

Fungi on fairways

Mushroom hunting turns up several species on golf courses.

George Barron, Ph.D., and Tom Hsiang, Ph.D.



Dunce cap



Fairy ring mushroom

Most mushrooms are soft, delicate and sensitive to drying, and they don't thrive in exposed habitats. They prefer the deep, dark recesses of the forest, where there is abundant organic debris providing nourishment.

Wide-open grassy places exposed to the sun all day are not the most likely spots for fungi to set up shop. Only a handful of fungi have adapted to the more rigorous demands of the open spaces. From time to time, often following prolonged periods of intermittent rain and cool weather, these mushrooms will pop up in abundance over fairways and other grassy places.

Over the years, thatch builds up in a grass stand. This organic matter mixed into soil provides an ideal substrate for microorganisms, including fungi. Not only does it supply food (cellulose and other materials) for energy, but the

thatch tends to hold moisture longer, which is ideal for fungus growth.

Some turf fungi also grow on dead wood. This source becomes available when trees die, and the stumps and hidden roots under the turf decay, feeding fungi such as the mica cap.

To eat or not to eat

Although golf courses are often a good place to spot mushrooms, do not eat these fungi without consulting the spray log. Unless you're certain that no herbicide, fungicide or insecticide residue is on the mushroom, it's unwise to consume a golf course mushroom.

What are mushrooms?

The active fungus is a very fine thread measured in microns (1 micron equals 1/1,000 millimeter). It colonizes thatch or buried wood. When times are

KEY POINTS

- Despite their preference for woodlands, some mushroom species have adapted to life on open fairways.
- Some fairway mushrooms are edible, provided no chemicals have been applied since their appearance.
- Thatch and submerged tree roots offer the organic matter needed to support mushrooms on golf courses.

Photos courtesy of George Barron

right, the fungus produces the fruit bodies that we call mushrooms. Mushrooms are among Mother Nature's most prolific, sophisticated and successful spore-producing machines. A good-sized mushroom can shoot off 100 million spores an hour for days on end. Even the smallest of the lawn mushrooms shoots off spores by the million. These are carried by capricious winds to other sites for further growth.

The following mushrooms are commonly found in open, grassy areas.

Mica cap (*Coprinus micaceus*) — Mica cap is probably one of the most common and widespread of the lawn mushrooms. It grows in old hardwood stumps, dead roots and buried wood. It produces mushrooms early in the year, usually in large clusters in grass or soil above the buried wood. The caps are small, tan-colored and radially streaked. When young, the mushrooms are covered with a layer of tiny mica-like particles that glisten in the morning sun and give the fungus its common name. These delicate flakes often disappear with rain or aging. This species is edible, but the mushrooms are flimsy and

will disappear to almost nothing during cooking, and its flavor is not generally lauded.

Haymaker's mushroom (*Panaeolina foenisecii*) — Perhaps the most common of the lawn mushrooms, this species comes up early in the year scattered or in small groups. It is recognized by its small, hemispherical cap and mottled gills. The caps often change from darkish brown to light tan as they dry. The spores are black and will leave black smudges on the fingers if the gills are handled. This small mushroom is only 1 to 3 centimeters in diameter. It is reported as poisonous because it contains very small amounts of the hallucinogenic psilocybin chemical.

Agrocybe (*Agrocybe vervacti*) — Locally common near the Great Lakes, but not as well known elsewhere, agrocybe is a distinctive yellow-brown mushroom. The caps are up to 4 centimeters across. It produces mushrooms during wet periods in summer.

Fairy ring mushroom (*Marasmius oreades*) — For the most part wild mushrooms aren't as flavorful as gourmets tell us. The fairy ring fungus,



Smooth lepiota



Mica cap



Haymaker's mushroom



Shaggy mane

however, is an exception and is one of the better-tasting edible mushrooms. This knowledge won't do you a lot of good in the Northeast, where the fungus is not that common.

In the West, particularly the prairies, *Marasmius oreades* is abundant and is also a serious problem and very destructive of turfgrasses. It produces mushrooms in rings, hence the common name.

Shaggy mane (*Coprinus comatus*) — Shaggy mane is one of the “inky cap” group, whose caps break down rapidly by self-digestion (autolysis) to an inky black fluid. Shaggy mane is a medium-sized mushroom that is easily recognized by its tall scaly cap. It is highly prized as an edible, but it ripens very rapidly to a black inky goo and must be eaten the day it is collected or you will have to suck it through a straw. Shaggy mane is more common in late fall and more prolific on disturbed sites where it colonizes woody debris.

Tippler's bane (*Coprinus atramentarius*) — This mushroom is conical to bell-shaped and has a smooth, silky, streaked cap with a metallic gray sheen. Although this inky cap is edible, do not consume alcohol with the mushroom or for several days after. The caps contain a substance called coprine, which in association with alcohol, gives most unpleasant (but not lethal) symptoms. Tippler's bane produces mushrooms in summer and fall.

Dunce cap (*Conocybe lactea*) — This species is only a few centimeters across at best. It is recognized by the whitish to pale tan conical cap and the gills that turn reddish brown as the spores mature. It is quite common and produces solitary mushrooms or scattered groups in early summer.

Smooth lepiota (*Leucoagaricus naucina*) — One of the larger “grass” mushrooms, the smooth lepiota can be 10 centimeters across or more. The cap is hemispherical to convex with a central knob. The gills are white at first but become pale pink with age. The stalk is stout and swollen at the base and has a

narrow ring. Eating this edible species is never recommended because it is very similar to the poisonous destroying angel, which has killed a number of people. It produces mushrooms in summer and fall and is especially common on newly developed grassy areas.

Sidewalk mushroom (*Agaricus edulis*) — This medium-sized fleshy mushroom is related to the meadow mushroom (*Agaricus campestris*) and the cultivated mushroom (*Agaricus brunnescens*) that you can find at the supermarket. All three are very similar in shape, size and general appearance. When young, the gills are pinkish but rapidly turn to a dark chocolate brown and even blackish brown. The stalk is stout with a well-developed ring. It grows in or near hard-packed ground such as that found around golf car paths. It is reportedly edible with a flavor like that of its commercially produced cousin.

While on the golf course, keep your eyes open for one of these common mushrooms. You can enjoy them as one of nature's little wonders. Or you can practice your swing on a *Conocybe* or a *Panaeolina*. The hallucinogenic mushrooms of the *Psilocybe* genus that are so common on the East and West Coasts do not seem to thrive in the central regions.

Acknowledgments

Thanks to Brian Shelton for the pictures of tippler's bane and smooth lepiota. This article appeared in the October/November 1999 issue of *GreenMaster*, the official publication of the Canadian Golf Superintendents Association.

References

1. Barron, G.L. 1999. *Mushrooms of northeast North America*. Lone Pine Publishing, Edmonton, Canada.
2. Lincoff, G.H. 1981. *National Audubon Society field guide to North American mushrooms*. Knopf, New York.
3. McKnight, K.H., and V.B. McKnight. 1987. *A field guide to mushrooms of North America*. Peterson Field Guide Series, Houghton Mifflin, Boston.
4. Miller, O.K. 1978. *Mushrooms of North America*. Dutton, New York.

George Barron, Ph.D., and Tom Hsiang, Ph.D., are in the department of environmental biology at University of Guelph, Ontario, Canada.



Agaricybe



Tippler's bane