Should Sediment Samples Be Autoclaved Prior to Algal Assays? (S11-anderson103109-Poster)

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Abstract:

Sediment samples are routinely autoclaved prior to an algal-P bioassay, suggesting that there is no significant difference in the amount of algal available P between samples that were autoclaved and non-autoclaved. The purpose of this research was to determine whether autoclaving affects the quantity of algal available-P. Twenty-three representative soils from the Champlain Valley of Vermont were selected for this study. Greater algal growth occurred with autoclaved soils in a P-deficient system than with non-autoclaved soils ($p < 0.0001$). Six soils of the twenty-three which showed the greatest differences in algal growth from autoclaving were selected for the phosphatase enzyme assay to determine the quantity of soluble organic-P (SOP). Autoclaved soil samples had significantly higher amounts of SOP compared to non-autoclaved samples ($p < 0.0001$), suggesting that the autoclaving process releases SOP through cell lysis and breakdown of organic compounds. Algae are able to use P in many SOP compounds.

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