

Nature Safe[®] research

University research data

R-14

Effect of Nature Safe and synthetic fertilizer application on bacterial and fungal populations

Test conducted by:

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Introduction and procedures

Organic fertilizers differ in their mechanism in many ways from inorganic products. The release of nutrients needed by the plants only occurs when the product is degraded by microorganisms. The microorganisms immobilize many of the nutrients and release them at a later stage when these organisms die. Therefore, it is important to maintain a high level of microbial activity. The purpose of this research was to evaluate microbial activity from soils fertilized with Nature Safe versus soil fertilized with an inorganic source.

Nature Safe 5-6-6 was applied at 1% and 0.1% on a soil dry weight basis. Soil was mixed with fertilizer and placed in 2 liter pails with lids. Each treatment had three replications and contained 600 grams of soil. Soil extracted for each treatment were taken at periodic intervals. Soil populations of bacteria and fungi were determined by plating soil dilutions onto selective and nonselective media.

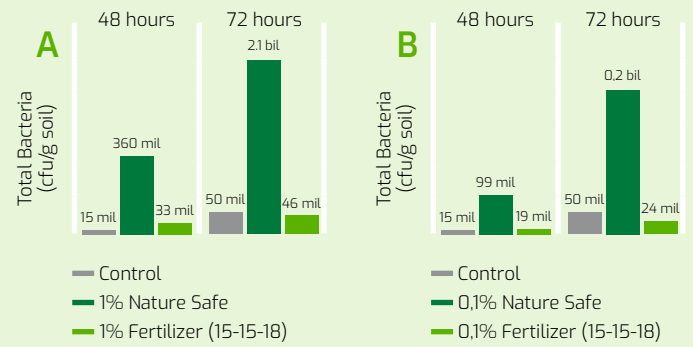
Test results

Application of Nature Safe resulted in significant increases in populations of soil bacteria and fungi. No significant changes were seen with the inorganic fertilizer. This data clearly indicates that carbon energy from Nature Safe is driving the increase in populations of microorganisms.

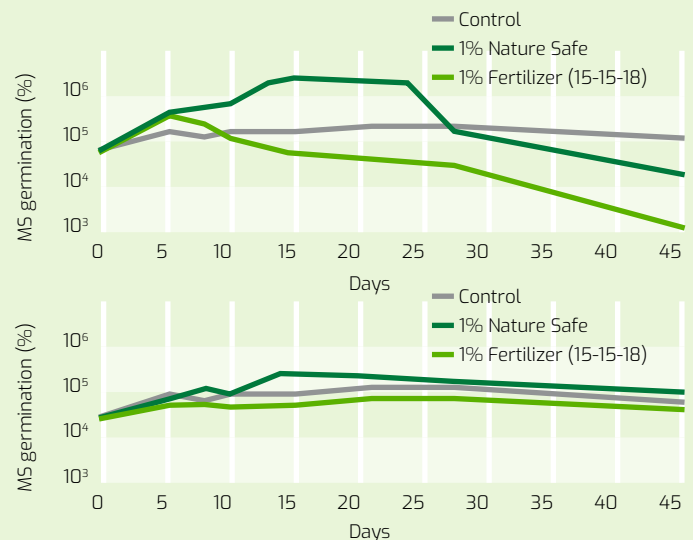
Conclusion

Use of Nature Safe increases the population of microorganisms when incorporated in the soil, while the application of synthetic fertilizer had no effect.

EFFECT OF NATURE SAFE ON BACTERIAL AND FUNGAL POPULATIONS



Effect of Nature Safe 5-6-6 and synthetic fertilizer application at 1% (A) and 0.1% (B) on total bacterial populations of soil from a potato field near Alliston, ON.



Effect of Nature Safe 5-6-6 and synthetic fertilizer on total fungal populations of soil from a potato field near Alliston, ON.