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

**Project Leaders:**
Mark C. Black  
Dept. of Plant Pathol. & Microbiology  
Texas A&M University  
Agric. Research and Extension Center  
Uvalde, TX 78802  
m-black@tamu.edu

James S. Kamas  
Dept. of Horticultural Sciences  
Texas A&M University  
Fredericksburg, TX  
j-kamas@tamu.edu

Alfred M. Sanchez  
Dept. of Plant Pathol. & Microbiology  
Texas A&M University  
Agric. Research and Extension Center  
Uvalde, TX 78802

Penny S. Adams  
Department of Horticultural Sciences  
Texas A&M University  
Fredericksburg, TX

James L. Davis  
Dept. of Plant Pathol. & Microbiology  
Texas A&M University  
Uvalde, TX 78802

**Reporting Period:** The results reported here are from work conducted April 2006 to September 2006.

**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*.

**FUNDING AGENCIES**
Funding for this project was provided by a cooperative agreement between the USDA Animal and Plant Health Inspection Service and Texas A&M University.
A PROPOSED NEW STANDARD PROTOCOL FOR DIAGNOSIS OF XYLELLA FASTIDIOSA

Project Leaders:
M. Francis
Department of Plant Pathology
University of California
Davis, CA 95616
mfrancis@fresno.ars.usda.gov

Edwin L. Civerolo
USDA-ARS
SJVASC
Parlier, CA 93648
eciverolo@fresno.ars.usda.gov

Cooperators:
H. Doddapaneni
Department of Vitic. and Enology
University of California
Davis, CA 95616

Hong Lin
USDA, ARS
SJVASC
Parlier, CA 93648

George Bruening
Department of Plant Pathology
University of California
Davis, CA 95616

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 fastidiosa (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.