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Soil Foodweb Analysis

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Plants: turf
 Sample Received: 12/13/2004
 Report Sent: 12/28/04

Organism Biomass Data

Sample #	Unique ID	Dry Weight of 1 gram Fresh Material	Active Bacterial Biomass (µg/g)	Total Bacterial Biomass (µg/g)	Active Fungal Biomass (µg/g)	Total Fungal Biomass (µg/g)	Hyphal Diameter (µm)	Protozoa Numbers/g			Total Nematode Numbers #/g	Percent Mycorrhizal Colonization of Root	
								Flagellates	Amoebae	Ciliates			
4001	Thompson	0.93	19.0	395	12.0	129	2.5	29,671	39	0	1.32	8%	
Bold Means Low		Very low soil moisture content. This is a factor of low OM and/or poor soil structure.	Higher than normal bacterial activity.	Very high bacterial activity.	Good fungal activity.	Low fungal biomass. The soil will lack disease suppression, nutrient retention, and the ability to build soil structure.	OK.	Very good flagellates, but the amoebae and ciliates are low. This indicates a lack of diversity in the soil. A diverse community of protozoa needs to be inoculated with good compost and/or compost tea.	Low numbers, poor diversity. Root-feeding nematodes are present.	Very low mycorrhizal colonization. Introducing spores is recommended.			
		Desired Range	0.45 - 0.85	1 - 5	175 - 300	1 - 5	175 - 300	(A)	5000 +	5000 +	50 - 100	10 - 20	40% - 80%

(A) Hyphal diameter of 2.0 indicates mostly actinobacteria hyphae, 2.5 indicates community is mainly ascomycete, typical soil fungi for grasslands, diameters of 3.0 or higher indicate community is dominated by highly beneficial fungi, a Basidiomycete community.

Season, moisture, soil and organic matter must be considered in determining optimal foodweb structure.

If sample information, such as pesticide, fertilizer, tillage, irrigation are not included on the submission form, sender's locale is used.

One report is sent to the mailing address on the submission form.

All submissions receive free 15 minute consultation, call 1-631-474-8848

04001, Soil Type: Loam, low OM.

Organism Ratios

Sample #	Unique ID	Total Fungal To Total Bacterial Biomass	Active to Total Fungal Biomass	Active to Total Bacterial Biomass	Active Fungal to Active Bacterial Biomass	Plant Available N Supply from Predators (lbs/acre)	Root-Feeding Nematode Presence
4001	Thompson	0.33	0.09	0.05	0.63	75-100	Root-knot
		The soil is too bacterial for turf. Apply a thin layer of fungal compost or castings. Follow up with a granular humic acid to slowly build fungal biomass through the winter. In the spring, begin apply compost teas at 25 gal/acre every 2 weeks. Add 1/2 cup of kelp or humic acid and 1/2 cup of fish hydrolysate per 1000 sq ft.	Good amount of the fungi present are active.	Good bacterial activity.	There is more bacterial activity than fungal activity. The granular humic acid will boost fungal activity for the dormant season.	Fair supply of plant available N from predators.	Inoculate with beneficial nematodes via: compost or tea, and promote good soil structure so they have an environment conducive to beneficial nematodes.

Desired Range	*(1)	*(2)	*(2)	*(3)	*(4)	*(5)
(1) Brassica: 0.2-0.5; Row crops: 0.6 to 1.2; Early successional grass: 0.5-0.75; Late successional grass: 0.8 to 1.5; Berries, shrubs, vines: 2-5; Deciduous Trees: 5-10; Conifer: 10-100.						
(2) Warm spring, early summer: 0.25 to 0.95; Early spring, late winter & mid-summer: 0.10 to 0.15; Fall rain: 0.15 to 0.20; Drought/frozen soil/heavy metal/many pesticides: 0.05 or lower. Values greater than indicated mean the organisms are recovering from a negative impact. Values lower mean organisms are not recovering and help is needed, typically addition of their food resource is required.						
(3) Generally 1:1 results in good soil aggregate structure in crop soil; 2 to 5 for deciduous trees; 5 for conifers. Values above 1:1 mean soil pH may be decreasing, values less than 1:1 means pH increasing. Anaerobic conditions generally will result in extremely low soil pH.						
(4) Based on release of N from protozoan and nematode consumption of bacteria and fungi (see Ingham et al. 1985). Often protozoa and nematodes compete for food resources. When one is high, the other may be low. Also, if predator numbers are high, the prey may have low numbers.						
(5) Identification to genus.						

Nematodes per Gram of Soil

	4001	
Bacterial Feeders		
Cervidellus	0.114	
Eucephalobus	0.200	
Rhabditidae	0.601	
Fungal Feeders		
Epidorylaimus	0.086	
Fungal/Root Feeders		
Aphelenchus	0.114	
Cephalenchus	0.057	
Root Feeders		
Meloidogyne	Root-Knot nematode	0.057