

savings of \$20-40 per acre for the nitrogen and phosphorus that the sludge supplies, usually they are very low in potash. The soil can benefit from the addition of organic matter, most of the heavy metals are bound to soil particles and are not absorbed by the plant as long as pH remains above 6.5. Most pathogenic organisms that could be present in sludge will not survive when incorporated into the soil.

SILAGE CORN YIELD FROM SLUDGE FERTILIZATION

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In 1979 an experiment designed to examine the potential for land application of municipal sludge was conducted on land at the Haverhill Water Pollution Abatement Facility. Corn for silage was chosen as the test crop since the area grown of this crop shows the greatest possibility for use of sludge in New England commercial agriculture. Data collected has included parameters of environmental concern; for example, the buildup of heavy metals in the soil, the uptake of these by the corn crop, and groundwater movement of applied elements. These experiments have continued to be expanded in 1980. The preliminary yield results for 1979 show similar silage corn yields for sludge and commercial fertilizer when sludge was applied at twice the rate of equivalent nitrogen as the commercial fertilizer (Table 1). When applied at the same equivalent of nitrogen as the commercial fertilizer treatment, the sludge had a lower yield. Some carryover of nitrogen in later years would be expected from the first year's application.

Table 1. Silage corn yield (ton per acre) from Haverhill sludge and commercial fertilizer.

Nitrogen source and rate	Silage (70% moist)
Fertilizer nitrogen (150 lb per acre)	24.5
Sludge (150 lb N equivalent)	19.7
Sludge (300 lb N equivalent)	22.8
Least significant difference	3.8