several districts in Tanzania, including Dar es Salaam, Kilimanjaro, Mwanza, Pwani, and Rukwa. The virus was first reported in Uganda in Arua City, West Nile. Delimiting surveys conducted in October 2022 revealed widespread BBTV in the West Nile region and some other districts in Western Uganda. In many farms, virus infection led to a 90-100% production loss, a 100% to 150% increase in banana price, and a loss of jobs, income, and banana biodiversity. The drivers of BBTV spread include the lack of awareness that impeded early detection, lack of capacity for surveillance, diagnostics, eradication, and access to virus-free planting materials. This presentation will appraise the status of BBTV in East Africa and highlight steps taken to implement a response plan, including efforts to build a regional alliance to coordinate surveillance and early detection and implement actions to curb virus spread and recover banana production.

P8.5-012

EVALUATION OF THE BIOCONTROL CAPACITY OF NATIVE MICROORGANISMS AGAINST FUSARIUM OXYSPORUM F. SP. CUBENSE

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Text

Fusarium Wilt is an economically important disease of bananas caused by the fungus Fusarium oxysporum f. sp. cubense (Foc). It causes severe losses in the yield and quality of bananas and is extremely difficult to control conventionally using chemical fungicide. Biological control offers an eco-friendly alternative for sustainable plant disease management. In this context, the objective of this research is the determination of the biocontrol capacity of native microorganisms against Fusarium oxysporum f. sp. cubense. For the isolation of native rhizospheric microorganisms, samplings were carried out in the region of Perené and Satipo in the central jungle of Peru. Thirty rhizobacterial isolates were screened for antagonistic activity in dual culture, and isolate 27 showed the highest antagonistic activity (81,52% mycelial growth inhibition) against Foc. The metabolites of isolate 27 inhibited mycelial growth of Foc by 80%. Based on the morphological, physiological and phylogeny analysis with 16S rRNA sequence the isolate 27 was identified as Burkholderia sp. This is a preliminary study of the SATREPS project (Japan - Peru): "The Project on establishment of an alert system for Fusarium oxysporum f. sp. cubense the banana and plantain wilt pathogen, and biological mitigation strategy of the pathogen"

P8.5-013

A POLYPHASIC APPROACH REVEALS NOVEL GENOTYPES AND UPDATES THE GENETIC STRUCTURE OF THE BANANA FUSARIUM WILT PATHOGEN

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Text

Fusarium oxysporum f. sp. *cubense* (Foc) is a soil-borne fungus that causes Fusarium wilt, a destructive plant disease that has resulted in devastating economic losses to banana production worldwide. The fungus has a complex evolutionary history and taxonomic repute and consists of three pathogenic races and at least 24 vegetative compatibility groups (VCGs). Surveys conducted in Asia, Africa, the Sultanate of Oman and Mauritius encountered isolates of *F. oxysporum* pathogenic to banana that were not compatible to any of the known Foc VCGs. Genetic relatedness between the undescribed and known Foc VCGs were determined using a multi-gene phylogeny and diversity array technology (DArT) sequencing. The presence of putative effector genes, the *secreted in xylem* (*SIX*) genes, were also determined. Fourteen novel Foc VCGs and 17 single-member VCGs were identified. The multi-gene tree was congruent with the DArT-seq phylogeny and divided the novel VCGs into three clades. Clustering analysis of the DArT-seq data supported the separation of Foc isolates into eight distinct clusters, with the suite of *SIX* genes mostly conserved within these clusters. Results from this study indicates that Foc is more diverse than hitherto assumed.

P8.5-014

ADVANCES IN PLANT VIRUS DISEASE MANAGEMENT IN SUB-SAHARAN AFRICA – THE CASE OF BUNCH TOP DISEASE

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Text

Plant viruses have caused several devastating epidemics on annual and perennial crops in sub-Saharan Africa (SSA). All the effectively managed virus diseases in SSA relied on host-plant resistance. For viruses lacking durable host resistance, management relies on integrated methods (vector control, clean seed, habitat management, etc.) that are less effective, especially in preventing the transboundary spread of viruses due to weak phytosanitary capacity. This presentation discusses the case of emergence and spread of the banana bunchy top virus (BBTV) responsible for the devastating bunchy top disease for which durable host resistance is unavailable. First detected in the 1960s in the Democratic Republic of Congo, BBTV spread to 16 countries between 1990 and 2022. The virus transmitted by an aphid, *Pentalonia nigronervosa*, and vegetative propagation is increasingly becoming a serious threat due to the expansion into new regions, more recently to Tanzania and Uganda. BBTV management depends on preventing virus spread, eradicating infected plants, and replanting with virus-free planting materials. We will highlight the progress and status of the recent advances to control BBTV in SSA, including the search for host-plant resistance for BBTV and its vector, surveillance using remote sensing and machine learning methods, RPA-based rapid diagnostics, biocontrol for aphids, and ALLIANCE model for coordinated control of BBTV in the continent.

P8.5-015