**Indispensable: Helping Growers to Manage the Onslaught of Invasive and Intractable Fungal Diseases of Cotton and Watermelon**

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**Abstract**

As an extension plant pathologist, I have had a multitude of opportunities to make a positive (economic) impact on farmers throughout Texas by helping them to manage the disease problems that threaten their crop productivity. In this seminar, I will present stories that highlight my activities. Although the traditional role of the extension specialist is to bring the new research from the university to the farmer, sometimes effectively helping farmers does not require introducing them to cutting-edge research results. My watermelon examples will illustrate this; specifically, management of downy mildew, caused by *Pseudoperonospora cubensis*, and anthracnose, caused by *Colletotrichum orbiculare*. I will also focus on my research in cooperation with farmers throughout Texas to manage the intractable disease, cotton root rot, caused by *Phymatotrichopsis omnivora*. I will also talk about one of the latest invasive diseases of cotton in Texas, Fusarium wilt, caused by *Fusarium oxysporum* f. sp. *vasinfectum* Race 4.

**Bio**

Thomas Isakeit is a professor and extension plant pathologist located at Texas A&M University in College Station. His responsibility is conducting research and extension programs managing agronomic crop diseases, primarily on corn, cotton and sorghum. He also has worked throughout Texas on watermelon diseases. With cotton, he identified and developed application methods for the fungicide, Topguard (flutriafol), as an economical management approach for Phymatotrichopsis root rot of cotton. This finding is saving Texas cotton farmers tens of millions of dollars annually. With corn, he conducts aflatoxin and fumonisin research in conjunction with Texas A&M corn breeders and also field studies evaluating commercially-available and experimental atoxigenic strains of *Aspergillus flavus* for managing aflatoxin. The experimental atoxigenic strains offer the potential to permanently displace the native, aflatoxin-producing strains in corn fields. He has been with Texas A&M University since 1993, initially at the Weslaco research center, then later at the main campus. He obtained his Ph.D. and M.Sc. degrees in plant pathology at Michigan State University. He also obtained post-doctoral experience at the University of California – Berkeley and the University of Arizona.