Soil Technologies Corp.
Research and Development Department

Research Report

Title: Analysis of Excite Trial Data

Location: Fairfield, Iowa USA

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Abstract:
Shilajit is a blackish-brown resin that forms as an exudate of high-altitude mountain rock, especially from the Himalayan and Andean Mountain ranges, as a result of plant decomposition by certain microorganisms. For nearly 3,000 years, this mineral resin has been used within the Ayurvedic medicine system to nourish, strengthen, and detoxify the human physiology. These healing qualities can be attributed to the high levels of beneficial minerals, including silica, iron, calcium, copper, lithium, magnesium, manganese, phosphorous, sodium, and zinc that are found within shilajit. In addition, shilajit also contains fulvic acid, humic acid, and antioxidants.

Because of the long history of shilajit having a healing and stimulating effect on human physiology, Soil Technologies wanted to investigate if the same effects could be seen within plant and soil systems. Trials on Excite[1], the shilajit-based biostimulant product developed by Soil Technologies, took place in Fairfield, Iowa between 2019 and 2021.

The purpose of the first trial was to evaluate the effect of Excite on plant growth and fruit yield in field grown eggplant plants. Two additional pot study trials took place in 2020 and 2021 that evaluated the effect of Excite on radish growth and yield.

Methods:

Trial #1: In the summer of 2019, Excite was tested on eggplant and basil plants as a foliar spray. Eggplant and basil were grown in field plots and Excite was applied to the plants at 10mg/L and 20mg/L, four times, one week apart. After the application of treatments, the eggplants and basil plants were evaluated for fruit yield, change in plant height, and number of leaves.

[1]Excite is a biostimulant product developed and manufactured by Soil Technologies Corp. in Fairfield, Iowa

Trial #2: In the summer of 2020, Excite was applied to radish plants at 5mg/L and 10mg/L, four times at one week intervals alongside a control group.

Trial #3: In the Spring of 2021, following the same protocol as the previous year, Excite was tested on radishes for a second time.

Results:

Results from all three trials indicate that Excite at 10mg/L provided a biostimulant effect on plants compared to the control group. When applied to eggplants, Excite demonstrated an ability to increase fruit yield. Eggplants that were treated with Excite produced a total yield of 463.6 grams, compared to the control group that only produced 108.3 grams. In 2020, radishes that were treated with Excite saw a higher fresh plant weight of 85 grams compared to the control group that weighed in at 36 grams. In 2021, radishes treated with Excite yielded 8 grams in average dry weight, compared to the control group of 3 grams per plant. The results for all trials can be found below.

Table 1. 2019 Eggplant Trial Results

Change in Plant Height (cm)		**Eggplant Fruit Yield (g)**		**Change in Number of Leaves**	
Excite (10mg/L)	Control	Excite (10mg/L)	Control	Excite (10mg/L)	Control
8	6.3	463.6	108.3	3	1

Table 2. Basil Trial Results

Fresh Plant Weight (g)		
Excite (10mg/L)	Excite (20mg/L)	Control
28	27.2	24.9

Table 3. 2020 Radish Trial Results

Fresh Plant Weight (g)			**Dry Plant Weight (g)**		
Excite (10mg/L)	Excite (5mg/L)	Control	Excite (10mg/L)	Excite (5mg/L)	Control
85	71	36	8	7	3

Table 4. 2021 Radish Trial Results

Average Fresh Weight per Plant (g)			**Average Dry Weight per Plant (g)**		
Excite (10mg/L)	Excite (5mg/L)	Control	Excite (10mg/L)	Excite (5mg/L)	Control
10	9.53	8.93	8	7	3

Conclusions:

Data collected from these trials suggest that the foliar application of Excite can positively influence plant height and yield for radish, eggplant, and basil crops. Eggplants that were treated with Excite in 2019 had a significantly higher yield than the control group. Results from the trial testing Excite on basil plants also demonstrated an increase in yield when compared to the control. Additionally, trials evaluating Excite on radish plants demonstrated that treated plants had higher fresh and dry plant weights compared to the control group.