SCAB AND RHIZOCTONIA

The potato grower cannot afford to produce potatoes severely infected with scab or rhizoctonia. This is especially true in times such as these since, where these diseases are severe, it is questionable if the returns will warrant the investment necessary to plant the crop.

What can be done where scab or rhizoctonia is serious? This must be determined by local conditions. In New Jersey it has been demonstrated that, with but few exceptions, where the acidity of the soil is adjusted to approximately pH 5.2, scab is seldom encountered. The increase in soil acidity is brought about either by the use of sulfur or sulfate of ammonia. While the use of these materials has resulted in a reduction of scab in New Jersey and certain other states it must be pointed out that there are sections where this method has not given equally good results.

In many sections serious losses sometimes follow the planting of seed potatoes infected with rhizoctonia. In some cases these losses result from injury to the sprouts, causing a reduction in yield. In other cases the quality of the crop is greatly impaired. Investigations in New Jersey have demonstrated that the former type of injury is likely to be greatest in seasons when the soil moisture content is low, from the time the seed pieces germinate until the sprouts emerge from the soil. It has been found also that stem lesions increase in severity as the depth of planting increases. Where deep planting is necessary, the practice of shallow covering has resulted in a decrease in the disease.

In the case of both seed-borne scab and rhizoctonia there is ample evidence to show that seed disinfection is well worth while.

The potato grower cannot afford to neglect control measures for these two diseases. The discussion of scab and rhizoctonia in this issue of the Journal should assist the grower in their control.
CONCENTRATED FERTILIZERS FOR POTATOES ON THREE IMPORTANT SOIL TYPES

B. E. BROWN

Bureau of Chemistry and Soils, United States Department of Agriculture

INTRODUCTION

Concentrated fertilizers were practically unknown to many fertilizer users 10 years ago. As a matter of fact, their usage did not become marked until within comparatively recent years. During the past few years, as the result of experimental trials and practical experience with concentrated fertilizers, ranging from 40 to 60, and more, units of plant food to the ton, potato growers have come to appreciate their advantages in effecting certain economies in freight, storage, hauling, and general convenience. The chief concern of the grower naturally has been—Will these concentrated fertilizers produce as many bushels of salable potatoes to the acre as the ordinary-strength fertilizers, when equivalent amounts of plant food are used?

It is believed that the answer to this inquiry will be influenced largely by soil type, seasonal conditions, kind of salts used in making up the fertilizer formula, degree of purity of such salts, and what method of fertilizer placement is followed.

REFERENCE TO PREVIOUS REPORTS

A report on concentrated fertilizer work in 5 states over a period of 4 years was presented at the 15th Annual Meeting of the Potato Association and later published in the Proceedings. Three points stressed then are equally important now. They were as follows: (1) Concentrated fertilizers should possess a proper physical condition to insure satisfactory drilling with the potato growers' fertilizer distributing machine. The development of suitable machines for distributing concentrated fertilizers is highly desirable. This part of the general problem relating to the use of concentrated fertilizers will have to be given serious consideration; (2) Concentrated fertilizers must be so applied that direct contact with the seed-piece is avoided. This is particularly important on light, sandy soils; (3) While savings in freight and other

1 In cooperation with the Maine and Pennsylvania Agricultural Experiment Stations and the Virginia Truck Experiment Station.
2 Division of Soil Fertility Investigations.