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From Coconut to Cassava: The coconut lethal yellowing phytoplasma is worsening the threat to food security in Côte d'Ivoire

Yaima Arocha Rosete
Sporometrics Inc., Canada

Cassava (*Manihot sculenta Crantz*) is a staple food in Côte d'Ivoire, which produces 4,239,303 tones yearly. Cassava-based flour has been boosted by private companies but its production is now is now threatened by the Côte d'Ivoire lethal yellowing disease (CILY). Since its first report in 2013 in Grand-Lahou, CILY has destroyed over 400 ha of coconut groves in smallholder coconut farms, so cassava has been grown in yards as an alternative income source for women coconut farmers. Symptoms of leaf mosaic, curling and yellowing (Fig 1) were observed in cassava yards in two coconut-growing villages of Grand-Lahou devastated by CILY. Leaf samples were collected from symptom-bearing and symptomless cassava plants. Total DNA was extracted and subjected to PCR and sequencing with phytoplasma universal 16S rRNA primers, and group-specific primers for subgroup 16SrXXII-B 'Candidatus Phytoplasma palmicola-related strains' and for the African/Eastern cassava mosaic viruses (ACMV, EACMV). Phytoplasma DNA was amplified from six out of 12 symptom-bearing samples, five of which co-amplified for virus DNA (Table 1). Phytoplasma sequences were over 99% identical to those of the 16SrXXII-B phytoplasma. One phytoplasma-infected cassava plant was co-infected with ACMV, while the other four showed co-infection with both ACMV/EACMV. Results evidence that CMVs and CILY phytoplasma are able to co-infect the same cassava plant host difficulting disease management and control. Cassava as an alternative host for the CILY phytoplasma may play a role spreading and worsening CILY severity across the coconut palms in Grand-Lahou. Gender-responsive prompt actions are urged to adopt by farmers, stakeholders, extension agents and policymakers while waiting for a suitable local resistant coconut cultivar. Cassava yards should be replanted with resistant varieties to help women to secure family income and nutrition and to improve the livelihoods of the smallholder coconut farmers in Grand-Lahou, Côte d'Ivoire.

yarosete@sporometrics.com

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