FARM TRIALS OF ARTIFICIAL MANURE

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In consequence of the universally recognized value of barnyard manure and its decreased supply through motorization of farming, attention has turned toward its artificial production. The various farm wastes offer plenty of materials. The burning of wheat straw after the header or thresher, the rotting straw pile occupying valuable ground while its bulk is reduced to a few loads of almost worthless manure, or cornstalks that may need special mechanical handling in consequence of a threatening borer, all invite some artificial manure making process. This is particularly the case in regions where barnyard manure production is least extensive.

Interest has developed in artificial manure making as a result of the work of Hutchison and Richards (2) of England, who have given the essential requirements for this process. Their method, however, is too laborious and requires too much attention to fit itself readily into the American extensive farming scheme, notwithstanding its feasibility for the market gardener or intensive farmer for whom manure has a much higher value. In view of these conditions and after study and trials of the process, some work was begun in the summer of 1926 to adopt, if possible, the artificial manure making process to general farming conditions in the Middle West.

PLAN OF PROJECT

The process when applied to straw demands in the main (a) moisture, (b) a source of soluble nitrogen, and (c) neutral or alkaline conditions. With these requisites in mind, plans were made (a) to design a chemical reagent fulfilling the last two requirements, but of such simplicity that its constituents might be obtained readily and combined on the farm; (b) to mix this material with the straw by applying it through the thresher; and (c) to test the possibility of depending on the rainfall to supply and maintain the needed moisture. The production and use of artificial manure in a farm trial were undertaken on a large farm in Lawrence County, Missouri.

REAGENT USED

Since straw contains a large percentage of cellulose which serves as energy material for certain micro-organisms but is deficient in

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2Associate Professor and Graduate Student, respectively.
3Reference by number is to "Literature Cited," p. 132.