CHARACTERISTICS OF A DISTINCT GEMINIVIRUS ISOLATED FROM PROCESSING TOMATO IN CENTRAL BRAZIL.

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Brazil exports 18.679 ton of tomato paste, the biggest agroindustry in the South America, representing 50% of the Mercosul (South America) market. Tomato (Lycopersicon esculentum), in the Federal District, is one of the most important vegetable crops with a cultivated area of approximately 160 há and yielding 10.000 ton (1996), with a revenue of US \$ 5 million. The geminivirus, tomato golden mosaic (TGMV) was first reported in Brazil in the 1960's based on the symptomatology followed by sporadic observations. This picture has drastically changed since 1993 possibly by the introduction of the new whitefly B biotype of Bemisia tabaci (or Bemisia argentifolii). In a matter of three years, an incredible number of many distinct geminivirus species emerged causing severe crop losses in both fresh market and processing tomato. In 1994, a distinct geminivirus causing yellow mosaic and leaf distortion was isolated from tomato in the Federal District. Under greenhouse condition, this isolate, named DF1, was readily transmitted by the B biotype of B. tabaci with a host range restricted to the Solanaceae family: L. esculentum, Datura stramonium, Nicotiana benthamiana, Nicandra physaloides and Physalis floridana. A 1.2 kb PCR fragment of the DF1 A component was cloned and sequenced using primers specific to the surrounding region of the replicase and coat protein genes. A preliminar sequencing analysis revealed this isolate as a possible new species within the whitefly-transmitted geminivirus subgroup III. Highest identities of partial DF1 coat protein were found with Tomato yellow vein streak geminivirus (82%) also reported in Brazil (São Paulo State), Tomato golden mosaic virus (81,8%), tomato mottle virus (80,2%). DF1 isolate has 63,5% identity with Tomato yellow leaf curl coat protein. Partial nucleotide sequence of replicase showed identities of 77,4% with Bean golden mosaic virus and 75% with TGMV.