GREENHOUSE RESPONSES OF *VITIS VINIFERA* 'CHARDONNAY,' *AMBROSIA TRIFIDA* VAR. *TEXANA*, AND *IVA ANNUA* WITH *XYLELLA FASTIDIOSA* ISOLATES FROM TEXAS HOST PLANTS

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ABSTRACT

Sixty isolates of *Xylella fastidiosa* (*Xf*) from species or cultivars of Vitaceae (33), Asteraceae (23), Platanaceae (2), Moraceae (1), and Sapindaceae (1) were twice inoculated (8May to 1Jun06, seven greenhouse experiments) into two adjacent internodes of own-rooted 'Chardonnay' grape. Each RCBD five-replication experiment had eight to twelve treatments that included at least one winegrape isolate and one SCP buffer check. Leaf scorch symptoms on 8Aug were compared with *Xf*-serology (DAS-ELISA OD and proportion OD>0.3) on petioles collected 8Aug to 1Sep06. Some grape isolates had consistently caused Pierce's disease (PD) symptoms at 10 to 12 weeks after inoculation. A few 'Chardonnay' plants inoculated with certain *Xf* isolates from *Vitis vinifera*, *Helianthus annuus*, *Iva annua*, *Ambrosia trifida* var. *texana*, and *Platanus occidentalis* had mild PD symptoms and positive ELISA reactions. Some isolates did not cause symptoms. Evaluations will be repeated in late 2006. Twenty-one *Xf* isolates from Vitaceae (7), Asteraceae (12), Platanaceae (1), and Moraceae (1) were twice inoculated (10Jul to 20Jul06, one greenhouse experiments per host) into two adjacent internodes of *A. trifida* var. *texana* or *I. annua* grown from seed. Each RCBD six-replication experiment had twenty-three treatments that included six isolates from *Vitis* spp. and two SCP buffer checks. Symptoms were not detected. Two internode samples (inoculated zone, one internode above inoculation zone) collected 13,21,25,26Sep06 (9 to 10 weeks after inoculation) as plants senesced were assayed using *Xf*-serology (DAS-ELISA OD and proportion OD>0.3). One of six isolates from *Vitis*, one isolate from *Platanas*, and 12 isolates from spp. in Asteraceae colonized *A. trifida* var. *texana*. Three of six isolates from *Vitis*, one isolate from *Morus*, and 11 isolates from spp. in Asteraceae colonized *I. annua.*

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A PROPOSED NEW STANDARD PROTOCOL FOR DIAGNOSIS OF *XYLELLA FASTIDIOSA*

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The Interim Commission on Phytosanitary Measures of the International Plant Protection Convention (IPPC) adopted recommendations on the publication of International Standards for Phytosanitary Measures (ISPM). This guideline produces standardized documents describing procedures and methods for the detection and identification of pests of quarantine significance. The documents are reviewed by a panel of experts which also includes members from the regional plant protection organizations (i.e. NAPPO, EPPO, COSAVE, etc). These protocols describe procedures and methods for detection and identification of pests that are regulated by contracting parties and relevant for international trade. These are addressed to diagnosticians/diagnostic laboratories performing official tests as part of phytosanitary measures and provide reliable diagnostic protocol(s) for relevant pests. There is a need to develop the protocol for detection of *Xylella fastidosa* (Xf) in several hosts. We drafted such a document for Xf detection in 2005. Here we propose to update that protocol in the light of recently developed Xf diagnostic procedures and genomics data. The proposed protocol also includes the recently developed bioassay for Xf in the model plant *Nicotiana tabacum* cv. SR-1. This highly sensitive host is an excellent indicator plant to test the pathogenicity of Pierce's disease and almond leaf scorch disease strains of Xf. The procedure includes the use of *in vitro*-propagated tobacco plants grown in controlled environment (i.e., light and temperature) room. The SR-1 plants are grown in small pots to reduce space requirements, and symptoms appear in only 6-8 weeks. Xf strains from different plant hosts induce distinct symptoms in SR-1 tobacco. The protocol is applicable for disease surveys, and for quarantine and certification programs.