This short description was prepared in the framework of the EU FP7 project DROPSA - Strategies to develop effective, innovative and practical approaches to protect major European fruit crops from pests and pathogens (grant agreement no. 613678). This pest was listed in the DROPSA alert list for orange and mandarin fruit.

***Leptoglossus zonatus* (Hemiptera: Coreidae)**

Location of life stages on plant parts: Eggs on leaves and stems. Nymphs and adults feed on leaves, flowers, fruit and seeds, and are mobile (Chi and Mizell, 2012; Buss et al., 2011). On Citrus, ripening fruit may be attacked by adults (for four Leptoglossus species; Guerrero et al., 2012).

Fruit pathway: Yes, as adults, possibly nymphs.

Other pathways: plants for planting.

Hosts: Polyphagous. *Solanum lycopersicum* is a preferred host, as well as *Jatropha curcas*. Other hosts mentioned are *Satsuma mandarin* (feeding host, it is unclear if it can complete its life cycle on this plant), also *Zea mays, Gossypium, Solanum melongena, Prunus persica, Carya illinoinensis, Punica granatum, Citrullus lanatus* (Chi and Mizell, 2012), *Citrus aurantiifolia, Citrus sinensis, Cucumis melo, Cucurbita, Persea americana, Psidium guajava, Sorghum bicolor* (CABI CPC), *Cyphomandra betacea* (Arnal et al., 2005).

Distribution: North America: Mexico (Tepole-Garcia et al., 2012; Tarango-Rivero and Gonzalez Hernández, 2009), USA (south and west, incl. Alabama, Arizona, California, Florida, Louisiana, Texas) (Chi and Mizell, 2012; Xiao and Fadamiro, 2010); Central America: through Mexico and Central America (incl. Nicaragua, Honduras) into the northern half of South America (Chi and Mizell, 2012; Xiao and Fadamiro, 2010), El Salvador (Gonzalez-Chavez, 2002). South America: Brazil (De Oliveira et al., 2004), Venezuela (PAV, 2013), Colombia (Duarte Sanchez, 2006).
In addition: Coreoidae Species File (2016), citing Packauskas (2010) (not available to the assessor) mentions Argentina, Bolivia, Costa Rica, Ecuador, Guatemala, Panama, Peru (a quick search did not allow to find specific records for these countries). "Caribbean" is indicated in King and Saunders (1984), but no specific record was found.
L. zonatus has spread at least within the USA (for example first recorded in Florida in 2005 – Buss et al., 2011).

Damage: Feeding causes deformations, spots, aborted fruit, malformed seeds (Buss et al., 2011). Feeding on fruit and seeds affects the quality and cause yield reduction (Marchiori, 2002). In the USA, *L. zonatus* has become a major pest of Citrus, especially *Satsuma mandarin*, and is considered an emerging pest on various other of crops such as maize, cotton, eggplant, peach, pecan, pomegranate, tomato, watermelon (Xiao and Fadamiro 2011; Chi and Mizell, 2012). In South America, it is a pest of various crops, and also a vector of plant trypanosomatids (de Oliveira et al., 2004). On maize in Brazil, losses of 15% were registered (Marchiori, 2002). In Colombia, damage is caused to Citrus (Duarte Chavez, 2002). In Central America (King and Saunders, 1984), it is a minor pest that can be serious on tomato. Schaefer and Panizzi (2000) mention damage on many crops, including cotton, tomato, citrus, avocado, cucurbits, sorghum, eggplant, pomegranate, passionfruit, maize, soybean.

Other information: The synonym *Veneza zonata* is used in some publications (e.g. Coreoidae Species File, 2016). CABI CPC contains separate entries for *Veneza zonata* and *Leptoglossus zonatus*; however, they are synonyms according to others.

Recorded impact: Moderate	**Intercepted:** Not known	**Spreading/invasive:** Yes

References:

Arnal E, Ramos F, Aponte A, Suárez ZH, Cermeli M, Rojas T. 2005. Reconocimiento de insectos y enemigos naturales asociados al tomate de árbol en Aragua y Miranda,

Venezuela CENIAP HOY, Revista Digital del Centro Nacional de Investigaciones Agropecuarias de Venezuela, Número 9 septiembre-diciembre 2005

Buss LJ, Halbert SE, Johnson SJ. 2011. Leptoglossus zonatus-A new leaf-footed bug in Florida (Hemiptera: Coreidae). Pest Alert, Florida Department of Agriculture and Consumer Service, Division of Plant Industry, Gainseville. http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Plant-Industry-Publications/Pest-Alerts/Pest-Alerts-Leptoglossus-Zonatus-A-New-Leaffooted-Bug-In-Florida

CABI CPC. Crop Protection Compendium. CAB International, UK. http://www.cabi.org/cpc

Chi AA, Mizell RF III. 2012. Leptoglossus zonatus. Featured creatures. University of Florida. http://entnemdept.ufl.edu/creatures/citrus/leptoglossus_zonatus.htm

CoreoideaSF Team. 2016. Coreoidea Species File Online. Version 5.0/5.0. http://Coreoidea.SpeciesFile.org

de Oliveira D, de Souza Tde A, Murate LS, Jankevicius JV, Gaziri LC, Jankevicius SI. 2004. Protease and phospholipase inhibition protect Veneza zonata (Hemiptera Coreidae) against septicemia caused by parasite trypanosomatid 563DT. J Invertebr Pathol. 2004 Jan;85(1):9-17.

Duarte Sanchez IR. 2006. Biologia, parasitoides y danos de Leptoglossus zonatus y Leptoglossus gonagra (Heteroptera: Coreidae) en cultivos de Citrus spp. Thesis. Universitad industrial de Santander.

Gonzalez-Chavez MO. 2002. Informe De Consultorõa Sobre:Diagnostico De Las Especies Invasoras De Fauna Invertebrada Y Sus Efectos Sobre Ecosistemas En El Salvador. Ministerio De Medio Ambiente Y Recursos Naturales.

Guerrero S, Weeks J, Hodges A, Martin K, Leppla N. 2012. Citrus Pests. Department of Entomology, University of Florida and Identification Technology Program, CPHST, PPQ, APHIS, USDA; Fort Collins, CO. http://idtools.org/id/citrus/pests (http://idtools.org/id/citrus/pests/factsheet.php?name=Leaf-footed+bug)

King ABS and Saunders JL. 1984. The invertebrate pests of annual food crops in Central America. Overseas Development Administration, London.

Marchiori CH. 2002. Natural enemies of Leptoglossus zonatus (Dallas, 1852) (Hemiptera: Coreidae) on maize in Itumbiara, Goias. Instituto Luterano de Ensino Superior de Itumbiara. (ILES). Biotemas 15: 69-74.

PAV. 2013. Plagas agricolas de Venezuela. Sociedad Venezolana de Entomología (SVE) and Museo del Instituto de Zoología Agrícola "Francisco Fernández Yépez" (MIZA). http://plagas.miza-ucv.org.ve/ (Accessed January 2014)

Schaefer CW, Panizzi AR. 2000. Heteroptera of Economic Importance. CRC Press, 28 juil. 2000 - 856 pages.

Tarango Rivero SH, González Hernández A. 2009. Especies, Fluctuación Poblacional y Enemigos Naturales de Chinches (Hemíptera: Pentatomidae, Coreidae, Largidae) Asociadas a Nogal Pecanero. Southwestern Entomologist 34(3):305-318. 2009.

Tepole-Garcia RE, Pineda-Guillermo S, Martinez-Herrera J, Castrejon-Gomez VR. 2012. Records of Two Pest Species, Leptoglossus zonatus (Heteroptera: Coreidae) and Pachycoris klugii (Heteroptera: Scutelleridae), Feeding on the Physic Nut, Jatropha Curcas, in Mexico. Florida Entomologist (95)1: 208-2010

Xiao YF, Fadamiro HY. 2010. Evaluation of damage to satsuma mandarin (Citrus unshiu) by the leaffooted bug, Leptoglossus zonatus (Hemiptera: Coreidae). J. Appl. Entomol. 134 (2010) 694–703.