

**Distribution and diversity of abaca bunchy top virus and banana bunchy top virus causing bunchy top of abaca in Caraga, Philippines**

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The Philippines contributes more than 80% to the world production of abaca (*Musa textilis*) fiber or ‘Manila hemp’ that is used in various industrial products. However, abaca industry growth is significantly hampered by the bunchy top disease (BTD) caused by abaca bunchy top virus (ABTV) and banana bunchy top virus (BBTV). Herewith, we surveyed major abaca plantations in Caraga region, Philippines using mapping tools complemented with molecular diagnostics, to generate a distribution map for the incidence of abaca BTD. We showed that BTD is present in all Caraga provinces where a total of 395 samples were collected. A subset (n=120) were tested for ABTV/BBTV using duplex PCR tests where 84 samples were positive for BBTV and 66 samples for ABTV. Interestingly, there is a high rate of ABTV/BBTV co-infection, where 49 samples (41%) tested positive for both viruses. Diversity analyses revealed moderate levels of nucleotide diversity for both viruses with evidence of recombination and phylogenetic lineages showed correspondence with the geographic origin of the global isolates. Furthermore, data from PCR tests were used for the MaxEnt analyses that provided predictive insights on the possible spread of the disease in the region. Overall, we contributed novel information on the distribution and diversity of ABTV and BBTV. By using predictive analyses, we advanced of the understanding of the epidemiology of abaca bunchy top disease in a major growing region of the Philippines.