

Foliar pathogenic fungal species associated with *Allium fistulosum* (Welsh onion) in Sanxing, Taiwan

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Purpose: To study the occurrence of leaf blight diseases of *Allium fistulosum* (Welsh onion) and identify the pathogens involved.

Methods: A survey was conducted during 2018 and 2019 in Sanxing Township, Taiwan. Samples with leaf blight symptoms were collected randomly from Welsh onion fields. Single spore isolation was done to obtain the pure culture of the fungal pathogens and their morphological characteristics were observed. In total, 36 fungal isolates were collected from leaf blight and phylogenetic analysis based on six genes (ITS, *gapdh*, *tub2*, *cal*, *act1*, and *tef-1 α*) was performed to further confirm the phylogenetic placement of causative agents.

Results: According to the morphological and molecular data, those isolates belong to *Colletotrichum circinans*, *Colletotrichum spaethianum* and *Stemphylium vesicarium*. Pathogenicity tests conducted in the main Welsh onion cultivar 'SiaoLyu' using the spore suspension method indicated that all fungal species were pathogenic to *Allium fistulosum*. All taxa tested caused leaf blight in Welsh onion leaves although virulence among species varied from high to moderate.

Conclusions: General, *Stemphylium vesicarium* was the most widespread species associated with leaf blight of *Allium fistulosum* in Sanxing Township, Taiwan.