

Pikulkaew Wongsuwan 2013: Genome of *Banana bunchy top virus* and Detection Techniques. Master of Science (Plant Pathology), Major Field: Plant Pathology, Department of Plant Pathology. Thesis Advisor: Mr. Srimek Chowpongpan, Ph.D. 91 pages.

Banana are cultivated in tropical zone world wide. They are attracted by plant pathogen and insect pest such as fungi, bacteria and virus, *Banana bunchy top virus* (BBTV) caused disease in Cavendish banana appearing as bunchy top leaf, stunted and yield loss. It belong to family Nanoviridae and transmitted by banana aphid (*Pentalonia nigronervora*) insect vector. Viral DNAs were isolated from infected leaf by alkaline lysis plasmid DNA extraction method. The total six DNA components were amplified by PCR method using universal primer U_BBTVF 5' CCC MGY GCT CRG GAC GGG ACA T 3' and U_BBTVR 5' GGG TAA TAA TAR KCC CCM GYG C 3', then cloned into pCR[®]-XL-TOPO[®] Cloning vector. Each component possess conserved nonanucleotide TATTATTAC located at stem loop common region (CR-SL), Major common region (CR-M), TATA box and poly A signal. The nucleotide sequences of each component 1-6, BBTV DNA1-TH – BBTV DNA6-TH is 1,105 bp 1,053 bp 1,076 bp 1,047 bp 1,008 bp and 1,078 bp. The component BBTV DNA1-TH to BBTV DNA6-TH appear to encode protein replication protein, unknown protein, viral coat protein, cell-to-cell movement protein, retinoblastoma binding-like protein and nuclear shuttle protein respectively, excepted BBTV DNA2-TH did not encode any protein. These genome information would further analyzed relationship, distribution and yet the origin. Display symptoms of Banana bunchy top disease (BBTD) tested by PCR and dot blot hybridization techniques gave positive reaction, kluay hom, kluay khai, kluay lepmeu nang detected most but canna not detected. And found that DNA component is not equal. This is due to the successful detection of the virus in the banana plant.

Student's signature

Thesis Advisor's signature