



# HOLE NOTES

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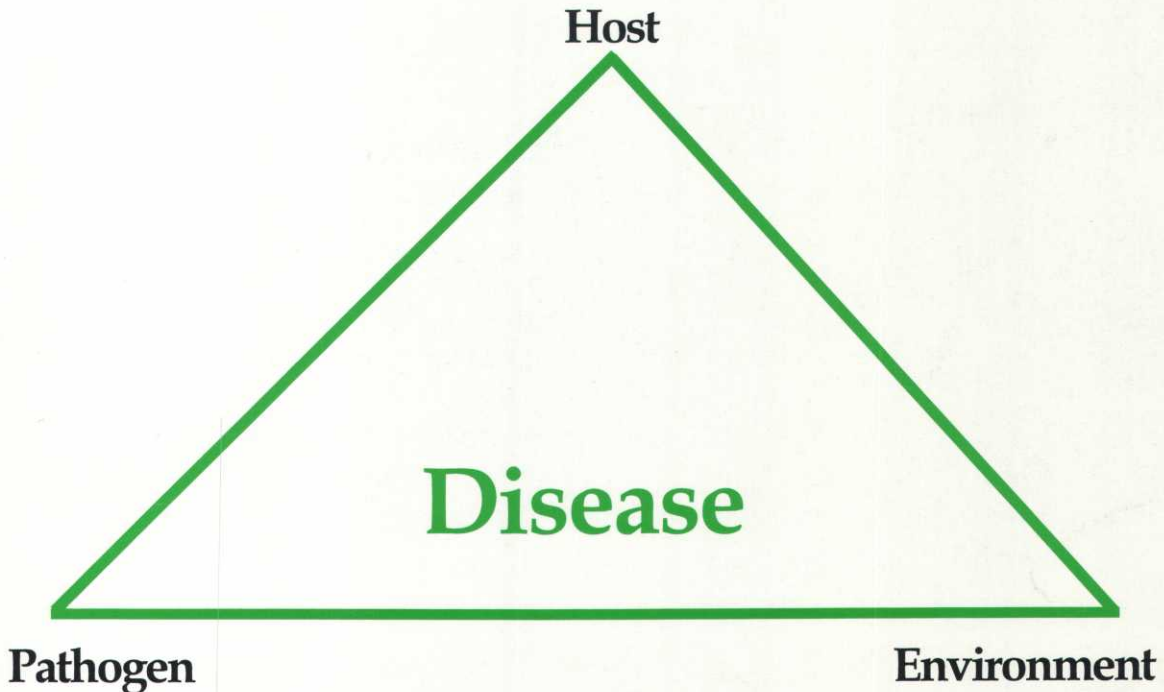
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## Summer Diseases

*Clearing Up the Mysteries*



The figure illustrates one of the paradigms in plant pathology; that is, the existence of a disease caused by a biotic agent absolutely requires the interaction of a susceptible host, a virulent pathogen, and an environment favorable for disease development. Conversely, plant disease is prevented upon elimination of any one of these three causal components.

The equilateral plant disease triangle after Stevens. The three necessary causal factors of disease are positioned at the vertices.

This triangular relationship is unique to phytopathology in comparison to veterinary and medical sciences because terrestrial plants possess little thermal storage capacity and their immobility precludes escape from an inhospitable environment. The sophisticated immune system found in mammals is absent in plants, and this places an emphasis on the host's genetic constitution. Finally, the predominance in phytopathology of fungi, which are also highly dependent on environment, may have contributed to the development of this paradigm. Leonard J. Francl, Department of Plant Pathology, North Dakota State University.

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