

Matchmaker: Mushrooms of the Pacific Northwest

Below are written descriptions and images of fruiting bodies, mushrooms, of the fungal species in this ectomycorrhizal association. The information is from the web version of the Matchmaker: Mushrooms of the Pacific Northwest (MMPNW) created by the Canadian Forest Service and based on the Windows MMPNW version 1.3 by Ian and Eli Gibson.

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LATIN NAME(S) *Agaricus bisporus* (Lange) Imbach Mitt. Naturf. Ges. Luzern 15: 15. 1946; *Agaricus brunnescens* Peck?

ENGLISH NAME(S) cultivated mushroom, button mushroom

NOTES this is the cultivated mushroom sold in supermarkets; features include white cap usually with flat brown fibrils which break up into scales, slightly reddening flesh, free close pinkish or pale brown gills when young, a well developed intermediate ring, growth in rich soil or manure (normally not grass), chocolate- or violet-brown spore deposit, and 2-spored basidia; *Agaricus hortensis* refers to white form; Kerrigan says *A. brunnescens* Peck may or may not be conspecific with *A. bisporus*; *bisporus* has been collected in BC, WA, ID, CA, and probably more widely in the Pacific Northwest, at least as an escape, Breitenbach & Kranzlin give distribution as North America, Europe, Asia, and North Africa

CAP 3-16cm, convex becoming flat or slightly depressed, margin inrolled when young, often extending past gills; white, usually with flattened red brown to cinnamon fibrils which break up into scales; dry, (Arora), 4-16cm, at first hemispheric with strongly inrolled margin, finally nearly flat or depressed centrally; pallid at first, soon becoming light to medium brown, rarely darker brown, background color whitish to pale vinaceous; dry, at first innately fibrillose, later with appressed-fibrillose fine scales (about 0.2-0.8cm broad), or occasionally remaining loosely interwoven (e.g. if beneath duff or soil), (Kerrigan), margin appendiculate (Courtecuisse)

FLESH thick, firm; white, usually becoming brownish to reddish or pinkish orange when cut and rubbed repeatedly, (Arora), up to 2.5cm thick, moderately firm; white, usually somewhat rufescent (becoming somewhat reddish) near gills and cuticle, in stem white, slightly to moderately rufescent (becoming reddish), (Kerrigan)



Fred Stevens (MykoWeb)



Richard Winder



Boleslaw Kuznik

GILLS free when mature, close; pinkish or pale brown, becoming purple brown to chocolate brown when old, finally blackish-brown, (Arora), free, close, up to 1.2cm broad; often pinkish when young, when old dark blackish-brown, margin pallid, (Kerrigan)

STEM 2-8cm x 1-3(4)cm, equal or enlarged at base, firm, usually stout; white sometimes turning dingy brown when old; smooth or cottony scales below ring, (Arora), 3-8cm x 1-3cm, equal to slightly bulbous, stuffed-hollow; bald; white, becoming slightly reddish-orange when cut, (Kerrigan)

VEIL membranous, cottony, white, 2-layered, forming delicate median to superior ring which may collapse when old, ring intermediate or sometimes skirtlike, upper surface often striate, (Arora), the undersurface with wide toothed flaps that separate from surface and point down the stem

ODOR mild or faintly fruity (Arora), fruity/spicy after exposure, (Kerrigan), pleasant (Lincoff), fungoid (Isaacs)

TASTE pleasant (Lincoff)

EDIBILITY the most widely eaten and cultivated mushroom, (Arora)

HABITAT in grocery stores, compost, manure, rich soil, along paths, rarely in woods or on lawns, (Arora), gregarious to tufted, or rarely solitary, in old manure or manured ground or compost, or in old piles of plant trimmings and sludge, or in litter of trees, especially *Cupressus macrocarpa*, occasionally under *Pinus*, *Eucalyptus*, *Quercus*, and other, (Kerrigan for California)

SPORE DEPOSIT chocolate-brown (Arora) cocoa-brown or violet-brown (Lincoff)

MICROSCOPIC spores 5.5-8.5 x 4-6.5 microns, elliptic, smooth, (Arora), spores (4.9)6.3-7.6(9.0) x (4.5)4.9-5.9(7.1) microns, broadly elliptic to elliptic, hilar appendix often prominent, germ pore not evident; basidia predominantly 2-spored, 17-22 x 4-5

NAME ORIGIN refers to 2-spored basidia, bis = twice (Latin), spora = seed (Greek)

SIMILAR like *campestris* but basidia of *bisporus* mostly 2-spored, ring well-developed, cap browner, flesh slightly reddening, rarely grows in grass, like *californicus* which is more slender (stem 0.5-1(1.5) instead of 1-4cm), usually has phenolic odor at least when cooked, has pallid or whitish gills at button stage before veil breaks, rarely in manure or compost, cap surface yellowing in KOH (rarely slightly in *bisporus*)

SOURCES Kerrigan(1), Arora*, Lincoff(1)*, Schalkwijk-Barendsen(as *brunnescens*)*, Courtecuisse*, MykoWeb, PNW keys, Isaacs, Redhead(5), Breitenbach(4)*

FAMILY Agaricaceae of Order Agaricales