

DISHING THE DIRT

Mushroom Compost Gets Second Life Along Roadsides, in Athletic Fields and Parks

Yes, mushrooms grow in manure, among other things, and there are plenty of jokes about that fact, but the product that results is no laughing matter. Mushroom growers are putting out the word that after these fungi are harvested, what's left behind is nutrient-rich, organic compost that makes an ideal soil additive for use along roads, in parks, and as a top dressing on athletic fields. And that's good news for townships.

BY BRENDA WILT / ASSOCIATE EDITOR

The Pennsylvania mushroom industry is dishing dirt — mushroom dirt, that is.

The commonwealth's mushroom growers want townships to know that the material their crop grows in, also known as mushroom soil, mushroom compost, and spent mushroom substrate, makes a great organic soil additive for road and park projects.

What's more, it can make township parks safer because it contains no heavy metals or other toxic substances and can even save taxpayer dollars because it reduces the need for fertilizer. To top it all off, there is practically an inexhaustible supply of the material.

The compost, when used properly, can improve plant growth in poor or marginal soil by improving the structure, reducing surface crusting and compaction, improving drainage, increasing beneficial organisms, and providing nutrients to vegetation, the industry says.

"What we're trying to do is get the



word out that this stuff is pretty darn good," says Gene Richard, director of the Community Awareness Committee, a Pennsylvania-based branch of the American Mushroom Institute.

The state Department of Transportation can back up that statement. In July 2004, the department used mushroom compost on an embankment along Route 30 in Chester County. A 4-inch layer of compost was placed on about 1,655 square yards of the surface, then seeded with grass and watered. According to PennDOT, the turf growth on the composted embankment has been excellent, and three years later, that portion still looks better than surrounding areas.

"It's a night-and-day difference," says Joe DiNorscia, manager of the soils division for Laurel Valley Soils, which provided the mushroom compost. He says one of the best things about the material is its long-term benefits.

"You may not see all of the benefits the first year," he says, "but after the second, third, or even fifth year, you

MUSHROOM COMPOST

will continue to see the results from using mushroom compost.”

Where does it come from?

Most of the mushroom compost found in Pennsylvania comes from the southeastern part of the state, home to the largest concentration of mushroom farms, although there are a few in western Pennsylvania, too.

Mushrooms have been grown in Chester County for more than 120 years, ever since Kennett Square florist William Swayne began growing them in his greenhouse in 1885. He built the first mushroom house in the area, and his son, J. Bancroft Swayne, eventually took over the business, which “mushroomed” into a commercial success. Entrepreneurs in the area took notice



Mushroom compost, the growing medium leftover from mushroom production, makes an ideal top dressing for township athletic fields because of its lack of toxic substances. Its organic nutrients, including nitrogen, phosphorous, and potassium, also reduce the need for fertilizer.

“In areas where people are going to be using the grounds, **mushroom compost** is **better than other types** because there are **no heavy metals, E. coli,** or other things that parents tend to **worry about** their kids being exposed to.”

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of the Swaynes' success and the crop's attractive price in the market and soon, mushroom farms began popping up all over Chester County.

Today, mushrooms are the state's largest cash crop, accounting for some 59 percent of nationwide sales each year. In fact, Chester County is known as the "mushroom capital of the world." All of those mushrooms require a lot of growing medium, and the commonwealth's mushroom farms produce nearly 700,000 cubic feet of it, more than half a million tons, each year.

Most people think mushrooms grow in manure, but that's not completely accurate. They are grown in a specific medium composed of straw from horse stables, hay, poultry manure, ground corn cobs, cottonseed hulls, cocoa shells, peat moss, and other organic substances.

This mixture is composted outdoors on a concrete slab, known as a composting wharf. The ingredients are mixed, wetted, and placed in large piles, or windrows, much like the leaf and yard waste many townships collect and turn into compost.

As the materials break down, the piles continue to be mixed, watered, and supplemented for 15 to 25 days. The composting process is followed by indoor steam pasteurization, which kills any pests or pathogens in the mix. Then the material is placed in beds on which the mushroom spores will be sown.

Once the mushroom crop is harvested, the spent mushroom compost is pasteurized once again and returned outside for further composting or sale as fresh mushroom substrate.

The benefits of mushroom compost

According to the American Mushroom Institute, mushroom compost has several advantages over compost from food and yard waste. The organization

RESOURCES

More About Mushroom Compost

For more information about mushroom compost, check out these resources:

- **American Mushroom Institute**, Washington, D.C., (202) 842-4344, www.americanmushroom.org.

- **Spent Mushroom Substrate** (Web site developed by AMI, above), www.mushroom-sms.com.

- **Mushroom Council**, San Jose, Calif., (408) 432-7200, www.mushroomcouncil.com.

- **Community Awareness Committee**, Gene Richard, (610) 334-0594, www.mushroomfarmcommunity.org.

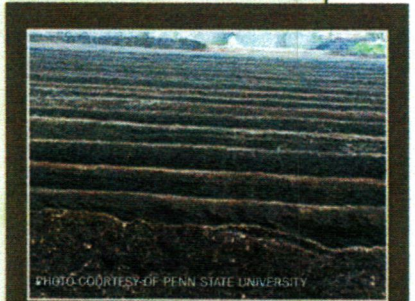


PHOTO COURTESY OF PENN STATE UNIVERSITY
Mushroom compost is often processed further in outdoor piles, or windrows, before being sold as a soil additive.

touts five specific benefits of mushroom compost:

- 1) The year-round production cycle ensures a consistent, formulated, and homogeneous product.

- 2) The composition includes sphagnum peat moss and organic matter, giving the compost a high water- and nutrient-holding capacity.

- 3) The extensive composting process and steam pasteurization create a weed-free product.

- 4) The addition of nitrogen during the outdoor composting process overcomes the nitrogen deficiencies prevalent with wood and paper-based composts.

- 5) The absence of heavy metals eases concerns about such materials.

DiNorscia says his company sells a lot of mushroom compost for parks and athletic fields precisely because of its "clean" nature.

"In areas where people are going to be using the grounds," he says, "mushroom compost is better than other types because there are no heavy metals, E. coli, or other things that parents

tend to worry about their kids being exposed to."

A nutrient-rich medium

While mushroom compost will not eliminate the need for fertilizer altogether, it reduces the amount needed because it already contains the nutrients found in basic fertilizers: nitrogen, phosphorous, and potassium.

According to research conducted by Penn State University's School of Agricultural Sciences, mushroom compost contains an average of 1.12 percent nitrogen in a mostly organic form that is slowly released to plants. What's more, the material has a carbon to nitrogen ratio of 13:1, well within the recommended range of 30:1 or lower for composts, indicating that it is a stable material that makes nutrients available to plants over a long period.

The compost also contains about 0.67 percent phosphorous and 1.24 percent potassium, as well as other nutrients, such as calcium (2.29 percent), magnesium (0.35 percent), and iron (1.07 percent). It generally has a pH of

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MUSHROOM COMPOST

about 6.6, placing it about midway in the 6.0 to 7.0 range recommended for most plants.

Calcium, magnesium, potassium, and other nutrients are forms of soluble salts, which can injure some grasses in excessive amounts. Penn State's research shows that quality mushroom compost does not contain concentrations of these salts high enough to impede grass germination or damage existing turf, such as when used as a top dressing on athletic fields.

Also, when the compost is tilled or incorporated into the soil, any salt concentrations are diluted, and irrigation and rainfall will further dilute them. Compost suppliers should be able to provide a laboratory analysis of their product to ensure that it is good-quality, reliable compost.

Where to get the compost

Some of Pennsylvania's mushroom farmers sell their spent mushroom substrate directly to farmers, municipalities, and home gardeners, while others sell it to garden centers, landscaping companies, and corporate clients. Townships may be able to find mushroom compost at local garden centers, but purchasing bagged compost is not really cost-effective except for relatively small applications.

The box above contains a list from the American Mushroom Institute of mushroom compost suppliers in southeastern Pennsylvania. Some may deliver outside their local area, but townships will generally have to haul the compost themselves.

Townships looking for a nutrient-rich soil additive for roadside or park projects should consider mushroom compost, Gene Richards of the Community Awareness Committee says. It is beneficial to soil and plants and available in a nearly inexhaustible supply from Pennsylvania's mushroom growers. ♦



PHOTO COURTESY OF THE UNIVERSITY OF WARWICK, RHODE ISLAND

Lots of mushroom farms in Pennsylvania mean lots of mushroom compost. The nutrient-rich soil additive is available year-round in a virtually inexhaustible supply.

Mushroom Compost Suppliers

Giorgi Mushroom Company

P.O. Box 96
Temple, PA 19560
(610) 926-8811

Guizzetti Farms

P.O. Box 364
Landenburg, PA 19350
(610) 268-3186

Hy-Tech Mushroom Compost

P.O. Box 390
West Grove, PA 19390
(610) 869-0202 / 610-331-1849
www.hy-techmushroom
compost.com

Kaolin Mushroom Farms, Inc.

P.O. Box 1037
Kennett Square, PA 19348
(610) 444-4800

Laurel Valley Soils

P.O. Box 640
Avondale, PA 19311
(610) 268-5555
www.laurelvalleysoils.com

Marlboro Mushrooms

200 Clonmell-Upland Road
West Grove, PA 19390
(610) 869-8765

Modern Soils

P.O. Box 388
Avondale, PA 19311
(610) 268-3535

Nutra Soils

P.O. Box 485
Toughkenamon, PA 19374
(610) 268-2225

Select Soils

649 W. South St.
P.O. Box 1037
Kennett Square, PA 19348
(610) 268-0525

Joseph Silvestri & Sons Mushrooms

1168 Naamans Creek Road
Boothwyn, PA 19061
(610) 358-0330

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