Leaf-footed Bug, *Leptoglossus phyllopus* (Hemiptera: Coreidae), as a Potential Vector of Sorghum Fungal Pathogens

Louis K. Prom and Ramasamy Perumal

USDA-ARS, Southern Plains Agricultural Research Center, Crop Germplasm Research Unit, 2765 F&B Road, College Station, TX 77845

Sorghum, *Sorghum bicolor* (L.) Moench, is an important commodity crop for food, feed, fuel, fiber, and sometimes indispensable for the survival of man and domestic animals in austere dry environments (Frederiksen and Odvody 2000; Ratnadass et al. 2003a,b; Chandrashekar and Satyanarayana 2006). Globally, fungal pathogens inciting various foliar and panicle diseases can significantly reduce sorghum yield and quality (Sangitrao et al. 1999; Frederiksen and Odvody 2000; Ratnadass et al. 2003a,b; Chandrashekar and Satyanarayana 2006). A major obstacle to implementing efficient disease control strategies is incomplete knowledge of the mechanisms involved for spreading spores of fungal pathogens from plant to plant by mobile insects.

Insects from different orders and families transmit a number of sorghum diseases (Frederiksen and Odvody 2000; Prom et al. 2003; Ratnadass et al. 2003a,b; Showemimo 2003; Prom and Lopez 2004). In Texas, panicle-feeding bugs, including leaf-footed bug, *Leptoglossus phyllopus* (L.), frequent sorghum panicles from flowering to hard-dough stages of development (Hall and Teetes 1981, Bandyopadhyay et al. 1998, McPherson and McPherson 2000) when the plant is most susceptible to fungal pathogens. These insect pests damage the crop by sucking juices from the developing sorghum kernels and other parts of the panicle (http://sorghumimp.tamu.edu/pests/panicles/othrbugs.htm). Mechanical injury to the kernels resulting from insect feeding allows infection and colonization by fungal, bacterial, and viral pathogens of sorghum (Ratnadass et al. 2003a,b). Leaf-footed bugs reduce sorghum yield and seed germination (Hall et al. 1981).

Leaf-footed bugs were collected from a field containing ergot-infected sorghum plants at the USDA-ARS, Southern Plains Agricultural Research Center, College Station, TX. Eight to 10 insects were collected at weekly intervals in August and September 2006 and placed individually into 21 x 70-mm vials and stored at -7°C.

In each vial containing a leaf-footed bug, 5 ml of sterilized water was added. To dislodge the spores from the exterior of the insect body, each vial was shaken using a vortex shaker for 30 seconds and the insect was discarded. Spores were quantified using a hemacytometer.

Ergot spores from the external body parts of the insects were germinated on water agar plates to determine viability. Protocol for determining ergot spore viability on water agar was described by Prom and Lopez (2004).

---

1Department of Plant Pathology and Microbiology, Texas A&M University, College Station, TX 77843