



Does Bundling of Inorganic Fertilizer with Compost Tea Improve Nitrogen Uptake and Grain Production in Wheat and Corn?

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Abstract

The objective of the study was to assess the potential benefits of bundling traditional N fertilizer with compost tea application for performance of wheat and corn under various N levels. Field trials were conducted in 2025 at 3 experimental locations in Virginia: Blacksburg (BB), Blackstone (BS), and Orange (OR). Nitrogen was split-applied: between preplant and top-dress as urea ammonium nitrate (UAN; 28-0-0) to achieve 50%, 75%, and 100% of recommended N. The effects of 75 and 100% N treatments were evaluated with and without compost tea - Super Compost Tea (Gardenersbud, Towanda, KS) foliar-applied at a rate of 5 gal/ac. Wheat yields ranged from 60 to 114 bu/a. No significant differences in wheat yield associated with treatments were observed at any of the locations. At BB, the highest N rate + compost tea resulted in the lowest wheat yield. At BS and OR, the medium N rate without compost tea treatment yielded the lowest. At all locations, the highest N rate without compost tea resulted in the highest wheat yields. No apparent wheat yield benefit was noted for bundling N with compost tea at any location. Corn yields ranged from 152 to 258 bu/a. Significant differences in corn yield were observed at BS, but not at BB or OR. The highest corn yields were obtained with the highest N rate + compost tea at both BS and OR. At BB, the highest corn yield was achieved with medium N rate without compost tea. No apparent corn yield benefit was noted for bundling N with compost tea at BB. Corn yields were improved numerically by bundling the highest N rate + compost tea. Analysis of multiple supplementary data is currently being carried out to deepen our understanding of treatment effects.

Keywords: compost, nitrogen, wheat, corn