PRODUCTION OF ARTIFICIAL FARMYARD MANURE BY FERMENTING STRAW

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The production of artificial farmyard manure by decomposition of straw has attracted much attention in recent years. In certain sections it has been a common practice to burn the straw either as stubble or in the stack. To those interested in soil conservation, this practice of destroying organic matter by fire seems appalling, especially since those sections practicing such destructive methods are usually the ones that need the organic matter for its water-holding capacity and its value in maintaining the physical condition of the soil.

The harmful practice of burning straw cannot be stopped without showing an economical way whereby the straw can be utilized to advantage. The farmer and the market gardener in many sections have known for many years that plowing under large quantities of straw means losses through decreased yields during the following years. Investigators in several states have studied the detrimental effects of plowing under straw to ascertain the reasons for the decreased yields and possible means of overcoming it.

A discussion of the literature pertaining to this subject was presented recently by Collison and Conn who made studies on the nature of the toxic properties of straw and concluded that, "Two separate harmful factors are associated with straw and other plant residues. First, a toxic chemical agent which acts upon the plant immediately after germination, although not having a very pronounced effect in the presence of much colloidal matter, as in clay soils. Second, a biological factor due to the stimulation of microorganisms which compete with plants for their nitrogen. This second factor has been recognized by most of the previous writers on the subject."

Historically, attention to the possibility of overcoming these toxic effects by producing artificial farmyard manure was stimulated...