USDA-CSREES 2007 National Water Quality Conference

Using Compost to Enhance Soil Water Retention

This presentation combines compost application studies and an irrigation cost program to examine the potential for reducing irrigation costs on coarse soils. According to studies conducted in Wisconsin, amending soil with compost has shown potential to reduce the need for irrigation in sandy loam soils. The Wisconsin study estimates that applying 20 dry tons per acre of high quality compost can reduce irrigation cycles by 3 to 7 during a growing season. An irrigation cost program developed at Kansas State University shows that at existing energy prices, it is estimated that energy savings would be $400 to $4200 per year on a 130 acre system, depending on the energy source used. In addition, results from a 4 year replicated study in Central Illinois will be discussed. Two rates of compost were applied on a sandy loam soil. Crops rotated between popcorn and soybeans, grown under irrigation. Soil moisture and yields were compared on plots containing 0, 10, and 20 tons/acre of compost that was applied yearly from 2002 through 2005. Results from this study suggest that compost application rates, the material being composted, and the crop grown may affect compost application effectiveness.

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