

Surveillance of *Pantoea stewartii* subsp. *stewartii* in Thailand

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Abstract

Pantoea stewartii subsp. *stewartii* causes Stewart's bacterial wilt and leaf blight of sweet corn and maize, a bacterial disease that is responsible for serious crop losses. The disease is spread by the corn flea beetle *Chaetocnema pulicaria*, but can be seed transmitted at a very low frequency. However, the potential risk of seed transmission is considered so important in international shipment of corn seed that more than 50 countries ban its import unless it is certified to be free of *P. stewartii* subsp. *stewartii*. Thailand is the important corn seed production in Southeast Asia. Every year Thailand import corn seed to use in seed production industry, it makes a high risk of bacterial disease enter through the farming systems in the country. Therefore, it is necessary to survey, monitoring and surveillance to the scientific information in preparing the list of pests, pest risk analysis and the pest-free area.

From October 2007 to September 2010, a corn pest survey was conducted in Thailand to determine the establishment of the bacterial disease Stewart's wilt (*P. stewartii* subsp. *stewartii*). Total 142 sites from 20 locations of corn productions (13 sites of Chiang Mai province, 10 sites of Chiang Rai province, 13 sites of Tak province, 5 sites of Nakhon Sawan province, 5 sites of Mae Hong Son province, 8 sites of Lampang province, 4 sites of Lamphun province, 15 sites of Phrae province, 10 sites of Nan province, 4 sites of Uttaradit province, 4 sites of Phitsanulok province, 2 sites of Phetchabun province, 4 sites of Sakon Nakhon province, 6 sites of Khon Kaen province, 2 sites of Chaiyaphum province, 10 sites of Nong Khai, 10 sites of Nakhon Ratchasima province, 5 sites of Saraburi and 10 sites of Lopburi, 2 sites of Suphanburi province) were surveyed throughout the province. No wilt symptoms of seedling were detected. 1054 samples of leaf blight symptoms were collected and detected for *P. stewartii* subsp. *Stewartii* by ELISA detection kit for *Pantoea stewartii* (AgDia®, Inc., USA) and PCR following the protocol of Coplin *et al.* (2002). The result showed all samples were negative for *P. stewartii* subsp. *Stewartii* in both ELISA and PCR methods.