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Growth and Nutrient Dynamics of Buckwheat (*Fagopyrum esculentum* Moench) as Influenced by Different Applications of Green Soybean Manure and Bio-decomposer

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Abstract:

The growth and relative uptake of N, P, K, Ca and Mg of buckwheat was measured following the application of green manure from four growth stages of soybean with and without a bio-decomposer. The relative uptake rates (RURs) for all nutrient elements increased with the increasing relative growth rates (RGRs) of buckwheat. Although all RURs were linearly and positively correlated with RGRs, none of the homogeneity tests of the regression coefficients was significant. In absolute terms, all RURs were lower than RGRs with the exception of N with the bio-decomposer. There was a strong positive linear relationship between N and the coefficients of P, K, Ca and Mg during the green manure treatments both in the presence and absence of the bio-decomposer. Despite the reduced nutrient utilization efficiencies observed, the nutrient harvest indices of the crop were reasonably high. Applying soybean green manure from the first pod harvested stage together with a bio-decomposer proved to be a promising management alternative to that of application of manure from the flowering stage.

Keywords:

Green manure growth stages, Nutrient elements, Relative growth rate, Relative uptake rate

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