

Suthisak Saengtharatip 2014: *In Vitro* Sensitivity Assessment of Kluai Nam Wa

[*Musa* (ABB group)] to *Fusarium oxysporum* f.sp. *cubense* and Fusaric Acid.

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Kluai Nam Wa [*Musa* (ABB group)] is a popular banana in Thailand. It has a Panama disease from *Fusarium oxysporum* f.sp. *cubense* (*Foc*) as a major pest. *Foc* could produce fusaric acid (FA) which is a non-host-specific toxin. This study was aimed to assess sensitivity level of Kluai Nam Wa to *Foc* and FA. For the first experiment, the optimum density of *Foc* spore suspension and observation period for an *in vitro* inoculation were determined. The result showed that dipping in *Foc* spore suspension at  $1.5 \times 10^8$  spore/ml was the optimal concentration for sensitivity evaluation after 7 days. *Musa* (ABB group) 'Nam Wa La Ong Nam' was the most tolerant cultivar while *Musa* (ABB group) 'Nam Wa Dam' was the most susceptible cultivar. For the second experiment, the optimum FA concentration in MS medium and observation period for an *in vitro* evaluation were determined. It was shown that the bananas weakly response to FA. At 130 ppm FA, *Musa* (ABB group) 'Nam Wa'; namely, 'Nam Thai', 'Phrapradaeng', and 'Kow Khampaengphetch' showed no symptom while *Musa* (ABB group) 'Nam Wa Prarachathan' was the most sensitive to 130 ppm FA. When 260 ppm FA was used, *Musa* (ABB group) 'Nam Wa'; namely, 'Phrapradaeng', 'Dam', and 'Chumphorn' showed no symptom while *Musa* (ABB group) 'Nam Wa Kow Khampaengphetch', a non-sensitive one to 130 ppm FA, surprisingly turned to be the most sensitive. For the third experiment, the optimum FA concentration, volume and observation period and for an *ex vitro* inoculation were determined. The result showed that injecting 0.5 ml of 1,000 ppm FA was the optimum for sensitivity evaluation after 8 days. *Musa* (ABB group) 'Nam Wa Pak Chong 50' was the most tolerant cultivar while *Musa* (ABB group) 'Nam Wa Nual' was the most susceptible cultivar.

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Thesis Advisor's signature

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