

# The occurrence of pear scab in Hualien district and the sensitivity of pathogen to fungicides and plant protectants<sup>1</sup>

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## Abstract

Pear scab is one of important diseases of European and Asian pear. We examined the morphological and molecular characteristics of 62 isolates of fungus *Venturia* sp. collected from Ilan and Hualien. The results of morphological comparison and ITS rDNA analysis of collected isolates showed that all of the isolates belong to *V. nashicola*. A total of sixty two isolates of *V. nashicola* were examined for their sensitivities to six fungicides and nine plant protectants in PDA plates. Hexaconazole showed good efficacy on inhibition of mycelial growth of all *V. nashicola* isolates with  $EC_{50}$  values  $< 1 \text{ mg} \cdot \text{l}^{-1}$ . Iminoctadine, bitertanol, and difenoconazole are intermediate on inhibition of mycelial growth of all isolates with  $EC_{50}$  values  $< 100 \text{ mg} \cdot \text{l}^{-1}$ . Although azoxystrobin inhibited 87% of *V. nashicola* isolates with  $EC_{50}$  values  $< 100 \text{ mg} \cdot \text{l}^{-1}$ , 7 isolates showed low sensitivities in 100 or 500  $\text{mg} \cdot \text{l}^{-1}$ . On the other hand, 22.6% *V. nashicola* isolates showed low sensitivities to benomyl, and this results companied with nature field condition that the control efficacy of benomyl in field was low. It revealed that benomyl- and azoxystrobin-resistant isolates of *V. nashicola* has been existed in the field of Ilan and Hualien. Cinnamon oil with 1500-fold dilution and agricultural soap with 200-fold dilution showed the effect of 100% inhibition one mycelial growth of pathogen. In addition, sodium bicarbonate (87.3%) and potassium bicarbonate (79.7%) with 200-fold dilution were also better to inhibit the mycelial growth of pathogen. Those effective plant protectants could be considered as non-chemical materials in further field trials.

Keywords: pear scab, fungicide, plant protectants

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