

= *Lactifluus piperatus* =

Lactifluus piperatus (synonym *Lactarius piperatus*) , commonly known as the peppery milk @-@ cap , is a semi @-@ edible basidiomycete fungus of the genus *Lactifluus* . Despite being edible , it is not recommended because of its poor taste , though can be used as seasoning when dried . The fruiting body is a creamy @-@ white mushroom which is funnel @-@ shaped when mature , with exceptionally crowded gills . It bleeds a whitish peppery @-@ tasting milk when cut . Widely distributed across Europe and eastern North America , *Lactifluus piperatus* has been accidentally introduced to Australia . Mycorrhizal , it forms a symbiotic relationship with various species of deciduous tree , including beech , and hazel , and fruiting bodies are found on the forest floor in deciduous woodland .

= = Systematics and taxonomy = =

The species was one of the many species named by Linnaeus who officially described it in Volume Two of his *Species Plantarum* in 1753 as *Agaricus piperatus* , the specific epithet deriving from the Latin adjective *piperatus* meaning " peppery " . For many years , Tyrolian naturalist Giovanni Antonio Scopoli had been considered the author of the first description ; however , a recent revision of the International Code of Botanical Nomenclature in 1987 changed the rules regarding the starting date and primary work for names of fungi . Previously , the starting date had been set as January 1 , 1821 , the date of the works of the ' father of mycology ' , Swedish naturalist Elias Magnus Fries , but now names can be considered valid as far back as May 1 , 1753 , the date of publication of Linnaeus ' seminal work .

Lactifluus piperatus was the original type species of the genus *Lactarius* . However , after the finding that *Lactarius* actually represented more than one genus , the species *Lactarius torminosus* was conserved as type for that genus . Thus , *L. piperatus* is now the type species of *Lactifluus* , which was split from *Lactarius* and contains mainly tropical milk @-@ caps , but also some species of the north temperate zone . Phylogenetic research showed that *L. glaucescens* , sometimes considered only a variety of *L. piperatus* , is a distinct species in Europe . Furthermore , the existence of at least ten lineages worldwide , with no overlap among continents , was shown for the group around *L. piperatus* , suggesting that populations in North America might actually be distinct species .

It is commonly known as the peppery milk cap , pepper milkcap , peppery *Lactarius* , peppery milk mushroom , white peppery milk @-@ cap , or other similar names . Similarly , in German it is known as the *Pfeffermilchling* (" pepper milk cap ") .

= = Description = =

Lactifluus piperatus has a cap that varies from 6 ? 16 cm (2 @.@ 5 ? 6 @.@ 5 in) across and is convex with a widely funnel @-@ shaped center . The cap is creamy @-@ white in colour , glabrous and not glossy ; its surface may become cracked in dry locales . The stipe is white in colour , smooth , 3 ? 7 cm (1 ? 3 in) long by 2 ? 3 cm (1 ? 1 in) thick and is cylindrical , sometimes tapering towards the base . There is a thick layer of firm white flesh , and the decurrent gills are particularly crowded and narrow , sharing the white colouration of the stem but becoming creamy with age . As with other species of *Lactarius* , there is abundant milk (latex) , which is white , and dries olive @-@ green . It has a white spore print with elongate , elliptic or amyloid spores which are ornamented , as with *L. vellereus* . The spores measure from 6 @.@ 5 ? 9 @.@ 5 by 5 ? 8 ?m , and have tiny warts .

L. vellereus is larger with a thick stipe , woolly cap and less crowded gills , but is not as tall . *Russula delica* is similar in colour and shape , though has adnate blue @-@ green tinged gills and no milk . *L. deceptivus* is also similar , but is differentiated by its less crowded gills , firmer cap margin and less acrid milk . Close to *L. piperatus* is *L. glaucescens* , which is differentiated by its milk that dries with a greenish colour .

= = Distribution and habitat = =

Lactifluus piperatus in the wide sense , i.e. including probably several species , is found in Europe , the Black sea region in northeastern Turkey , and eastern and central North America east of Minnesota . It has been accidentally introduced into Australasia , where it is found under introduced and native trees . It is found on the floor in deciduous woodland , particularly under beech (*Betula*) , and can be found throughout summer and autumn and into early winter . It is relatively common , though not as common as the similar species *L. vellereus* . *L. piperatus* is found solitarily or in scattered groups . It is sometimes found growing together with *Russula cyanoxantha* .

= = Edibility = =

Despite being described by some mycologists as inedible or even poisonous , *Lactifluus piperatus* is generally considered edible . However , it is not recommended , because of its unpleasant taste . It is difficult to digest when eaten raw , but is used as a seasoning when dried , or sometimes is eaten fresh after parboiling , though its taste is still unappetising . Some recommend frying in butter with bacon and onion or pickling , or baking in a pie or pastry as other ways to prepare it . The milk has a very hot and acrid taste , which is removed if boiled . The mushroom used to be highly regarded in Russia , where it would be picked in dry seasons when other edible species were less available . The mushroom is also popular in Finland , where cooks boil it repeatedly , disposing of the water each time , and then store it in salt water and keep it refrigerated , after which it is pickled or served in salads . When eaten fresh and raw , the mushroom has been known to cause an irritant reaction on the lips and tongue , which subsides after an hour . The close *L. glaucescens* has been reported to be poisonous , but it has been speculated that the " poisonings " were caused by the extremely strong , peppery taste , rather than by the presence of actual poisons .

Lactifluus piperatus forms part of an unusual and highly regarded dish in North America , being one of several species parasitized by the lobster mushroom *Hypomyces lactifluorum* . Once colonized by the parasite , an orange @-@ red crust forms over the surface of the mushroom , and the taste becomes delicious as the parasite infiltrates its host 's tissues . It is also a common source of food among red squirrels .

= = Other uses = =

Because of the presence of auxins in *Lactifluus piperatus* metabolites , it can be applied as a rooting hormone to aid the growth of seedlings of various species of plants , including hazel , beech and oak . In the 19th century , it was used as a folk cure for tuberculosis , though it had no effect . In more recent times , it has been found that *L. piperatus* can be used as an antiviral agent , and the latex has been used against viral warts .