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THREE NEW GEMINIVIRUSES IN TOMATO IN THE STATE OF PERNAMBUCO. S. G. RIBEIRO[1], I. C BEZERRA[2], R .O. REZENDE[3], M. F LIMA[4], L.V RESENDE[5],. & A.C. DE AVILA[2]. [1]CENARGEN/EMBRAPA, SAIN Parque Rural, 70770-900, Brasilia, DF, E-mail: simone@cenargen.embrapa.br; [2]CNPH/ EMBRAPA, BR 060 Km 09, C.P. 0218, 70359-700, Brasilia, DF; [3]Universidade de Brasilia, Departamento de Biologia Celular, 70919-970, Brasilia, DF; [4]CPATSA/EMBRAPA, C.P. 23, 56300-000, Petrolina, PE; [5]IPA, Av. Gal. San Martin, 1371, C.P. 1022, 50761-001, Recife, PE).Três novos geminivirus em tomate no estado de Pernambuco.

Tomato is one of the vegetable crops most important in Brazil and the state of Pernambuco has the greatest planted area of industrial varieties. Geminivirus-associated diseases are becoming an important problem in tomato production in our country, and since 1996, geminiviruses-like symptoms were observed in many areas in Pernambuco. Samples with symptoms of leaf mottling, mosaic, distortion and curling were collected in fields from Petrolina and Pesqueira. Dot blot hybridization with a probe consisting of full-length DNA-A components of BGMV-Br and BGMV-GA showed positive reaction, indicating geminivirus infection. PCR using degenerate primer pairs PAL1v1978/PAR1c715 and PAL1v1978/PAR1c496, which specifically amplify part of the component A of whitefly-transmitted geminiviruses, amplified a fragment of approximately 1.4 and 1.1 kb, respectively. Fragments obtained from one sample of each area were cloned and partially sequenced. Sequence comparisons of part of the coat protein (AV1) and replication associated (AC1) genes divided the clones into three distinct groups. Sequence identities of group TGV-PE1 (5 clones) ranged from 92 to 99% in AV1 and 94 to 98% in AC1, indicating that they were clones of the same virus. Sequence of group TGV-PE2 (1 clone) was 82-85% identical in AV1 and 80-84% in AC1 to TGV-PE1. Group TGV-PE3 (1 clone) had identity of 75-78% in AV1 and 81-84% in AC1 when compared with TGV-PE1 and 74% in AV1 and 80% in AC1 when compared with TGV-PE2 indicating that TGV-PE2 and TGV-PE3 possibly represent two different viruses, distinct from each other and from TGV-PE1. These results suggest at least three novel geminiviruses associated to tomato plants in the State of Pernambuco. Furthermore, these viruses are present in mixed infections as TGV-PE1 and TGV-PE2 are present in a plant from Petrolina and TGV-PE1 and TGV-PE3 are present a sample from Pesqueira.