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PAST AND PRESENT STATUS OF VIRUSES AFFECTING CHILI PEPPER IN MÉXICO

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Abstract

Pepper viruses were first reported in southern Tamaulipas, Mexico in 1966. Damage to Serrano pepper by tobacco etch virus (TEV) ranged from 10 to 100%. In 1971, TEV was reported damaging Bell pepper in Sinaloa, and "Ancho" pepper in Guanajuato. Cucumber mosaic virus (CMV) and tobacco mosaic virus (TMV) were reported in 1974, from the three states mentioned. Symptom characterization at that time was as mosaics, leaf deformation, and undulations of the leaf main vein. In 1977, it was described for the first time the interaction between two viruses causing a symptom known in Tamaulipas as "Chamusquina", and in 1986, it was reported that this damage was produced by the interaction of TEV and CMV. Afterward in the state of Jalisco this viral complex had 90% incidence, at the national level these viruses were the most important in this crop. However, since 1982, different symptoms were observed in pepper plants from other regions in Mexico; in the state of Puebla it was reported a disease known as "planta atigrada" due to the yellow mosaic symptoms observed on the leaves (resembling the color pattern of a tiger). Later, another disease showing similar symptoms was reported from southern Tamaulipas, this was called "rizado amarillo del chile" (pepper yellow curled). In 1983, Pepper Huasteco Virus (PHV) was described for the first time, which together with the Texas pepper virus-Tamaulipas (TPV-T) were responsible for the syndrome known as "rizado amarillo", in 1996, it was determined that "planta atigrada" was produced by PHV, which was the most spread virus in Mexico. Since 1998, symptoms produced by new virus o mixtures of the already identified ones, have been detected. These viruses are actually increasing its importance in chili pepper crops. In central and The Pacific northwest of Mexico, the highest frequency was detected in chili pepper (39%), followed by tomato (32%) and cucurbits (21%). The virus detected in higher frequency in chili pepper and tomato was TEV with 3% and CMV 23%, Begomovirus 29% and TMV and pepper mild mottle virus 14%. Impatient necrotic spot virus (INSV) was detected for the first time on chili pepper and tomato in Sinaloa and south Baja California. Both TEV and CMV have been distinguished due to a damage producing necrosis in new shoots such as "Chamusquina", symptoms confused by pest control advisors and growers with bacterial damage or TSWV. Finally, it was determined that 34% of the infections presented more than one virus, and the most affected crops by virus mixtures were cucurbits (56%), and chili peppers (49%), tomato had only 14%. In plants infected with mixtures of viruses, CMV had an incidence of 88%, TEV 64%, and TMV/PMMV 58%. Geminivirus were present in 36% of the plants sampled. Bibliography: 1. Brown, J.K. and Bird, J. 1992. Plant Disease 76:220-225. 2. Galindo, A. J. 1971. Soc. Mex. de Fitopatología, Div. Caribe p. 45-46. 3. Mora, P. C. 1977. Tesis C.P. Chapingo, Mex, 85 p. 4. Martínez, S, J. L. et al. 1986. Memorias del XIII Congreso Nal. de Fitopatología. Chapingo, Mex. p. 53. 5. Rodríguez, M. R. 1971. Tesis C.P. Chapingo, Mex. 51 p.