

LEPIOTA BRUNNEOINCARNATA GROUP

THIS MUSHROOM CAN BE LETHAL!



Lepiota brunneoincarnata in garden bed with organic mulch (left); showing white gills, ring on stem with purple-brown fringe and fine purple-brown fibrils on cap and stem (right). Photos: T. Lebel.

Scientific name: *Lepiota brunneoincarnata* Chodat & C.Martín (1889)

General description: *Lepiota brunneoincarnata* are small to medium sized mushrooms commonly found in landscaped areas, in lawns and in mulched garden beds. They are not native, having been introduced at some point from the northern hemisphere. *Lepiota brunneoincarnata* belongs to a group of closely related and morphologically similar species, which all are toxic to eat.

Division: Basidiomycota. **Order:** Agaricales. **Family:** Agaricaceae.

Common name: Deadly dapperling group.

Distribution: Europe, western Asia, Iran, Turkey, Pakistan, New Zealand and South Australia.



Description

Caps 25–50 (up to 70) mm diameter, are hemispherical when young flattening out with age, **lacking obvious central knob**, dry to touch, and **pinkish purple, reddish brown or greyish brown** (variable!), **with a woolly or granular looking layer that breaks up into crowded fine scales over the white background** as the caps expand. The shape is often uneven and the cap edge may be somewhat undulating. Flesh is white but staining pinkish where bruised or damaged.

Gills: **white and free** from the stem, staining faintly pinkish when bruised or damaged.

Stems 20 to 60 mm long and 4 to 14 mm wide, with a distinct ring (veil) in the middle or toward the upper portion above which the surface is pale, **below the ring zone often with pinkish-brown veil fragments scattered over the surface**, the base is slightly expanded. Stem hollow and rather fragile, flesh whitish staining pinkish.

Spore print is white. [Place a cap with gills downward on a piece of paper, cover with a plastic container, and leave for a few hours].

Smell: faint, unripe fruity.

Taste: **DO NOT TASTE!**

Etymology: The genus name, is derived from the Greek words *lepis* (scale) and *ot* (ear). Scales on a convex (vaguely ear-shaped) cap are one of the characteristics of this genus. The epithet *brunneoincarnata* is Latin and a reference to brownish-pink cap colouring.

Toxicity: *Lepiota brunneoincarnata* contain amatoxins (the same as in the deathcap). These mushrooms are deadly poisonous. Three to four mushrooms can cause liver damage, and a ‘meal’ can be enough to kill you. Dogs are also at risk from these mushrooms. Amatoxins inhibit nuclear RNA polymerase II, and this inhibition results in impaired protein synthesis and cell death. Because the liver is an organ in which protein synthesis and cell turnover are high, it suffers the most distinct damage in amatoxin poisoning. The damage appears to be directly proportional to the dose of toxin ingested (i.e. more eaten, more damage). Amatoxins are not destroyed by cooking,

Symptoms: Time of onset 6–12 hours (–36 hours) after eating mushrooms. Abdominal pain, vomiting, and watery diarrhoea. Symptoms subside after about one day; then, about 72 hours post-ingestion, gastrointestinal symptoms recur along with signs of impending liver failure. In rare cases death occurs 7 to 10 days after the first symptoms. 100 g of *L. brunneoincarnata* may result in severe liver damage (Brezinsky & Besl 2004).

Look-alikes: *Lepiota brunneoincarnata* has been mistaken for *Agaricus* species (field mushrooms), *Macrolepiota clelandii*, *Leucoagaricus leucothites* and *Marasmius oreades*. All of these species grow in grassy areas.

- *Agaricus* species may have pale gills when young, **but rapidly develop a hint of pinkish brown then dark brown**, and the mushrooms are generally more robust in stature.
- *Macrolepiota clelandii* has a cap with a distinct central **brownish bump and scattered brownish scales**, white gills, a longer elegant stem lacking brownish purple fibrils, and **a moveable ring on the stem**.
- *Leucoagaricus leucothites* has a **white smooth cap**, white gills, and **smooth white stem below the ring**.
- *Marasmius oreades* has a **pale tan-brown smooth** cap, white to creamy gills, and **lacks a ring** on the stem.



DO NOT ASSUME that the mushrooms growing in your garden bed are from the mushroom compost or mushroom kit you have tossed there! Garden beds are 'open communities' – many things may grow.

IN A POISONING EMERGENCY PHONE

13 11 26

24 hours a day, 7 days a week

Australia-wide

Immediately contact the Poison Information Centre if you realize that you, someone you know, or your pet has become ill after eating any mushroom

Other Descriptions, Illustrations and References

Asef, M.R. (2015). New records of the genus *Lepiota* for Iran, including two deadly poisonous species. *Mycologia Iranica* 2(2): 89–94.

Bresinsky, A. & Besl, H. (2004). *A Colour Atlas of Poisonous Fungi: A Handbook for Pharmacists, Doctors, and Biologists*. (CRC Press: Boca Raton), p. 45.

Paydas, S., Kocak, R., Erturk, F., Erken, E., Zaksu, H.S. & Gurcay, A. (1990). Poisoning due to amatoxin-containing *Lepiota* species. *British Journal of Clinical Practice* 44(11): 450–453.

Razaq, A., Vellinga, E.C., Ilyas, S. & Khalid, A.N. (2013). *Lepiota brunneoincarnata* and *L. subincarnata*: distribution and phylogeny. *Mycotaxon* 126: 133–141.

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Varvenne, D., Retornaz, K., Metge, P., De Haro, L. & Minodier, P. (2015). Amatoxin-containing mushroom (*Lepiota brunneoincarnata*) familial poisoning. *Pediatric Emergency Care* 31(4): 277–278. doi:10.1097/PEC.0000000000000399

State Herbarium Factsheet — *Lepiota brunneoincarnata* group

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