

LACTARIUS – 6 Groups simplified and adapted from the Hessler and Smith (1979) book on *NA species of Lactarius*

System developed from a multi-access key - starts out simple enough, but as the distinctions between the various mushrooms multiplies, the permutations are complex and confusing.

The system below is one I learned originally in a Mushroom University workshop taught by Gary Lincoff. It is his adaptation of Hessler and Smith's laid out in their book, *N.A. Species of Lactarius*.

Dapetes

Albati

Dulces

Plinthogali

Russulares

Lactarius

Lactarius differs from other mushrooms in having a convex to vase-shaped cap on a ringless stipe.

Lactates on cutting or bruising.

Like russulas, they break easily.

Mycorrhizal with trees.

Amyloid reaction with Meltzer's solution (or iodine).

In N.A., it is a large genus. There are at least 200 species and 60 varieties.

Edibility

Majority are acid to peppery – some can be boiled several times with fresh water to remove the bitterness.

A few toxic ones: *L. chrysorrheus*, *L. torminosus*; *L. vinaceorufescens*,

Some choice edibles: *L. indigo*; *L. subpurpureus*; *L. chelidonium*; *L. volemus*; *L. hygrophoroides*; *L. corrugis*; *L. luteolus* – because of their meaty texture, they are good marinated in balsamic vinegar and olive oil and then broiled or grilled.

Questions to Ask When Examining *Lactarius* mushrooms (& making a dichotomous or multi-access key of your own):

Associated with what trees - conifer or deciduous, mixed forests, in sphagnum moss?

High or low elevation

Taste

Odor

Spore print color

Cap Characteristics

Sticky or dry

Thick or thin flesh

Glabrous or wrinkled or hairy

Zonate?

Umbo?
Margin Inrolled? Woolly?
Becoming convex to flat or vase-shaped

Gill Characteristics

Color? Color change from staining, bruising or age?
Crowded, close, moderately well-spaced, subdistant, distant?
Narrow, broad, thick, thin
Attached, subdecurrent, decurrent?

Stipe Characteristics

Thick or thin
Shape
Texture
Color
Hollow?
Staining reactions?

Latex Characteristics

Taste: acrid, peppery, sweet
Changes color or not
Stains or not
Volume?
Color?

DAPETES CHARACTERS:

Colored latex, Mild taste

(all but *Lactarius indigo* are associated with conifers)

Lactarius deliciosus

Lactarius deterrimus

Lactarius salmonicolor

Lactarius chelidonium var. *chelidonium*

Lactarius thynos

Lactarius indigo

Lactarius paradoxus

Lactarius subpurpureus

ALBATI

White fruitbody. White latex, unchanging exception)*

Acrid to peppery taste

Lactarius piperatus

Lactarius deceptivus

Lactarius subvellereus

Lactarius subvellereus var. *subdistans*

Lactarius subvernalis var. *cokeri*

*Lactarius glaucascens**

PLINTHOGALI

Dark brown to tan fruitbodies. White latex, often changing flesh pink. Cap dry and velutinous.

Lactarius lignyotus

Lactarius lignyotellus

Lactarius fumosus

Lactarius gerardii var. *subrufescens*

DULCES

Dry, 'meaty' pileus. Copious latex changing and/or staining pink-red or not.

Lactarius volemus
Lactarius hygrophoroides
Lactarius corrugis
Lactarius luteolus

RUSSULARES

Generally small, russula-like mushrooms. Many are fawn to red-brown. Some have distinctive odors when flesh is bruised. White to clear latex

Lactarius hibbardiae (Spelled *L. hibbardae* in field guides)
Lactarius glysosmus
Lactarius griseus
Lactarius quietus var. *incanus*
Lactarius hepaticus
Lactarius peckii
Lactarius oculatus
Lactarius rufus

LACTARIUS

Latex white to whey-clear. Latex unchanging or changing to yellow, purple, pink-orange, olive or grey. Caps viscid, zonate or with cottony margin

Lactarius zonarius
Lactarius psammicola
Lactarius torminosus
Lactarius controversus
Lactarius vinaceorufescens
Lactarius chysorrhoeus
Lactarius sordidus
Lactarius atroviridis
Lactarius mucidus

The above division of *Lactarius* species into 6 major groups is significantly more refined than presented here. There are also other ways of organizing this information. I recommend you consider buying the following book if interested in learning more about *Lactarius*. Bessette, Harris and Bessette, *Milk Mushrooms of North America* (2010)

They organize Lactarius into 4 Groups:

A. Latex colored a). on immediate exposure to air or b). within 5 minutes of exposure.

B. Strong Odors of crushed flesh: fruity, spicy, fragrant, aromatic, maple sugar, coconut, anise, geranium, apples, raw pumpkin, ripe crushed blackberries, or lemony; Odor spermatoc, alkaline, disagreeable. (Group A - 47) *L. volemus*, *L. hyzinguus*, *L. pyrogalus*

C. Latex color unchanging or not changing **within 5 minutes, taste mild within 2 minutes.** (Group B - 38)

Cap white, buff, yellow, orange, ochraceous to brownish-ochre, pale yellow-cinnamon, pale pinkish cinnamon to pale rosy cinnamon, red lilac, grey or brown; margin bearded or stem scrobiculate; or latex slowly changing color or staining or drying tissues a different color. (Group C - 46) *L. atriviridis*, *L. turpis*, *L. deceptivus*, *L. controversus*, *L. psammicola*, *L. torminosus*, *L. affinis*, *L. hyzingus*, *L. lignyotus*, *L. maculatus*

D. Cap white, buff, yellow, orange, ochraceous to brownish-ochre, pale yellow-cinnamon, pale pinkish cinnamon to pale rosy cinnamon, red lilac, grey or brown; but without bearded margin, scrobiculate stem, or latex changing color, staining or drying tissues. (Group D is small w 16) *L. rufus*, *L. peckii*, *L. oculatus*, *L. cinereus*, *L. griseus*, *L. hepaticus*

NOTE: While it may have been assumed by professional as well as amateur mycologists over the years that species ascribed to any division are genetically related to each other more closely than they are to species in other divisions, we have no confirmation of this assumption. In N.A., mycologists are just beginning to apply DNA sequencing to some *Lactarius* species. Whether knowing how closely the different species are to one another will help us learn them any better is an open question. Find your way to help you learn to recognize the species we have in the northeast.

You can start your dichotomous keys any number of ways: by focusing on, for example, all cool colored *Lactarius* vs all warm colored *Lactarius*.

All bitter to peppery-tasting *Lactarius* vs. all mild tasting *Lactarius*

All glabrous *Lactarius* vs. pubescent to hairy *Lactarius*.

All *Lactarius* associated with deciduous vs. those associated with coniferous trees.

All *Lactarius* associated with both deciduous and coniferous trees.

All *Lactarius* growing under birch vs. all *Lactarius* associated with oaks.

All *Lactarius* with white milk vs. all *Lactarius* with clear or whey-like milk.

All *Lactarius* that bruise a different color vs. those that don't.

All *Lactarius* that stain vs. those that don't.

All *Lactarius* with zonation on the cap.

All *Lactarius* with scrobiculate stems.

ETC., etc., etc.

You can create your own multi-access key listing a set of field characters and see what system works best for you to understand and differentiate one species from another.