

GROW ORGANITE

SOIL RESTORATION & FERTILIZER

Why is Slow Release Important?

The organic nitrogen in Grow Organite offers advantageous efficiency over inorganic ammonium, nitrate and urea nitrogen sources. When inorganic urea and ammonium forms of nitrogen are deposited on moist soil they undergo a series of chemical conversions to ammonia. A portion of the ammonia gas escapes to the atmosphere rather than becoming a plant nutrient. Nitrate nitrogen does not absorb strongly to soil particles, and is readily leached below the root zone.

Organic Nitrogen - being derived from proteins, amino acids including nitrogen found within living organisms must be mineralized by soil microbes, this provides a slow but continuous supply of nitrogen which is taken up by the plant rather than lost to the atmosphere or ground water. Under warm condition (77 to 95°F) the slow release portion of Grow Organite Nitrogen (75% Slow Release N) can be expected to provide nitrogen release for up to 8 weeks or longer.

Organic Phosphorous: Organic bound phosphorous has been synthesized by microorganisms during the creation of Grow Organite and exists as 1) inositol phosphates or phosphate esters of a sugar like compound, 2) nucleic acids, 3) phospholipids. Phosphorous held in organic form is mineralized by the same general process that releases nitrogen, and is stable over both acidic and alkaline pH. Inorganic phosphorous is immediately available but subject to rapid fixation or absorption of phosphate ions on soil particles. Grow Organite's organic bound phosphorous is released by mineralization thereby improving phosphorous availability to plants by reducing the tendency of the mineral fraction of the soil to fix phosphorous.

Why is Carbon the Key Ingredient in Soil Restoration?

Carbon / Nitrogen Ratio:

The C/N ratio of organic fertilizer is important for two reasons:

- 1) Intense competition among soil microorganisms and plants for available soil nitrogen occurs when fertilizers having a high C/N ratio are applied to soil. Microbes use carbon to build cells and the nitrogen to synthesize protein.
- 2) The C/N ratio of fertilizers helps determine their rate of mineralization and rate at which Nitrogen is made available to plants. If organic fertilizer has a C/N greater than 20:1 (low nitrogen) soil microbes cannot obtain enough nitrogen and cause a loss of plant available nitrogen (deficiency) called immobilization. Grow Organite with the advantageous low C/N ratio of 6:1 has a high nitrogen content, high enough for soil microbe needs plus excess organic nitrogen for conversion (mineralization) to plant available slow release nitrogen. Up to 20 weeks without excessive top growth.

	C/N Ratio
Grow Organite	6:1
Alfalfa Meal	13:1
Sheep Manure	17:1
Poultry Manure	18:1
Horse Manure	50:1
Grass Clippings from Fertilized Lawn.....	31:1
Small grain corn stalks	80:1
Sawdust, Woodchips.....	400:1