



Soil Foodweb Inc.

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Soil and Compost Foodweb Anal

Client: Gina Kelsch

Hendrikus Shraven

14461 Tiger Mountain Rd

Issaquah, Wa 98027

Sample Received: 11/18/99

Plant: grass Mid-bacterial-dominated pl

Invoice # 1688

Organism Biomass Data

Sample #	Dry Weight of 1 gram Fresh Material	Active Bacterial Biomass	Total Bacterial Biomass	Active Fungal Biomass	Total Fungal Biomass	Hyphal Diameter (µm)	Protozoa Numbers /g			Total Nematode Numbers (#/g)
		(µg/g)	(µg/g)	(µg/g)	(µg/g)		Flagellates	Amoebae	Ciliates	
81618 Nelson Blown Topsoil	0.68	26.6	282	10.6	11	2.5	67,286	84,050	250	9.3
	OK	Excellent!	Excellent!	Good	In the past, something was done that killed the fungi. However, good recovery is occurring	OK	Excellent numbers of protozoa, good nutrient cycling is occurring which means the grass will manage quite well this winter, and be ready to green up quite nicely next spring when temperatures warm.			Good numbers, but only bacterial-feeders. Diversity is too low to fully protect roots
Desired Range	Field Capacity	1.0 - 5.0	75 - 100	1.0 - 5.0	50 - 75	(A)	5,000+	5,000+	50 - 100	10 - 20

(A) Hyphal diameter of 2.0 indicates mostly actinomycete 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, soil moisture, soil type and organic matter level must be considered in determining optimal foodweb structure. If sample information, such as pesticide use, fertilizer use, tillage, irrigation, etc., are not included on the submission form, we assume local conditions based on client's address.

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

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ants

Percent
Mycorrhizal
Colonization
of Root

35

OK - given
total fungal
results, VAM
were likely
negatively
affected
and just now
recovering

40%-
80%

Organism Ratios

Sample #	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/ac)	Root-Feeding Nematode Presence	<u>Leaf Organism Assay</u>	
							Percent Leaf Surface Covered by:	
							Bacteria	Fungi
81618 Nelson Blown Topsoil	0.04	0.98	0.09	0.40	350 - 400	None detected	NR	NR
	Very bacterial, because total fungi are killed previously, and just now recovering	Fungi are recovering, so almost all the fungi present are growing very rapidly	OK	Bacteria are growing better than fungi, but this is the desired situation for grass	Excellent nutrient cycling	But diversity is too low to protect roots if root-feeders "come calling" Need beneficial nematode inoculum		
Desired Range	(1)	(2)	(2)	(3)	(4)	(5)	(6)	(6)

- (1) Brassica: 0.2-0.5; Row crops, Grass:0.5-1.5; Berries, Shrubs, grape: 2-5; Deciduous Trees: 5-10; Conifer: 10-100.
- (2) Warm spring, early summer: 0.25 +; Early spring, late winter & mid-summer: 0.10 to 0.15; Fall rain: 0.15 to 0.20; Drought/Frozen: 0.05 or lower. Values greater than appropriate for season means recovery from disturbance. Value lower means disturbance killed organisms and recovery is not occurring.
- (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.
- (4) Based on release of N from protozoan and nematode consumption of bacteria and fungi. 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. For species identification of root-feeders, send samples to local parasitic nematology lab.
- (6) While this assay is still being developed, we have found 70 to 80% coverage (sum of both bacterial and fungal coverage) reduces disease significantly.

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