THE PRESENCE OF RHIZOBIUM ON AGRICULTURAL SEED

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Probably all agricultural seeds have on them some form of microscopic life. Sometimes it is a harmless organism, while at other times it may be parasitic in nature. Such an organism as Pseudomonas campestris may be found on cabbage seed, while the fungus that causes anthracnose may be found on beans. Many other instances could be cited. Some attempts have been made to isolate the legume organism from seed. Prucha studied the bacterial flora of several samples of alfalfa seed. He found a great many organisms on the seed, fresh seed having more than older ones, but failed to find an organism that could be recognized as the legume organism. The present paper is a report of work done to determine the presence or absence of this organism on various agricultural seeds.

TECHNIC

After numerous attempts to isolate the legume organism from agricultural seed by the "plate method," it was abandoned and another method used. This consisted essentially of washing seeds with sterile water and then using the washings to inoculate sterile soil. The legume organism, if present, will increase in numbers in its new surroundings. The soil was then sown with seed of the desired host plant, and after a suitable growth period the plants were examined for nodules. The presence or absence of nodules on such plants was the criterion of the presence or absence of the organism on the seed. The exact procedure follows.

OBTAINING SEED SAMPLES FOR ANALYSIS

Numerous samples of various agricultural seed were collected. These were kept in paper bags in the laboratory until examined. Some of the seeds were not over 90 days old while others were several years old, although it is not always certain that the exact age of the seed as obtained was correct.

OBTAINING BACTERIA FROM SEED BY WASHING

It is conceivable that only a very few seeds in a very large sample may have on them the legume organism. It was considered impractical, therefore, to plant enough seed to determine the presence of the