

## Top 10 Reasons to Use Mushroom Compost on Corn Crops Instead of Chemical Fertilizers

- 1 Increase yields and lower costs. Reduce the need for inorganic fertilizers.
- 2 Decrease or eliminate the cost of liming.
- 3 Restore soil structure by improving soil quality, nutrient content and beneficial soil microbe population and activity.
- 4 Improve water retention during drought conditions and in poor soils. Improve water infiltration in clay soils.
- 5 Mushroom Compost's organic nutrient values are verifiably consistent and available year round.
- 6 It is sustainable agriculture and a good environmental stewardship practice, providing a nutrient rich soil amendment in a complete ecological recycling process.
- 7 An addition of compost reverses soil organic matter depletion, providing improved crop production.
- 8 Composting stabilizes nitrogen and reduces nitrate leaching.
- 9 Significantly higher crop yields in droughts - studies indicate compost amended soil can produce yields higher than traditional fertilizer yields in drought years.
- 10 Mushroom Compost is a Pennsylvania Department of Agriculture (PDA) accepted fertilizer and PA Preferred product.  
([www.agriculture.state.pa.us/papreferred](http://www.agriculture.state.pa.us/papreferred))

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[www.mushroomcompost.org](http://www.mushroomcompost.org)

### Relative Value of Fresh Mushroom Compost To Commercial Fertilizers

*Numbers are calculated from a wet volume basis.*

1 ton MC  
(equivalent to 3.5 cubic yards)

Nitrogen (N) = 22.27 lbs/ton

Phosphate (P<sub>2</sub>O<sub>5</sub>) = 13.29 lbs/ton

Potash (K<sub>2</sub>O) = 24.70 lbs/ton

### 2006 Commercial Fertilizer Prices based on Ohio State University Corn Fertilizer recommendations: (Delivery cost / freight not included)

N = \$ 0.56/lb

P = \$ 0.41/lb

K = \$ 0.33/lb

#### Mushroom Compost Value / yd<sup>3</sup>

6.40 lbs (N) @ \$0.56/lb = \$ 3.58

3.82 lbs (P<sub>2</sub>O<sub>5</sub>) @ \$0.41/lb = \$ 1.57

7.10 lbs (K<sub>2</sub>O) @ \$0.33/lb = \$ 2.34

**NPK cost \$ 7.49/yd<sup>3</sup>**

#### Mushroom Compost Value / ton

22.5 lbs (N) @ \$0.56/lb = \$12.60

13.5 lbs (P<sub>2</sub>O<sub>5</sub>) @ \$0.41/lb = \$ 5.54

25.2 lbs (K<sub>2</sub>O) @ \$0.33/lb = \$ 8.32

**NPK cost \$ 26.46/ton**

## Applying Mushroom Compost to Corn Crops



# WHAT IS MUSHROOM COMPOST?

Often referred to as Spent Mushroom Substrate (SMS), Mushroom Compost is the composted result of a rich growth medium for mushrooms. It is made from agricultural materials, such as hay, straw, straw horse bedding, poultry litter, cottonseed meal, cocoa shells and gypsum. Sphagnum peat moss adds to the organic nature of the substrate, providing a consistent, formulated and homogeneous product.

After mushrooms are harvested, the Mushroom Compost is steam treated prior to removal to eliminate any pest, pathogens and weed seeds resulting in a PDA accepted fertilizer product.

Mushroom Compost has high water and nutrient holding capacity and exhibits no nitrogen draw down problems. As a fertilizer and soil amendment for farming, Mushroom Compost supports plant growth in a variety of plant applications such as corn, pumpkin, tomato and potato yields.

## Using Mushroom Compost On Corn Crops

Application rates vary with soils and purpose of application therefore yearly soil testing is recommended before application of any fertilizer or soil amendment.

Mushroom Compost may be applied at any time of the year or season and incorporated into the soil to increase absorption and nutrient dissemination. Most often, application is made in the spring and fall.

It is recommended to apply a 2 inch depth of fresh mushroom compost and then till into the soil. This would require approximately 260 cubic yards or 75 tons per acre and would provide 1,664 lbs of Nitrogen, 988 lbs Phosphate, 1,846 lbs of Potash and 38,142 lbs of organic matter per acre to the soil.



## What Essential Plant Nutrients are in Mushroom Compost?

From 30 random samples of fresh Mushroom Compost, Dr. Michael Fidanza, Associate Professor of Horticulture, The Pennsylvania State University (Reading, PA), published these results.

### Mean of Parameters Measured/Calculated On a Wet Volume Basis:

bulk density	574.73 lbs/yd <sup>3</sup>	
pH	6.62	
C:N (carbon-to-nitrogen) ratio	12.79 : 1	
soluble salts (1:5 w:w)	13.27 mmhos/cm	
	lbs/yd <sup>3</sup>	%
solids	243.37	42.35
moisture	331.47	57.67
organic matter	146.73	25.53
carbon (C)	81.13	14.12
total nitrogen (N)	6.40	1.12
organic nitrogen (Organic-N)	6.19	1.08
ammonium nitrogen (NH <sub>4</sub> -N)	0.21	0.04
phosphorus as (P <sub>2</sub> O <sub>5</sub> )	3.82	0.67
potassium as (K <sub>2</sub> O)	7.10	1.24
calcium (Ca)	13.17	2.29
magnesium (Mg)	2.01	0.35
sulfur (S)	4.91	0.85
iron (Fe)	1.07	0.19
manganese (Mn)	0.12	0.02
copper (Cu)	0.04	0.01
sodium (Na)	0.67	0.12
aluminum (Al)	0.89	0.15
zinc (Zn)	0.05	0.01

## Sample Applications

(Based on application of fresh Mushroom Compost with a mean bulk density of 574.73 lbs/yd<sup>3</sup>)

### 1" depth (65 to 130 yd<sup>3</sup>/acre)

Nitrogen (N)	1.12 %	6.4 lbs/yd <sup>3</sup>	832 lbs/acre
Phosphate (P <sub>2</sub> O <sub>5</sub> )	.67 %	3.8 lbs/yd <sup>3</sup>	494 lbs/acre
Potash (K <sub>2</sub> O)	1.24 %	7.1 lbs/yd <sup>3</sup>	923 lbs/acre
Organic Matter	25.53 %	146.7 lbs/yd <sup>3</sup>	19,071 lbs/acre

### 2" depth (260 yd<sup>3</sup>/acre)

Nitrogen (N)	1.12 %	6.4 lbs/yd <sup>3</sup>	1,664 lbs/acre
Phosphate (P <sub>2</sub> O <sub>5</sub> )	.67 %	3.8 lbs/yd <sup>3</sup>	988 lbs/acre
Potash (K <sub>2</sub> O)	1.25 %	7.1 lbs/yd <sup>3</sup>	1,846 lbs/acre
Organic Matter	25.53 %	146.7 lbs/yd <sup>3</sup>	38,142 lbs/acre

### 3" depth (390 yd<sup>3</sup>/acre)

Nitrogen (N)	1.12 %	6.4 lbs/yd <sup>3</sup>	2,496 lbs/acre
Phosphate (P <sub>2</sub> O <sub>5</sub> )	.67 %	3.8 lbs/yd <sup>3</sup>	1,482 lbs/acre
Potash (K <sub>2</sub> O)	1.25 %	7.1 lbs/yd <sup>3</sup>	2,769 lbs/acre
Organic Matter	25.53 %	146.7 lbs/yd <sup>3</sup>	57,213 lbs/acre

Mushroom Compost should always be used in accordance with good farming practices and in conjunction with a Nutrient Management or Conservation Plan. Your local Conservation District can answer any questions as to the proper use of Mushroom Compost as they work with you in implementing Best Management Practices.

### And what you get:

- ✓ Low cost, consistently high quality organic fertilizer
- ✓ Reduced or eliminated liming cost
- ✓ Improved soil health
- ✓ Improved crop health
- ✓ Higher crop yields in drought than with inorganic fertilizers
- ✓ Compost from recycled agricultural components
- ✓ Since mushrooms are grown year round, Mushroom Compost is available year round

