

**SYMPOSIUM ON LATEST DEVELOPMENTS IN THE CONTROL  
OF DISEASE-PEST COMPLEXES**

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**Introductory Remarks**

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Dramatic advancements in knowledge of soil-related disease-pest complexes have occurred in the last decade. Witness the break-through in the transmission of many soil borne viruses which has resulted in the demonstration that one group of viruses that does not persist in air-dried soil is transmitted by ectoparasitic nematodes; and another group that does persist in air dried soil is transmitted by the fungus *Olpidium*.

Equally important have been the results of research on the interaction of soil fungi and plant parasitic nematodes. The root-knot nematodes, *Meloidogyne* spp., have been shown to be synergistic to the development of *Fusarium* wilt in wilt-resistant cotton and other hosts. Tobacco resistant to *Phytophthora parasitica*, the black shank organism, is rendered susceptible when roots are invaded by root-knot nematodes. Less clearly defined, but also important, is the enhanced development of several root-rotting fungi in roots attacked by nematodes and soil insects. Research on the influence of crop rotations, crop residues, and nitrogen nutrition has given greater insight into the effects that these factors can have on either disease enhancement or suppression.

If the results of the last decade have taught us anything, it is that although specialists in the various disciplines of plant pathology and nematology have contributed significantly to progress in this field, a broader view must be taken when it comes to con-

trolling these disease complexes under field conditions. Broad spectrum, expensive biocides, like methyl bromide-chloropicrin mixtures, may control insects, nematodes, pathogenic fungi, and weeds in soils for strawberry, nursery, or ornamentals, but they are not likely to be used to control disease complexes of a large number of crops of lesser value.

We must then broaden our view and pool our knowledge in a team research approach, so that soil-borne disease-pest complexes of crop plants may be controlled in the most effective and economical manner. This will require consideration of the multiplicity of effects that pesticide applications to an agricultural soil can have on growth and health of our crop plants. It will also necessitate greater awareness on the part of the research team on the ecological and nutritional changes that can be induced in soil by the introduction of natural crop residues and pesticides as a whole.

In this symposium, jointly sponsored by the Nematology Committee of The American Phytopathological Society and the Society of Nematologists, we have a series of papers which review research on various aspects of soil related diseases. They effectively illustrate that many different avenues are available for controlling disease complexes of crop plants, and that considerable progress has been made in recent years.