

Characteristics of secreted in xylem (SIX) gene in *Fusarium oxysporum* from different cucurbits in Taiwan

Wen-Hsin Chung^{1,2}, Ching-Chen Chung¹, Chao-Jen Wang¹

¹National Chung Hsing University, Taiwan

²Innovation and Development Center of Sustainable Agriculture (IDCSA), Taiwan

Purpose: *Fusarium oxysporum* is important fungal pathogen causing Fusarium wilt in many crops. More than 50 formae speciales have been recorded. The secreted in xylem (SIX) gene is considered as important effector gene to cause wilting symptom in host plants. Previous reports indicated that cross-infection has been observed between different cucurbits. The purpose of this study is to carry out the characteristics of secreted in xylem (SIX) gene in different formae speciales from cucurbits in Taiwan.

Method: Thirty-two *F. oxysporum* isolates from cucumber, loofah, bitter melon and melon were analyzed in this study. The mycelia were used to extract DNA after 5 days cultured on PDA media. The primers and PCR condition for amplifying SIX gene were followed and modified according to previous studies. Moreover, the PCR products will be sequenced by Tri-I Biotech Co. and analyzed by MEGA7. For comparing with other *F. oxysporum* isolates in SIX gene, 2 non-pathogens, 15 human pathogens and 3 non-systemic pathogens of *F. oxysporum* were added in this study.

Results and Conclusions: The results showed that the SIX gene of non-pathogens, human pathogen and non-systemic pathogens of *F. oxysporum* could not be amplified by specific primers. Moreover, the pathogenic *F. oxysporum* from cucumber, loofah and bitter melon could be separated into different molecular groups based on SIX 6 sequences. However, the isolates from melon could not form a single group. These results demonstrated that SIX gene has diversity between different formae speciales from cucurbits in Taiwan.