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Initial evaluation of a garbage reduction technology byproduct on soil

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A new garbage processing technology has been developed that sterilizes and separates inorganic and organic components of municipal solid waste. The organic byproduct of this process, named Fluff®, has the potential to be utilized as a soil amendment. A study was initiated to evaluate Fluff as a soil amendment for establishing perennial prairie grasses on disturbed Army training lands. The Fluff was incorporated into a silt loam soil at Fort Campbell Military Reservation at rates of 0, 5, 9, 18, and 36 Mg/ha to assess the effects on vegetation community, plant tissue composition, and soil properties for two growing seasons. At Fort Campbell, the highest Fluff rate had significantly higher native grass basal cover and percent composition than the controls. Plant P accumulation also increased significantly with increasing Fluff application. Soils were largely unaffected but soil P and Pb increased in the top 10 cm of the highest application rates. Results indicated that Fluff rates used in the Fort Campbell study did not result in adverse or detectable changes in environmental variables measured and that even greater benefits would most likely be achieved at higher rates. Further studies have been initiated at Fort Benning Military Reservation, with Fluff being incorporated into a sandy loam soil at rates of 0, 16, 32, 64, and 128 Mg/ha. Because no adverse environmental effects were detected and Fluff improved perennial grass establishment and nutrition at the 36 Mg/ha rate, land application of Fluff could be considered a viable and beneficial alternative to current waste management practices.