FIRST RECORD OF RHYSOMATUS NIGERRIMUS (CURCULIONIDAE: MOLYTINAE: CLEOGONINI) INFESTATIONS IN SOYBEANS IN MEXICO


1Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), Campo Experimental Rosario Izapa, Tuxtlal Chico, Chiapas, C. P. 30780, Mexico
2INIFAP, Campo Experimental Las Huastecas, Ciudad Cuauhtémoc, Tamaulipas, 89610, Mexico
3Departamento de Entomología Tropical, El Colegio de la Frontera Sur, Tapachula, Chiapas, CP 30700, Mexico
4Colegio de Postgraduados, Montecillo, Edo de Mexico, CP 56230, Mexico
5Universidade Federal do Paraná, Departamento de Zoologia. Caixa Postal 19020, 81531-990 Curitiba-PR, Brazil
62313 W. Calle Balaustre, Green Valley, AZ 85614-8047, USA

Weevils are members of the beetle family, Curculionidae, which comprises approximately 4,600 genera and 51,000 species (Oberprieler et al. 2007). In Mexico, more than 2,300 species have been reported and 6.5% and 40.5% of the genera and species, respectively, are endemic (Anderson & O’Brien 1996). Most weevils are phytophagous during both larval and adult stages (Marvaldi & Lanteri 2005).

The genus Rhysomatus includes more than 150 Neotropical and Nearctic species, many of which are of agricultural importance (Viale 1951; Viale & Thomas 1954; Santos et al. 2001). In Costa Rica, the presence of a Rhysomatus, nr. R. subcostatus Fahraeus, was observed attacking yam (Ipomoea spp.; Solanales: Convolvulaceae) crops, while in Argentina R. subtilis Fiedler was recently reported attacking soybean (Glycine max (L.) Merr.; Fabales: Fabaceae) (Viale 1951; Viale & Thomas 1954; Socías et al. 2009). In Mexico, 27 species of Rhysomatus have been reported (Kissinger 1962; O’Brien & Wibmer, 1982; Maes & O’Brien 1990; Salas-Aráiz et al. 2001; Morone et al. 2002); but none has been considered as an agricultural pest.

Soybean is widely planted in Mexico, and in 2011 the surface area dedicated to the soybean crop was 167,925 ha, with a production of 183,981 t, mainly in the states of Tamaulipas, San Luis Potosí, Chiapas, Veracruz and Campeche (SIAP 2012). However, no information is available of Rhysomatus on soybean. Therefore, this paper reports for the first time, R. nigerrimus attacking soybean crops in northern and southern Mexico. It also presents notes on its field bioecology.

For the last 3 yr through pest monitoring in soybean crops in the municipality of Altamira, Tamaulipas, Mexico, in the “Brecha de Corpus” zone and in El Manzano, Tapachula, Chiapas, the presence of a black weevil that attacks soybean in both vegetative and reproductive stages has been detected. In the 2009 spring-summer crop in southern Tamaulipas, the weevil was observed to cause considerable damage to pods on approximately 1800 ha of soybean. Considerable damage caused by this weevil has also been detected on approximately 3,000 ha of soybean crops in Tapachula, Chiapas. In both places the weevils damaged up to 48% of the pods, and the damage was distributed uniformly throughout the soybean crop. Recently, in 2011, the weevil was found in volunteer soybean plants in areas where soybean had been cultivated in the municipality of Ebano, San Luis Potosí.

Sampling was conducted in soybean growing areas in the states of Tamaulipas, Chiapas and San Luis Potosí to collect adult weevils, which were preserved in 70% alcohol. The coordinates of each of the points where the insects were collected were georeferenced with a GPS instrument (Garmin 12, Olathe, Kansas, USA) (Fig. 1). The weevil specimens were identified as Rhysomatus nigerrimus Fahraeus 1837 (Curculionidae: Molytinae: Cleogonini) by Dr. Germano Rosado-Neto. Identification was corroborated independently by Dr. Charles O’Brien. The voucher specimens were deposited in the collection of El Colegio de la Frontera Sur, Chiapas, Mexico, in the collection “Pe. Jesus S. Moure” of the Zoology Department, Federal University of Paraná, Curitiba, Brazil, and in the personal collection of Dr. Charles O’Brien, Green Valley, Arizona, USA.

Rhysomatus nigerrimus has been recorded in the Lesser Antilles, Belize, Honduras, Panama, Guatemala and Mexico (Champion 1902 cited by Burke 1961; O’Brien & Wibmer 1982; Peck 2009). In San Vicente, this weevil species has been reported attacking yams, Ipomoea batatas (L.) Lam.; Solanales: Convolvulaceae (Bailey 1994; Peck 2009), while in Mexico it has been collected...