= Lactarius vinaceorufescens =

Lactarius vinaceorufescens , commonly known as the yellow @-@ staining milkcap or the yellow @-@ latex milky , is a poisonous species of fungus in the family Russulaceae . It produces mushrooms with pinkish @-@ cinnamon caps up to 12 cm (4 @.@ 7 in) wide held by pinkish @-@ white stems up to 7 cm (2 @.@ 8 in) long . The closely spaced whitish to pinkish buff gills develop wine @-@ red spots in age . When it is cut or injured , the mushroom oozes a white latex that rapidly turns bright sulfur @-@ yellow . The species , common and widely distributed in North America , grows in the ground in association with conifer trees . There are several other Lactarius species that bear resemblance to L. vinaceorufescens , but most can be distinguished by differences in staining reactions , macroscopic characteristics , or habitat .

= = Taxonomy and classification = =

The species was first described by American mycologists Lexemuel Ray Hesler and Alexander H. Smith in 1960 , based on specimens collected in Muskegon , Michigan in 1936 . In the same publication , they also named the variety Lactarius vinaceorufescens var. fallax to account for individuals with prominently projecting pleurocystidia measuring 9 ? 12 µm broad , but they reduced this to synonymy with the main species in their 1979 monograph of North American Lactarius species . The fungus is classified in the subsection Croceini of the subgenus Piperates in the genus Lactarius , along with other species with latex that stains the fruit body tissue yellow , or with latex that slowly become yellow upon exposure to air .

The specific epithet vinaceorufescens is derived from the Latin word meaning " becoming wine reddish " . The mushroom is commonly known as the " yellow @-@ latex milky " or the " yellow @-@ staining milkcap " .

= = Description = =

The cap of L. vinaceorufescens is initially convex , then becomes broadly convex to nearly flat , and reaches diameters of 4 ? 12 cm (1 @.@ 6 ? 4 @.@ 7 in) wide . The cap margin is rolled inwards at first , but later expands , becoming somewhat uplifted and uneven with age . The cap surface is smooth , pale pinkish @-@ cinnamon with pinkish @-@ buff at the margin when young , becoming darker pinkish @-@ cinnamon to orangey @-@ cinnamon when older , faintly zoned with bands or water spots of nearly the same color . The gills are attached to slightly decurrent , narrow , close together , and often forked near the stem . There are several tiers of lamellulae (short gills that do not fully extend to the stem from the cap margin) . The gills are initially whitish to pinkish @-@ buff , later spotting wine red (vinaceous) to pinkish @-@ brown or dark reddish @-@ brown . The latex that is exuded when the mushroom is cut or injured is initially white , but rapidly turns sulfur @-@ yellow .

The stem is 4 ? 7 cm (1 @.@ 6 ? 2 @.@ 8 in) long by 1 ? 2 @.@ 5 cm (0 @.@ 4 ? 1 @.@ 0 in) thick , nearly equal in width throughout or enlarged slightly downward , and hollow . The stem surface is nearly smooth , with white to brownish stiff hairs at the base , pinkish @-@ white overall , and darkening with age . The flesh is moderately thick , white to pinkish , staining bright sulfur yellow . It has an acrid taste . The spore print is white to yellowish . The mushrooms are poisonous ; as a general rule , several guide books recommend to avoid the consumption of Lactarius species with latex that turns yellow .

The spores are roughly spherical to broadly ellipsoid , hyaline (translucent) , amyloid , and measure 6 @.@ 5 ? 9 by 6 ? 7 µm . They are ornamented with warts and ridges that sometimes form a partial reticulum , with prominences up to 0 @.@ 8 µm . The basidia (spore @-@ bearing cells) are four @-@ spored , and measure 28 ? 33 by 8 ? 10 µm . The pleurocystidia (cystidia found on the gill faces) are roughly cylindrical to narrowly club @-@ shaped when they are young , but soon broaden in the mid portion and taper to an abrupt point ; they reach dimensions of 40 ? 68 (up to 80 µm) by 9 ? 13 µm . The cheilocystidia (cystidia on the gill edges) are roughly club @-@

shaped or ventricose with acute apices , and measure 32 ? 44 by 6 ? 10 µm . Clamp connections are absent in the hyphae . The cap cuticle is a thin ixocutis composed of gelatinous hyphae that are typically 2 ? 4 µm wide . Projecting out from the cuticle surface are the ends of numerous connective hyphae , about 5 ? 15 µm long .

= = Similar species = =

Lactarius xanthogalactus has nearly identical microscopic features to L. vinaceorufescens , but macroscopically , it does not have the reddish @-@ vinaceous stains that develop on the cap , gills , and stem of L. vinaceorufescens , and it grows on the ground under oak . Another lookalike is L. colorascens , but it may be distinguished from L. vinaceorufescens by several features : a smaller fruit body ; a whitish cap that becomes brownish @-@ red with age and does not spot vinaceous or brown ; bitter to faintly acrid latex ; and slightly smaller spores . L. chrysorrheus is also similar , but it has a whitish to pale yellowish @-@ cinnamon cap with slightly darker spots and grows under hardwoods (especially oak) on well @-@ drained , often sandy soil , and its gills do not discolor or spot vinaceous or brown .

Other superficially similar species include L. rubrilacteus , L. rufus , L. subviscidus , L. fragilis and L. rufulus , but none of these species have the yellow staining reaction characteristic of L. vinaceorufescens . The edible species Lactarius helvus has an orange @-@ brown to light grayish @-@ brown cap with thin bands of dark grayish @-@ brown , a watery latex , and whitish to tan flesh with an odor resembling maple sugar or burnt sugar . Lactarius theiogalus , the " sulfur @-@ milk Lactarius " , has an oranger cap and white latex that slowly changes yellow upon exposure to air ; it is typically found in broadleaf and mixed woods .

= = Habitat and distribution = =

The fruit bodies of Lactarius vinaceorufescens grow scattered or in groups on the ground under pine between August and October . The species is known to develop mycorrhizal associations with Douglas fir (Pseudotsuga menziesii) . It is a fairly common and widely distributed species in North America . The mushroom has been found in boreal forests and high @-@ elevation forests of the Southern Appalachians , associated with the tree genera Picea , Abies , and Pinus . In California , it has been noted to commonly co @-@ occur with L. fragilis , L. rubrilacteus , Russula emetica , and R. cremoricolor .