushrooms due to misidentification are unfortunately an important medical problem in every part of the world, including Turkey. Every autumn and spring, there are several serious or fatal mushroom poisonings due to consumption of toxic species of fungi by local people in Turkey. According to the current literature on Turkish macrofungi, the first report of mushroom poisoning in Turkey is by Karamanoğlu and Öder (1973). Further, more recent studies were published

by Öder (1977), Aytuğ et al. (1989), Işıloğlu and Watling (1991), Işıloğlu (1992), Işıloğlu et al. (1995), Gücin et al. (1996), and Işıloğlu et al. (2007). All known poisonous mushrooms of Turkey were documented recently by Gücin et al. (2000).

The current pressure on world food prices is likely to increase the number of people gathering wild foods to supplement their diet. This in turn is likely to lead to more cases of poisonings, especially in underprivileged communities.

In the autumn of 2006, one of the authors (M.I.) was involved in the investigation of a fatal poisoning by *Inocybe rimosa* (Bull.) P. Kumm. After being alerted to the poisoning, carpophores of the species in question were collected from the site where the mushrooms had been

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gathered for the victim's evening meal. The identity of the specimens was confirmed in the field by the victim's father and other relatives. The mushrooms had been collected for culinary use from the oak woodland located in the south of Bağıllı subdistrict, evidently confusing them with edible *Russula* sp. (called "has mantar" in the area). The fruitbodies had been prepared by cooking in oil. Two hours after ingestion, the initial and typical symptoms of muscarine syndrome manifested, with stomach pains, heavy respiration, salivation, diarrhoea, and vomiting; the patient was quickly transferred to the hospital in the district. Unfortunately the 11-year-old primary school student (B.D.) died after 4 days of insufficient treatment. After laboratory tests in the Mushroom Research Centre at Muğla University the fungus was identified as *Inocybe rimosa*.

Inocybe rimosa (Bull.) P. Kumm.

= *Inocybe fastigiata* (Schaeff.) Quéf.

Pileus 30-70 mm across, conical to campanulate with an umbo when young, later expanded and radially splitting or cracking, not felty, covered with radially arranged reddish brown or chestnut brown fibrils (Figure). Flesh cream-coloured, thick in the centre of pileus, thin toward

the margin, odour slightly spermatic or mealy, taste mild and earthy. Lamellae narrowly attached to almost free, whitish when young, later light ochraceous to ochraceous-brown. Stipe 50-70 × 5-10 mm, cylindrical, slightly bulbous, solid when young, hollow when old, surface whitish to light brown, discolouring with age and on handling. Spore-print olive-brown. Spores 10-13 × 6-9 µm, elliptical, reniform to slightly amygdaliform, smooth, yellow-brown and thick-walled. Cheilocystidia 30-70 × 10-20 µm, slenderly clavate to pyriform, thin-walled. Pleurocystidia absent.

Isparta, Gelendost, Bağıllı subdistrict, oak woodland in the South of Bağıllı 17.11.2006, *Işiloğlu* 8064.

Habitat: Solitary to gregarious under frondose and coniferous trees especially beech from early summer to late autumn (Bresadola, 1980; Kuyper, 1986; Stangl, 1989; Breitenbach & Kränzlin, 2000; Phillips, 2006; Roux, 2006). *Inocybe rimosa* has been recorded from under oak trees in the area. The association of this species with particular genera of trees is non-specific. It is reported as being associated with 14 different genera of trees (Kuyper, 1986).



Figure. *Inocybe rimosa*

Inocybe rimosa can be easily recognised by its cream to brownish, silky fibrillose, very distinctly umbonate, radially splitting pileus and elliptic to slightly amygdaliform, thick-walled and olive brown spores. This species could be easily mistaken in the field for *Inocybe praetervisa* Qué. but it lacks a basal bulb, metuloid cystidia, and tuberculate spores. *I. rimosa* is similar to *I. erubescens*. However, the latter is easy to distinguish by its pileus turning red when cut. The genus *Inocybe* comprises more than 200 taxa,

which are still growing in number as a result of new discoveries and further detailed analyses. To date only 58 taxa of *Inocybe* have been reported in Turkey. *I. rimosa* has been recorded (many times as *I. fastigiata*) from 30 provinces in Turkey (Sesli & Denchev, 2005; Solak et al., 2007). It is deadly poisonous (Bresinsky & Besl, 1990; Breitenbach & Kränzlin, 2000; Gücin et al. 2000; Phillips, 2006; Roux, 2006).

References

- Ainsworth GC (1986). *Introduction to the History of Medical and Veterinary Mycology*. Cambridge: University Press.
- Aytuğ Ö, Aslan N, Işık A, Dönder E & Lüleci C (1989). *Amanita* Cinsi Mantar İntoksikasyonun Alışılmadık Bir Komplikasyonu: Toksik Myokardid, *Ç.Ü. Tıp Fak. Der.* 624-632.
- Breitenbach J & Kränzlin F (2000). *Fungi of Switzerland*. Volume 5, Agarics, Cortinariaceae. Verlag Mykologia. Luzerne.
- Bresadola J (1980). *Iconographia Mycologica* 29, supp. III, Torino.
- Bresinsky A & Besl A (1990). *A Colour Atlas of Poisonous Fungi*, London: Wolfe Publishing Ltd.
- Dugan FM (2008). *Fungi in the Ancient World*. St Paul: APS Press.
- Gücin F, Işıloğlu M, Solak & MH (1996). *Poisonous Macrofungi of Northwest Anatolia*, XIII. National Biology Congr., 17-20 September, İstanbul, pp:41.
- Gücin F, Işıloğlu M & Kaya A (2000). Türkiye'nin Zehirli Mantarları (in Türkiye'de Mantar Zehirlenmeleri Zehirli Mantarlar, edit: Afife Mat, pp: 9-149) İstanbul: Nobel tıp kitapları.
- Işıloğlu M & Watling R (1991). Poisonings by *Lepiota helveola* Bres. in Southern Turkey. *Edinburgh J. Botany* 48: 91-100.
- Işıloğlu M, Gücin F & Mat A (1995). Mushroom Poisonings Occured in İstanbul in November 1994, *Ekoloji Journal* 14: 22-28.
- Işıloğlu M (1992). Poisonous Macrofungi from Adana and İçel (Southern Turkey), XI. Congress of European Mycologists, 7-11 September Kew, pp:21.
- Işıloğlu M, Baş H, Allı H, İşler M & Şenol A (2007). A Mushroom Poisoning in Isparta, Turkey. International Conference on Environment: Survival and Sustainability 19-24 Feb. 2007 Near East University, Nicosia, Northern Cyprus.
- Karamanoğlu K & Öder N (1973). Uşak ve Çorum'da İki Mantar Zehirlenmesi, *A.Ü. Tıp Fak. Mec.* 25:1412-1413.
- Kuyper TW (1986). A Revision of the Genus *Inocybe* in Europe, *Persoonia*, Suppl. 3: 1-247.
- Phillips R (2006). *Mushrooms*. A Comprehensive Guide with over 1250 Detailed Photographs of Mushrooms and other Fungi. Pan Macmillan Ltd., London.
- Öder N (1977). *Bazı Zehirli Mantarlar ve Mantar Zehirlenmelerinde İlk Yardım*, Şafak Matbaası, Ankara.
- Roux P (2006). *Mille et un Champignons*. Édition Roux, Sainte-Sigolène.
- Sesli E, Denchev CM (2005). Checklist of the Myxomycetes and Macromycetes in Turkey, *Mycologia Balcanica* 2: 119-16.
- Solak MH, Işıloğlu M, Kalmış E & Allı H (2007). *Macrofungi of Turkey Checklist*. İzmir: Üniversiteler ofset.
- Stangl J (1989) Die Gattung *Inocybe* in Bayern, *Hoppea, Denkschr. Regensb. Bot. Ges.* 46: 5-388.