



# Soil Foodweb Incorporated

Center Moriches, NY

## APEX-10 Increasing Soil Biomass & Nutrient Availability

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The Soil Foodweb, through a biological assay, examined the effect that **APEX-10** had on soil microorganism reproduction and activity in soils. Fertilizer was not added during the study nor was any vegetation grown on the soil during the study.

### TRIAL STANDARDS

Prior to the study a base soil was mixed to determine baseline levels of total and active bacteria, fungi, protozoa and nematodes, along with available nitrogen retained in the soil by the existing biomass.

Three different test sites were selected, with each site consisting of three individual plots.

**Site #1** Water only

**Site #2 APEX-10** at 3 oz. per 1000 sq. ft.

**Site #3 APEX-10** at 6 oz. per 1000 sq. ft.

Three soil samples were collected from each site and were assayed for total and active microbial populations on three different Days, Day-7, Day-30, and Day-60.



### RESULTS

**Day-7:** Increases in fungal activity were detected in both low and high rate sites, with a more significant increase in the high rate site. Total fungal biomass showed very little change at the 7-day interval. Total bacterial biomass increased nicely during the same interval, and again a significant increase detected at the high rate site.

**Day-30:** Bacterial activity and fungal activity had increased in the low rate sites while both had slowed in the high rate sites, with total fungal biomass having increased in the high rate site.

**Day-60:** Concluding the trial on 60-day the active fungal biomass increased at the low rate. The total fungal biomass increased at the high rate as well as the low rate. Total bacterial biomass had significantly higher percentages with both low and high rates.

All of this was due to **APEX-10**. These increases are a result of higher population of protozoa and nematodes which feed on the bacteria and fungi that grew in the soils treated with **APEX-10**.

## SUMMARY

**APEX-10** provided resources for bacteria and fungi growth as well as bacteria and fungi activity from the start of the study which indicates that **APEX-10** is a quick colonizing resource for fungi and bacteria growth.

Increases in predatory microbes, protozoa and nematodes was significant at the end of the project, due to increases in bacterial and fungal biomass as a result of good microbial growing conditions attributed to **APEX-10**.

This increase of predatory microbes led to a very nice increase in nutrient cycling and is also demonstrated by the available nitrogen retained in the soil by predators microbes.

## Results

A composite of all three plots from the 3oz. site were mixed together and a composite from all three plots from the 6oz. site were mixed together.

Both the 3oz. composite mixture and the 6oz. composite mixture were sent to Rutgers University for chemical analysis of nutrients.

Results from the Rutgers chemical analysis recorded lower extractable nutrients in the 3oz. and 6oz. composites. This coincides with the increase in soil biology, indicating that microorganisms in the soil are retaining higher levels of nutrients in the presence of **APEX-10**.

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### PERCENT INCREASE IN BIOMASS AND ACTIVITY AFTER 60-DAYS

Category	3oz. Per 1,000	6oz. Per 1,000
Active Bacteria	39%	6%
Total Bacteria	46%	67%
Active Fungi	32%	32%
Total Fungi	55%	78%
Flagellates	395%	504%
Amoeba	2,480%	3,091%
Ciliates	350%	650%
Beneficial Nematodes	2%	15%
Root Feeding Nematodes	0%	0%
Available Nitrogen In Lbs. Per Quarter	400%	667%

