

The Second Israel Congress of Plant Pathology 1969 - Summaries of Lectures

ASCOCHYTA RABIEI IN CHICK-PEA SEEDS

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Ascochyta rabiei very often causes considerable harm to chick-pea crops in Israel and has become the limiting factor in obtaining high yields. There are a number of possible sources of inoculum in the field, but the principal causes of the disease seems to be the seed-borne infection.

Prior to 1968, the seed material in Israel had not been examined as to its infestation by this fungus and it is not known to what degree the seed serves as a source for spreading the disease in the field. We have now started to study these problems. In the first stage, the effect of seed infestation on seed quality, emergence percentage and the rate of growth of the young plants, was examined. All experiments were carried out with seeds collected from plants inoculated during their initial growth stages with Ascochyta.

The incidence of seed infestation was correlated to pod infestation. In pods showing Ascochyta lesions, the incidence of seed infestation was 50-80%, whereas in pods not evincing symptoms, but borne on the same infested plant, all the seeds were healthy. Seed infestation affects the size and germinating ability of the seeds. Very often the infected seeds had lesions and in these seeds the mycelium was located beneath the seed coat; in a certain percentage of seed it penetrated even deeper, to the cotyledon.

In pot experiments it was found that some of the infected seed does not emerge at all and, as a result, enriches the soil with fungal inoculum. Other seeds give rise to infected seedlings which eventually die, but at the same time they also serve as a source of inoculum for healthy plants. From some of the infected seeds normal plants develop, but their growth rate is retarded and their chances of standing up to competition in the field are small.