First Records of *Piezodorus guildinii* in Missouri

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First Records of *Piezodorus guildinii* in Missouri

Kelly V. Tindall and Kent Fothergill

Redbanded stink bug, *Piezodorus guildinii* (Westwood), is an important pest of soybean, *Glycine max* L., in South America (Panizzi and Slansky 1985b, Arroyo and Kawamura 2003) and Louisiana (Paxton et al. 2007). The ability to utilize numerous host plants (Panizzi and Slansky 1985b, Panizzi 1997) allows early season reproduction before redbanded stink bug moves into soybeans at the preferred stage of plant growth. Seed quality and yield are reduced because redbanded stink bug prefer to feed on fruiting structures (Panizzi and Slansky 1985a, Corrêa-Ferreira and de Azevedo 2002). Application of insecticide to protect soybean yield can reduce grower profits (Paxton et al. 2007).

The redbanded stink bug has been found in Florida (Panizzi and Slansky 1985b) and Georgia (McPherson et al. 1993). In 2000, redbanded stink bug was observed in south-central Louisiana (Temple et al. 2007). By 2004, redbanded stink bug had increased to outbreak levels across the south-central parishes and reached the northeastern corner of Louisiana. In 2005, redbanded stink bugs were documented in Arkansas and continue to be found in southern Arkansas soybeans (Smith et al. 2009).

In 2009, redbanded stink bug was found during surveys of late-planted fields of ‘R6-7’ (Fehr et al. 1971) soybeans in Dunklin and New Madrid counties, MO (Table 1). These occurrences were the first records of redbanded stink bug in Missouri. Soybean field locations were determined using a Garmin eTrex GPS (Garmin Ltd., Olathe, KS). Sixteen fields in six southeastern Missouri counties were surveyed by sweep net (200 sweeps per field) for late-season stink bugs. Adult stink bugs with the exception of redbanded stink bug were identified using McPherson (1982). J. E. McPherson (personal communication) confirmed the identification of the redbanded stink bug adults. The few stink bug nymphs encountered were not identified or counted.

Table 1. Collection Data for *Piezodorus guildinii* in Soybean Fields in Missouri

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>County</th>
<th>No./200 sweeps</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 October 2009</td>
<td>N36.01727° W-90.24395°</td>
<td>Dunklin</td>
<td>1</td>
</tr>
<tr>
<td>10 October 2009</td>
<td>N36.13039° W-90.23116°</td>
<td>Dunklin</td>
<td>1</td>
</tr>
<tr>
<td>11 October 2009</td>
<td>N36.08884° W-90.99748°</td>
<td>Dunklin</td>
<td>1</td>
</tr>
<tr>
<td>24 October 2009</td>
<td>N36.43885° W-89.71107°</td>
<td>New Madrid</td>
<td>2</td>
</tr>
<tr>
<td>24 October 2009</td>
<td>N36.59177° W-89.51075°</td>
<td>New Madrid</td>
<td>1</td>
</tr>
</tbody>
</table>

1Hemiptera: Pentatomidae

2University of Missouri, Delta Research Center, PO Box 160, Portageville, MO 63873

3Conservation Seeding and Restoration, Inc. 506 Center Street West, Kimberly, ID 83341
Redbanded stink bug was the third most numerous adult phytophagous stink bug encountered in soybeans late during the growing season in 2009 in southeastern Missouri. The most common adult stink bug encountered during surveys was green stink bug, *Acrosternum hilare* (Say) (n = 13). Brown stink bug, *Euschistus servus* (Say) (n = 8), spined soldier bug, *Podisus maculiventris* (Say) (n = 7), redshouldered stink bug, *Thyanta accerra* McAtee (n = 3), dusky stink bug, *Euschistus tristigmus* (Say) (n = 2), and rough stink bug, *Brochymena quadripustulata* (F.) (n = 1) were also encountered.

Costa and Link (1982) found: redbanded stink bugs are more mobile than southern green stink bug, *Nezara viridula* (L.); redbanded stink bug females disperse more than males and wind can influence their dispersal. Records of southern green stink bug in southern Illinois (McPherson 1982) demonstrate dispersal of southern green stink bug as a stray beyond its normal range in the southern United States. Possible resident populations of southern green stink bug and redbanded stink bug occur in southeastern Arkansas (Smith et al. 2009), coupled with the dispersal ability of redbanded stink bug, suggest the detection of redbanded stink bug in Missouri may be more frequent than is detection of southern green stink bug.

The winter of 2009-2010 was colder than normal in Jonesboro, AR (Table 2), especially in February, when the average minimum temperature was -2.8°C (NOAA 2010, Weather Underground 2010). The winters of 2007-2008 and 2008-2009 in Jonesboro were warmer than normal. Jonesboro was chosen as the northern edge of the area most likely to be a source of redbanded stink bug for southeastern Missouri. It is possible that winter temperatures in the area could be a predictor for dispersal into Missouri. No redbanded stink bug was found in Missouri in 2010. It is anticipated that southeastern Missouri could host irruptive populations in the future. There is much to be learned about redbanded stink bug within the Mississippi Delta region including: overwintering biology, early season hosts, and interactions with soybeans and their attendant fauna.

| Table 2. Winter Average Temperature (°C) Data for Jonesboro, ARa |
|------------------|------------------|------------------|------------------|
| December         | 5.6              | 4.4              | 3.3              | 4.3              |
| January          | 2.8              | 2.2              | 1.1              | 2.0              |
| February         | 5.6              | 7.2              | 1.7              | 4.9              |
| March            | 10.0             | 11.1             | 10.6             | 10.2             |

aJonesboro Municipal Airport
bdata from Weather Underground (2010)
cdata from NOAA (National Oceanic and Atmospheric Administration) (2010)

Acknowledgment

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References Cited


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