ACTIVATED SLUDGE: ITS PRODUCTION, COMPOSITION, AND VALUE AS A FERTILIZER

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Agriculturists and conservationists have repeatedly called attention to the enormous losses of nitrogen, phosphoric acid, and potash occasioned by present methods of sewage disposal. Bruttini (7) estimates that the annual excrement of the world’s population contains approximately nine million tons of nitrogen and close to a million tons each of phosphoric acid and potash, most of which is lost to agriculture. On this basis the annual loss in the United States in human excrement approximates half a million tons of nitrogen, valued at $180,000,000, and more than one hundred thousand tons each of phosphoric acid, valued at $12,000,000, and potash, valued at $10,000,000.

Unfortunately, most of the nitrogen in sewage is in soluble form, and the large amounts of water used to carry the sewage make recovery both difficult and expensive. Attempts to irrigate agricultural lands with sewage have not been generally successful, and trials with sludges produced by the Imhoff, septic tank, and precipitation processes have never yielded results sufficiently promising to warrant the large expenditures necessary to produce a dry fertilizer. The use of these sludges has been limited and confined to areas in the immediate vicinity of the disposal plant. With the discovery and