Euschistus conspersus (Hemiptera: Pentatomidae)

This short description has been prepared in the framework of the EPPO Study on Pest Risks Associated with the Import of Tomato Fruit. The whole study can be retrieved from the EPPO website.

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Africa	Asia	Oceania	North America	South-Central America and Caribbean

***Euschistus conspersus* (Hemiptera: Pentatomidae)**

Why	Identified in the EPPO tomato study. *E. conspersus* is one of several polyphagous stink bugs that attack tomato in the North America. Another *Euschistus*, *E. servus* was dealt with separately as many references differ, but *E. conspersus* and *E. servus* should be reviewed in parallel.
Where	**EPPO region**: absent **North America**: Common Pacific coast (California to British Columbia) (Alcock 1971, citing others); California (UCI PM, 2011), Oregon (OSU, ND), Idaho? (regulated on pears from that State, Biosecurity NZ, 1999); USA (California, Maryland?); Washington State (Krupke et al., 2006 - endemic to western North America); Canada (Maw, 2011);. Western North America (Schaefer and Panizzi, 2000).
Climatic similarity	High. Possibly 8-10 common climates considering the areas listed above, but its detailed distribution (including its eastern limit) is not known.
On which plants	Tomato (CABI CPC; UC IPM, 2011, Cullen and Zalom, 2006); apple, pear (Krupke et al., 2006), apricot (McPherson and McPherson, 2000). Note: some early publications may contain other fruit tree crops, but were not easily available. Spring host plants: black mustard (Brassica nigra), wild radish (*Raphanus sativus*), *Malva parviflora* (Cullen and Zalom, 2006). Lucerne, sorghum, cotton, sugarbeet, tomato (Schaefer and Panizzi, 2000). Blackberry, vegetables, almond, pome fruit? peach?, cherry? (Krupke, 2007). Wild plants are important in the life cycle of the pest. It feeds on mullein (*Verbascum thapsus*), bitterbrush (*Purshia tridentata*), red-osier dogwood (*Cornus stolonifera*), currant (*Rhus trilobata*) (Krupke et al., 2001). In a host experiement, Krupke et al. (2002) found that it could complete its life cycle on *Trifolium repens*, *Verbascum thapsus* and *Malva neglecta*, but not *Taraxacum officinale*, *Dactylis glomerata* or *Chenopodium album*.
Damage	Eggs are laid on foliage, adults and nymphs feed on fruit, and are mobile. Damage is due to the feeding by nymphs and adults. Schaefer and Panizzi (2000) mention that *E. conspersus* causes occasional damage to alfalfa, sorghum, cotton and sugarbeet and is the most common stink bug on tomato in California. *E. conspersus* is mentioned amongst major pest of economic importance for tomato for North America by Berlinger (1987). It is a key pest of processing tomatoes in California's Central valley; adults (offsprings of the first generation) move to tomato fields when their spring host plants or cultivated hosts senesce or are harvested, and reproduce for a second generation in tomato fields (Cullen and Zalom, 2006). The pest has caused increased damage to fruit in apple orchards in Washington State, where adults also move to orchards when their wild hosts senesce (Krupke and Brunner, ND; Krupke et al., 2001). Finally Krupke et al. (2006) report occasional damage on pear and apple in Washington State.
Dissemination	Adults fly and disperse between fields and crops.
Pathway	Fruits (especially if green parts attached?), plants for planting, of host plants from countries where *E. conspersus* occurs.
Possible risks	Tomato, apple, pear, lucerne and sugarbeet are major crops in the EPPO region. The climatic similarity according to the EPPO Study between the area where it occurs and the EPPO region is high.
Categorization	Quarantine list for Japan 2011, Korea Rep 2011 (from the IPP); regulated by New Zealand on pears from Idaho (USA) (Biosecurity NZ, 1999)
Sources	Alcock J. 1971. The behavior of a stinkbug, Euschistus conspersus Uhler (Hemiptera: Pentatomidae). Psyche, 78:4, 215-228 Berlinger MJ. 1987. Pests. pp 391-441 In The Tomato Crop, A scientific basis for improvement (eds Atherton JG and Rudich J). Chapman and Hall, London - New York.

Biosecurity NZ. 1999. Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Pear, Pyrus communis from the United States of America - State of Idaho. Date Issued: 4 November 1999. http://www.biosecurity.govt.nz/files/ihs/pear-us-id.pd

CABI CPC. 2013

Cullen EM, Zalom FG. 2006. Euschistus conspersus female morphology and attraction to methyl (2E,4Z)-decadienoate pheromone–baited traps in processing tomatoes. Entomologia Experimentalis et Applicata 119: 163–173.

Krupke CH, Brunner JF, Doerr MD, Kahn AD. 2001. Field Attraction of the Stink Bug Euschistus conspersus (Hemiptera: Pentatomidae) to Synthetic Pheromone-Baited Host Plants. Journal of Economic Entomology Vol. 94, no. 6, 1500-1505.

Krupke CH, Brunner JF, Jones VP. 2003. The growth and development of the consperse stink bug, Euschistus conspersus, on selected potential host plants present in orchard ground cover. Washington State University, Tree Fruit Research and Extension Center, Wenatchee, WA. Proceedings of the 77th Annual Western Orchard Pest & Disease Management Conference. 15-17 January 2003, Hilton Hotel, Portland, OR v Publ. by Washington State Univ., Pullman, Washington

Krupke CH, Brunner JF. ND. Biology and management of the consperse stink bug, Euschistus conspersus. http://entomology.tfrec.wsu.edu/jfbhome/growerarticles/sbhort.pdf (Accessed December 2013)

Krupke CH, Jones VP, Brunner JF. 2006. Diel Periodicity of Euschistus conspersus (Heteroptera: Pentatomidae). Aggregation, Mating, and Feeding. Ann. Entomol. Soc. Am. 99(1): 169-174. http://extension.entm.purdue.edu/fieldcropsipm/pubs/9.pdf (Accessed December 2013)

Krupke CH, Jones VP, Brunner JF. 2011. Evaluating aggregation membership and copulatory success in the stink bug, Euschistus conspersus, using field and laboratory experiments. Journal of Insect Science: Vol. 11 | Article 2

Krupke CH. 2007. Stink bugs: Consperse stink bug Euschistus conspersus Uhler, Green stink bug or Green soldier bug Acrosternum hilare (Say). (originally published 1993 (T. W. Anthon & E. H. Beers); revised December 2007). http://jenny.tfrec.wsu.edu/opm/displaySpecies.php?pn=190

Maw E. 2011. Checklist of the Hemiptera of British Columbia, 2011. Exported and modified from database underlying Maw H.E.L., Foottit, R.G., Hamilton, K.G.A., Scudder, G.G.E. 2000. Checklist of the Hemiptera of Canada and Alaska. NRC Press, Ottawa, 220 pp. http://www.geog.ubc.ca/biodiversity/efauna/documents/bchemiptera_chklist2010.pdf (Accessed December 2013)

McPherson JE, McPherson R. 2000. Stink Bugs of Economic Importance in America North of Mexico. CRC Press, 19/09/2000 - 272 pages. http://books.google.dk/books?id=sPoMyfDh5sYC&dq=Stink+Bugs+of+Economic+Importance+conspersus&hl=da&source=gbs_navlinks_s

OSU. ND. Euschistus conspersus - Consperse stink bug. Oregon State University. http://horticulture.oregonstate.edu/content/euschistus-conspersus-consperse-stink-bug

Quarantine lists of Japan 2011, Korea Rep 2011 (from the IPP)

Schaefer CW and Panizzi AR. 2000. Heteroptera of economic importance, CRC Press, Boca Raton, FL, 828 pp. http://books.google.dk/books?id=AVcBI0GL-fQC&pg=PA193&lpg=PA193&dq=nysius+clevelandensis+biology&source=bl&ots=xWYygyiZVT&sig=SwfKG-c128yJdli3YX44xP5dGsA&hl=da&sa=X&ei=Ae2FUuf4D6i34wSahICABQ&ved=0CCwQ6AEwAA#v=onepage&q=nysius%20clevelandensis%20biology&f=false (Accessed December 2013)

UC IPM. 2011. Pest Management Guidelines: tomato. University of California.

(Accessed August 2013