

Paper Sludge Amendment on Silage Corn

Jay Daliparthi, Tara O'Brien, and Stephen J. Herbert
Department of Plant and Soil Sciences

A field experiment was initiated at the University of Massachusetts Research Farm in 1997 to study the effects of paper sludge applied to agricultural land. Silage corn was selected as the test crop. Prior research on use of paper sludge by others has shown that it may improve soil physical properties thereby improving crop yields.

The paper sludge treatments were applied 20 days before planting, 10 days before planting, and on the day of planting. Treatments included no paper waste, 10 t/ac of paper waste, 20 t/ac of paper waste, 10 t/ac of paper waste plus 5 T/A of compost (manure and leaf compost), and 20 T/A of paper waste plus 10 T/A of compost. Treatments were applied in 3 randomized complete blocks. Treatments with compost and paper waste were applied separately and all plots were rota-tilled into the top 8" to 10" inches of soil. Nitrogen (ammonium nitrate) was broadcast by hand at rates of 160 lbs/A or 240 lbs/A. Nitrogen was added in split applications on the day of planting, 12 June 1997 and on 11 July 1997. Three rows of field corn were planted per plot. Pioneer 35N05 corn seed was used. Soils were sampled at regular intervals for nutrient and heavy metal analysis.

Initial observations indicate that application of paper sludge at 10 t/ac or 20 t/ac did not effect corn germination, and crop establishment was good in all the treatments. Additional observations will be made at crop maturity. Soils will be analyzed for residual effect from paper waste application.