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SULFUR ON ALKALI SOILS

European and American investigators have shown convincingly that elementary sulfur may be readily oxidized in the soil by microorganisms. Pure cultures of these microorganisms have not yet been isolated. Preliminary work done in the laboratories of the New Jersey Agricultural Experiment Station shows that the oxidation of elementary sulfur may be accomplished by certain types of bacteria, and possibly also by molds. There is reason to believe that inoculation with pure cultures of sulfifying bacteria may find a place in progressive methods of soil treatment.

Meanwhile, it is quite certain that elementary sulfur, used in small or large amounts may be transformed by microorganisms into sulfuric acid. It is not proposed to discuss at this time the value of sulfuric acid thus formed for modifying the soil reaction. It need only be said in passing that the application of elementary sulfur has been found to be of great service in checking the development of scab on potato tubers. In a recent contribution to SOIL SCIENCE from the New Jersey Station, it was also shown that sulfur oxidation in soil may be made to play an important part in the utilization of insoluble phosphates by crops. Work now in progress has already disclosed a number of problems of great scientific and practical significance.

The investigations of C. B. Lipman, of the University of California, on the value of sulfuric acid in the reclamation of certain alkali soils would justify the suggestion that elementary sulfur could be used to great advantage instead of sulfuric acid as proposed. As is well known, there are vast areas of land in which carbonates and bicarbonates of sodium are present in sufficient amount to interfere partially or completely with profitable crop production. It is hoped, therefore, that experiments will be undertaken with sulfur as a means of reclaiming land which now contains an excess of these carbonates and bicarbonates.

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