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ABSTRACTS - Oral Presentations

Association of *Ceratobasidium theobromae* and *Lasiodiplodia* species with symptom variation in vascular streak disease of cacao

Johnny F. Balidion, Marc A. Cubeta

Department of Entomology and Plant Pathology, North Carolina State University

Vascular streak dieback (VSD) is an endemic disease of cacao in Southeast Asia reported to be caused by *Ceratobasidium theobromae*. A survey was conducted in 2016-17 from 20 cacao-growing provinces in the Philippines to characterize VSD symptom expression. Fifty three percent of the leaves and petioles sampled (620/1170) exhibited marginal necrosis and chlorosis with epidermal cracks on the petiole or leaf midrib. Approximately 10% of the samples (115/1170) exhibited characteristic chlorotic spotting symptoms. Chlorosis with random necrotic spots and a chlorotic halo was observed in 19% of the sample, while varying mixtures of necrosis and chlorosis on the leaf represented approximately 18% of the samples collected. To validate the presence of fungi associated with the predominant symptom, a PCR-based detection assay using ITS species-specific primers was performed on 30 petiole samples exhibiting leaf symptoms and revealed 100% and 73% detection frequency for *Ceratobasidium theobromae* (Ct) and *Lasiodiplodia* spp., respectively. To examine localization of Ct and *Lasiodiplodia* spp. within a branch, we examined sections of 25 intact twigs grouped per symptom type to determine the frequency of occurrence. Approximately 22% of the segments sampled across symptom types were positive for Ct, 76.1% for *Lasiodiplodia* spp., including in asymptomatic samples, and 16.9% for both species. Morphological and sequence analysis of ITS, *tef1- α* , *tub2*, *rpb2*, and *cmdA* for 10 randomly selected fungal isolates sampled from VSD infected plants were identified as *L. theobromae* and *L. brasiliensis*. Our results suggest the possible role of *Lasiodiplodia* species in the observed variation in VSD symptoms.