

# Module 02.01: Benefits of Compost – Nutrient Recycling



LSU AgCenter Home Composting Certificate Course

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# Essential Plant Nutrients

Nutrient	Uptake Form	Source	Nutrient	Uptake Form	Source
CARBON	$\text{CO}_2, \text{HCO}_3$	Air & Water	boron	$\text{H}_3\text{BO}_3, \text{H}_2\text{BO}_3^-, \text{HBO}_3^{2-}$	Soil
HYDROGEN	$\text{H}_2\text{O}$	Air & Water	chlorine	$\text{Cl}^-$	Soil
OXYGEN	$\text{H}_2\text{O}$	Air & Water	copper	$\text{Cu}^{2+}$	Soil
NITROGEN	$\text{NO}_3^-, \text{NH}_4^+$	Soil	iron	$\text{Fe}^{2+}$	Soil
PHOSPHORUS	$\text{H}_2\text{PO}_4^-, \text{HPO}_4^{2-}, \text{PO}_4^{3-}$	Soil	manganese	$\text{Mn}^{2+}$	Soil
POTASSIUM	$\text{K}^+$	Soil	molybdenum	$\text{MoO}_4^{2-}$	Soil
Sulfur	$\text{SO}_4^{2-}$	Soil	zinc	$\text{Zn}^{2+}$	Soil
Calcium	$\text{Ca}^{2+}$	Soil			
Magnesium	$\text{Mg}^{2+}$	Soil	nickel, silicon, sodium, cobalt	$\text{Ni}^+, \text{Si}^+, \text{Na}^+, \text{Co}^{2+}$	Soil

ALL CAPS=Primary MacroNutrients    First Letter Cap=Secondary Macronutrients    all lowercase=micronutrients

# Dry Weight



Carbon 45%  
Hydrogen 45%  
Oxygen 06%

Nitrogen 1.5%  
Phosphorus 0.2%  
Potassium 1.0%  
Calcium 0.5%  
Magnesium 0.2%  
Sulfur 0.1%

Chlorine 0.01%  
Iron 0.01%  
Manganese 0.005%  
Boron 0.002%  
Zinc 0.002%  
Copper 0.0006%  
Molybdenum  
0.00001%  
Nickel, Cobalt,  
Sodium, Silicon  
?%

Leaves, limbs, newspaper, pasteboard, eggshells, crawfish shells, wood chips, grass clippings, food waste, etc.

Water ( $H_2O$ )

Heat

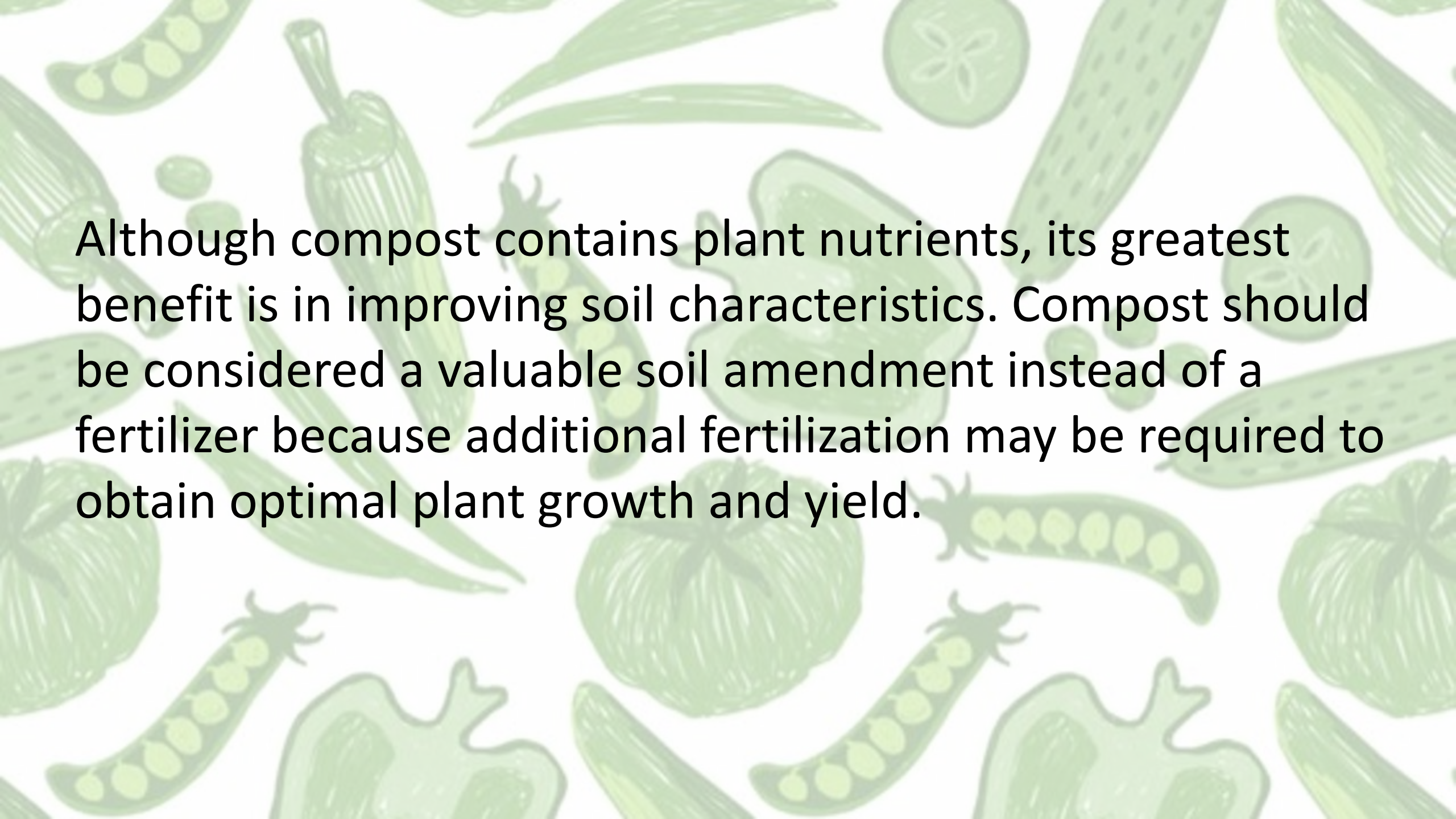
Carbon Dioxide ( $CO_2$ )

Microorganisms

Oxygen ( $O_2$ )

Humus, Finished Compost (contains essential plant nutrients)  
Beneficial Soil Organisms





Although compost contains plant nutrients, its greatest benefit is in improving soil characteristics. Compost should be considered a valuable soil amendment instead of a fertilizer because additional fertilization may be required to obtain optimal plant growth and yield.



Please post all your questions and results to the message board .

