

WATER

Biosolids Management in Oklahoma

Nutrients in Biosolids



Biosolids Characteristics - characteristics of biosolids that affect its suitability for land application and beneficial use include organic content (usually measured as volatile solids), nutrients, pathogens, metals, and toxic organics. The fertilizer value of biosolids is based primarily on the content of nitrogen, phosphorus, and potassium. Typical nutrient values of biosolids as compared to commercial fertilizers are reported in **Table 1**.

In most land application systems, biosolids provides sufficient nutrients for good plant growth. In some applications, the phosphorus and potassium content of wastewater biosolids may be too low to satisfy specific plant uptake requirements.

Table 1: Comparison of nutrient levels in commercial fertilizers and wastewater biosolids.

Nutrients (%)	Nitrogen(N)	Phosphorus (P)	Potassium (K)
Fertilizers for typical agricultural use	5	10	10
Typical values for stabilized wastewater biosolids	3.3	2.3	0.3

Based on the typical domestic biosolids (See Table 1) following nutrient levels in Table 2 per dry ton would be available.

Table 2

	Level in biosolids (%)	lbs./ Dry Ton
Nitrogen (N)	3.3	66
Phosphorus (P)	2.3	46
Potassium (K)	0.3	6

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Applications - For agricultural utilization, biosolids contains macronutrients (nitrogen, potassium, and phosphorus) and micronutrients (boron, manganese, copper, molybdenum, and zinc) and can also be a valuable soil conditioner. For reclamation of the soil.

disturbed and marginal lands, biosolids organic matter can improve granulation, reduce plasticity and cohesion, increase water holding capacity and soil CEC, supply plant nutrients, and increase the buffering capacity of

FOR ADDITIONAL INFORMATION ON THIS SUBJECT YOU MAY CONTACT YOUR LOCAL DEQ REPRESENTATIVE OR THE WATER QUALITY DIVISION OF THE DEPARTMENT OF ENVIRONMENTAL QUALITY AT (405) 702-8100.