OVERWINTERING OF HELMINTHOSPORIUM TURCICUM PASS.

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*Helminthosporium turcicum* Pass., the causal agent of the northern leaf blight of corn, was found to overwinter on *Sorghum halepense* L. and on corn debris. Sporulating lesions were observed on sorghum plants in the winter (February). Spores collected from these lesions were pathogenic to sweet corn cv. 'Jubilee'. Infected sporulating leaves of corn were stored for one year at 20°C (40-60% R.H.) or at 5°C (60% R.H.) in the dark. Twenty per cent and 7% of the spores were found to form chlamydospores during storage at 20°C and 5°C, respectively. Spores having chlamydospores were pathogenic to corn plants. The spores which formed no chlamydospores exhibited 0 and 60% germination when stored at 20°C and 5°C, respectively. Other lesions, stored as above, were brushed to remove old spores and allowed to sporulate at 20°C. The newly formed spores were highly pathogenic to corn plants. It is concluded that *H. turcicum* can overwinter either on *S. halepense* plants or on infected corn debris.

DETECTION OF CUCUMBER MOSAIC VIRUS IN VIRULIFEROUS APHIDS BY ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA)

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Enzyme-linked immunosorbent assay (ELISA) enabled the detection of an aphid-transmissible strain of cucumber mosaic virus (CMV) in single viruliferous aphids. No reaction was obtained with aphids probing or feeding on a non-transmissible strain, either with CMV or with CMV-coat protein antiserum. ELISA can be of use in epidemiological studies of aphid-borne viruses.
RACE T OF *HELMINTHOSPORIUM MAYDIS* IN LOCAL CORN SEEDS

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In 1976 a fungus isolated in Israel from seeds of a hybrid corn cultivated locally, cv. Newe Ya'ar 170, was identified as *Helminthosporium maydis* Nisik. and Mily. (*Cochliobolus heterostrophus* Drechs.). Inoculations of young seedlings of this cultivar with the isolate from the seeds caused blight in 70% of the plants. In a survey of local corn seed lots of different varieties, it was found that the fungus was carried only by seeds of the hybrid cultivated in Israel, *viz.* cv. Newe Ya'ar 170. One of the parental lines of this cultivar is an inbred line from abroad, having Texas-type cytoplasm for male sterility.

Experiments were conducted for race identification of *H. maydis* isolated from the local seed. (We thank Dr. Marina Charkovniku, of the Research Institute for Plant Protection, Bucharest, Rumania, for her participation in some of the experiments.) The differential reaction of isogenic corn inbred lines (differing in their cytoplasm – normal and T type) to the fungus isolated from the seeds, was tested. Differences in the reaction of these two types of cytoplasm found expression in the size and type of leaf lesions, the suppression of sporulation, and the inhibition of root elongation by the pathotoxin produced by the fungus. In some of the experiments the behavior of the local isolate was compared with that of Race 0 of *H. maydis* obtained from abroad. (The isolate was received through the courtesy of Prof. A.J. Ullstrup, Dept. of Botany and Plant Pathology, Purdue University, Lafayette, Indiana.) The isolate of the local seeds was found to belong to Race T of *H. maydis*. This was the first identification of *H. maydis* Race T in the country, and steps were taken to limit its spread.

The fungus mycelium was found to penetrate into all parts of the local hybrid seed. A high correlation was found between lack of germination of the seed and the presence of the fungus mycelium in the tissues of the seed embryo. The fungus was found to be transmitted from the seed to the young seedling.

DANGEROUS PATHOGENS IDENTIFIED IN IMPORTED SEEDS DURING THE YEARS 1965 – 1977

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During the years 1965-1977, over 600 imported seed samples were tested at the Official Seed Testing Laboratory of the ARO. Five dangerous pathogens were identified in about 14% of the lots tested: the fungus *Glloeotinia temulenta* Prill. and Delacr. in ryegrass; *Glomerella gossypii* Edg. and the bacterium *Xanthomonas malvacearum* (E.F. Smith) Dowson in cotton seeds; the fungus *Diplodia maydis* (Beru.) Sacc. in corn; and the fungus *Colletotrichum lindemuthianum* (Sacc. and Magn.) Bri. and Cav. in beans. The Quarantine Section of the Plant Protection Division of the Ministry of Agriculture prohibited the use of the infected seed lots, and introduction of dangerous pathogens into the country was thus prevented or at least postponed.

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