

= Agaricus hondensis =

Agaricus hondensis , commonly known as the felt @-@ ringed agaricus , is a species of fungus in the family Agaricaceae . The species was officially described in 1912 by mycologist William Alphonso Murrill , along with three other *Agaricus* species that have since been placed in synonymy with *A. hondensis* . Found in the Pacific Northwest region of North America , *A. hondensis* fruits in the fall under conifers or in mixed forests .

The fungus produces fruit bodies (mushrooms) with white to gray @-@ brown caps up to 15 cm (6 in) in diameter covered with pale pinkish @-@ brown scales that darken in age . The tightly @-@ packed gills on the cap underside are initially white before becoming pinkish , lilac @-@ gray , and finally brownish as the spores mature . The stout stipe is bulbous and has a thick , white , felt @-@ like ring . The mushroom is poisonous , and causes severe gastrointestinal upset if consumed . It has an unpleasant odor similar to phenol or creosote , and develops a soapy @-@ metallic taste when cooked . *Agaricus hondensis* can be distinguished from similar *Agaricus* species by differences in geographic range , habitat , staining reaction , and odor .

= = Systematics = =

The species was first described as new to science by American mycologist William Alphonso Murrill in 1912 , based on collections he made in November , 1911 under Californian redwoods . In the same publication , Murrill also described the species *Agaricus bivelatoides* , *A. hillii* , and *A. macmurphyi* , all from the Pacific Northwest region of North America . The latter two were named to honor their original collectors , Albert Hill and James Ira Wilson McMurphy , respectively , while the former was named for its resemblance to *A. bivelatus* . In 1944 , Alexander H. Smith examined the type material of several of Murrill 's species , and concluded that there were no characters to separate *A. hondensis* from *A. bivelatoides* , *A. hillii* , or *A. macmurphyi* . He also determined that Sanford Myron Zeller 's *A. glaber* , published as new in 1938 , was also the same species as *A. hondensis* . The nomenclatural database MycoBank considers these names synonymous . The epithet *hondensis* refers to the type location , La Honda , California . The mushroom is commonly known as the " felt @-@ ringed agaricus " .

Agaricus hondensis has traditionally been classified in the section *Xanthodermatei* , a grouping of *Agaricus* species related to *A. xanthodermus* that are characterized by fruit bodies with phenolic odors , temporary yellowing discolorations in some parts of the fruit body , a negative Schaeffer ? s reaction , and toxicity . A molecular analysis has shown that it , along with the related species *A. freirei* and *A. phaeolepidotus* , comprise a basal lineage in a clade of related sylvan species that have weak yellowing reactions and some tendencies toward reddish bruising reactions . This lineage is closely related to a group of *Agaricus* species that are typically placed in the section *Sanguinolenti* . Phylogenetic evidence suggests that these three species belong to a clade that diverged shortly after the presumed split of the sections *Xanthodermatei* and *Duploannulati* .

= = Description = =

The cap is initially convex before flattening out , and reaches a diameter of 6 ? 15 cm (2 @. @ 4 ? 5 @. @ 9 in) . The dry and smooth cap surface is whitish or has pale pinkish @-@ brown to pinkish @-@ gray to fawn @-@ colored flattened fibrils or fine fibrillose scales (at least in the center) . In maturity , the fibrils usually darken to brown , reddish @-@ brown , or reddish @-@ gray , but in one northern form the fibrils are darker brown from the beginning . The flesh is thick and white . When bruised or injured , the flesh either does not change color , or may stain pale yellowish , then often slowly discolors pinkish . The odor of the crushed flesh is mild or faintly phenolic , but is usually distinctly phenolic in the base of the stipe .

The gills are initially pale pinkish to pinkish @-@ gray before becoming brown , then chocolate @-@ brown or darker when the spores mature . In maturity , the gills are free from attachment to the stipe , and are packed close together with little intervening space between them . The stipe is 7 ?

20 cm (2 @. @ 8 ? 7 @. @ 9 in) long , and 1 ? 2 @. @ 5 cm (0 @. @ 4 ? 1 @. @ 0 in) thick but with a thicker or bulbous base . Firm , smooth , and lacking the scales found on the cap , the stipe is white but discolours dingy pinkish or brownish in age or after handling . The flesh in the extreme base usually stains pale yellowish when bruised . The partial veil is membranous , white , and forms a thick , felt @-@ like ring on the upper portion of the stipe . The ring is skirtlike but often flares outward instead of collapsing against the stipe . A drop of dilute potassium hydroxide placed on the cap turns yellow .

Spore prints are purplish brown to chocolate brown . The smooth , thick @-@ walled spores are broadly ellipsoidal , and typically measure 5 @. @ 8 ? 7 @. @ 3 by 3 @. @ 7 ? 4 @. @ 4 ?m . The basidia (spore @-@ bearing cells) are four @-@ spored , club @-@ shaped , hyaline (translucent , and measure 20 ? 21 @. @ 3 by 5 @. @ 8 ? 7 @. @ 0 ?m . Cystidia on the gill edge (cheilocystidia) are sac @-@ shaped to club @-@ shaped , hyaline to pale yellowish brown in color , and have dimensions of 18 @. @ 3 ? 25 @. @ 6 by 7 @. @ 3 ? 11 @. @ 0 ?m ; there are no cystidia on the gill face (pleurocystidia) .

= = = Similar species = = =

Distinctive field characteristics of *Agaricus hondensis* include its woodland habitat , the yellow staining reaction with KOH , and its odor . *Agaricus freirei* closely resembles *A. hondensis* , and , based on similarities in DNA sequences , is a close relative . *A. freirei* is found in coastal regions of Spain . *A. hondensis* has also been confused with *A. silvaticus* and *A. placomyces* . *A. silvaticus* does not have foul @-@ smelling flesh , and has a negative KOH reaction . *A. placomyces* is found from the midwestern United States eastward . Another lookalike , the edible *A. subrutilescens* , has similar overall coloration , but is distinguished from *A. hondensis* by a mild odor , a shaggy stipe , and a less substantial ring .

= = Habitat and distribution = =

A saprobic species , the fruit bodies of *Agaricus hondensis* grow scattered or in groups under conifers or in mixed forests . They have also been reported to grow in fairy rings . The fungus is found in the Pacific Coast of North America , from British Columbia in Canada south to California , but is most common in California . The mushroom fruits in the fall from September to October throughout much of its range , but in California the fruiting season tends to be from November to February .

= = Toxicity = =

Agaricus hondensis mushrooms are toxic , and consuming the fruit bodies causes gastroenteritis . Some fruit bodies smell of creosote , an odor that becomes even more prevalent if the mushrooms are cooked . Cooking also introduces an unpleasant soapy @-@ metallic flavor . The fruit bodies are used as food by the vagrant shrew (*Sorex vagrans*) and the American shrew mole (*Neurotrichus gibbsii*) . Relatively high levels of the chemical hydroquinone are present in fruit bodies .