

values. In spite of the low pH of these soils, the molybdenum deficiency was easily diagnosed by planting maize seed soaked for one hour in a 0.5% solution of sodium molybdate between the yellow plants. Plants originating from the treated seed were green and grew like normal plants.

In addition to the severe molybdenum deficiency symptoms, very distinct phosphorus deficiency symptoms were also observed on the same plants in the plots with a soil pH of 4.0.

It appears, therefore, that it is of paramount importance to check soil pH regularly and to guard against abnormal acidification.

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3. Root disease of maize -- a request.

A serious root rot of maize, causing the rotting of all major roots as well as the newly formed thin roots, is found to occur in varying degrees through the whole Transvaal region of South Africa.

Organisms commonly associated with it are: three different *Fusaria*, two *Helminthosporia*, a *Trichoderma* and a nematode, *Pratylenchus zeae*. The production of a phytotoxic substance by one or more of the fungi, is another possibility.

Any information in this connection will be highly appreciated.

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4. Position effect as a factor in pollen tube competition in *Zea mays* L.?

Studies of pollen tube competition reported in previous years (M.N.L. 1958-1962) have indicated that many genes are probably involved in pollen tube growth. Since the male gametophyte is apparently very sensitive to gene action it is possible that position effect, resulting from reciprocal translocation, may be revealed in its effect on pollen tube competition. In the table below are tabulated the progenies of crosses between normal seed parents and reciprocal translocation heterozygotes as pollen parents, as recorded in column 1. Optimum growing conditions were available so that errors for classification of semi-sterility were negligible. The pollen tubes containing the T1-3i reciprocal translocation were significantly more efficient in competition than normal tubes as is apparent in the difference in the number of normal and sterile plants recorded in the progeny. This was also the case for T1-6c. However, in the case of T1-8i the normal class