

# ***INSIDE THE NUMBERS***

## ***THE REAL DIFFERENCE***

Fertilizer numbers “N-P-K” may represent the same elements but not the same qualities. All numbers are not the same just like the source and quality of all plant nutrients are not the same. So, what is inside the numbers of the Biosol products? How are these numbers different than other fertilizers, organic or non-organic?

### **The Origin of Biosol Products**

A beneficial fungal biomass (mycelium) is obtained by the fermentation of raw materials such as: soybean meal, cottonseed meal, sucrose, glucose, trace elements and vitamins under constant sterile conditions.

#### **Organic Matter >75%:**

#### **The Engine for Soil and Plant Health**

**Organic Matter** should not be confused with organic material or organic debris. Organic matter provides 90% to 95% of nitrogen in unfertilized soils. Organic matter is a carbon (food) supply for beneficial soil microbes. Improving soil structure by increasing soil aggregation in turn promotes aeration, infiltration, and percolation. Organic matter furnishes 30% to 70% of a soil’s cation exchange capacity. The higher a soil’s cation exchange capacity, the greater its ability to hold onto nutrients until needed by the plant and microbes.

#### **Nitrogen 7% (N):**

#### **The Fuel for Soil and Plants**

**Biosol’s Nitrogen** comes from a several unique nitrogen sources. Fermented organic material, Dry Mycelium and Chitin. This is what separates the Biosol products from other organic fertilizers

**Fermented Organic Material:** The fermentation process of the raw plant material organically binds the nitrogen into a stable, high quality, long lasting nutrient.

**Dry Mycelium** is a basic element of the Biosol products is another nitrogen source for plants and the vegetative source for mycorrhizae. It’s an ideal natural nitrogen source for soil bacteria, fungus, plants and mycorrhizal fungi. This is the fungi that enhances the plant’s ability to maximize soil nutrients and water while helping the plant with environmental stress (drought and transplant), leading to healthier, stronger plants.

#### **Phosphorous 2% (P):**

#### **Oil for the Engine**

Biosol’s organic phosphorous comes from the fungal & bacterial biomass process and is a long lasting phosphorous that is stable and available to plants. Inorganic phosphorous can be present in soils yet not available for plant use. Therefore, Biosol’s organic phosphorous is available when needed and the utilization level can be higher compared to mineral phosphorous.

#### **Potassium 1% (K):**

#### **Oil for the Engine**

This organically bound potassium again is stable and long-lasting; therefore, it will not leach into the water or water systems. It is available for soils and plants when needed. This organic form of potassium comes from Biosol’s fermented fungal and bacterial biomass. This is unique and different from other fertilizers. It’s a safe and effective form of potassium to be used with all plants.

**Organic Carbon > 35%:**

**Spark Plug for the Engine**

**Organic Carbon** is bound in the organic substance of the Biosol products, it's a stable and consistent source of carbon. Organic soil carbon (OSC) is the basis of soil fertility. It is an energy source and trigger for nutrient availability. The carbon cycle is a fundamental part of life on earth.

**SOIL AND PLANT HEALTH**

**Chitin**

**Organic Mechanic Soil & Plant**

Biosol's has a high amount of chitin that comes from the exoskeleton of fungi which has a natural soil amending and nutrient influence for soils and plants. It is a hard structure that is a slow release nitrogen source and retains moisture. The cellular structure of the chitin material is how it stores and allows water to be utilized for plants in a better capacity. It also helps fight soil-based pathogens.

**MATERIAL COMPARISONS**

<b><u>Product Benefits</u></b>	<b><u>Biosol</u></b>	<b><u>Biosol Forte</u></b>	<b><u>Poultry Manure</u></b>	<b><u>Chemical Fertilizer</u></b>	<b><u>Composted Fert/ Mix</u></b>	<b><u>Compost</u></b>
Positively affects soil fertility & structure	+++	+++	+	---	--	++
Positively affects soil microorganisms	+++	+++	+	---	--	++
Derived from 100% plant product	Yes	Yes	No	No	No	Some
Provides beneficial bacteria & fungal biomass	+++	+++	---	---	---	---
High content of organic matter	+++	+++	+	---	--	+
Positive effect on humus content	+++	+++	-	--	-	+++
High content of chitin	+++	+++	---	---	---	---
Risk of burning seed or existing vegetation	---	---	-	+++	+++	---
Risk of nitrogen leaching	---	---	+	+++	+++	---
Positively affects root system	+++	+++	+	-	-	+
Nutrients available in 2 <sup>nd</sup> growing season	+++	+++	-	---	--	++
Risk of plant disease / pathogens	---	---	+	+++	+++	+
EPA approved for water sensitive areas	+++	+++	--	---	---	---
Animal and child friendly	+++	+++	-	---	--	++
Retains 3-4 times its weight in water	+++	+++	--	---	--	+++

Very, Very Strong  
Very Strong  
Strong

+++  
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+

**Rating**

Very, Very Low  
Very Low  
Low

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