Cernuella virgata

Scientific name
Cernuella virgata Da Costa

Synonyms:
Cernuella virgatus, *Cernuella variabilis, Cernuella virgata* ssp. *variegata*, *Helicella maritime*, *Helicella variabilis*, *Helicella virgata*, *Helix virgata*

Common Name(s)
Maritime gardensnail, Mediterranean snail, Mediterranean white snail, striped snail, vineyard snail, white snail

Type of Pest
Mollusk

Taxonomic Position
Class: Gastropoda, **Order:** Stylommatophora (Eupulmonata), **Family:** Hygromiidae (Helicidae)

Reason for Inclusion in Manual
CAPS Target: AHP Prioritized Pest List – 2009 & 2010 (as *Cernuella* spp.)

Pest Description
The maritime garden snail is relatively small and is characterized by prominent spiral banding on the shell (Fig. 1). The shell of *C. virgata* is globose-depressed and white or yellowish-white in color with dark-brown bands or spots (Fig. 1, 2). Snail size is 6 to 19 mm high x 8 to 25 mm wide. Shell size and banding patterns are reported to vary widely geographically throughout Southeastern Australia (Baker, 1988). Size has been demonstrated as inversely proportional to population density (Baker, 1988). *C. virgata* is considered polymorphic; banded and unbanded (more common) morphs have been found throughout Australia. Relative frequencies of each morph are likely correlated with site-specific factors such as predator pressure (Baker, 1988).

Figure 1. Banding of *C. virgata*. Photo courtesy of Tenby Museum

Note: *Cernuella virgata* has been introduced in the states of Washington (NAPIS, 2007) and California (Hardy, 2004).

Figure 2. *C. virgata*. Photo courtesy of L. Poggiani. www.lavalledelmetauro.it

Symptoms/Signs

Cernuella virgata is found atop plants during summertime and may also be found feeding on new growth earlier in the season. These snails aestivate on plant heads and stalks (Fig. 3), which contaminate crops and clog machinery. Areas previously infested with snails can prevent re-establishment of site as pastureland, as livestock often reject slime-contaminated hay and forage (Baker, 2002).

Figure 3. Multiple *C. virgata* on tree trunk. Photo courtesy of L. Poggiani, www.lavalledelmetauro.it

Survey

CAPS-Approved Method: Visual (Floyd, 2008).

Literature-Based Methods:

Visual survey: *C. virgata* is a conspicuous crop pest that hides during the day. Surveys are best carried out at night using a flashlight or in the morning or evening following a rain event. It is easily seen, and attacked plants exhibit extensive rasping and defoliation. Like other mollusks, it can also be detected by signs of ribbon-like excrement and slime trails on plants and buildings.

A recent risk analysis by USDA-APHIS-PPQ-CPHST shows that portions of North Dakota are at the greatest risk from this mollusk based on host availability. Portions of Arkansas, California, Colorado, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Mississippi, Montana, Nebraska, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Washington, and Wisconsin are also at moderate risk based on host availability.

Key Diagnostics

CAPS-Approved Method: Confirmation requires a morphological identification. All specimens should be submitted to Patrick Marquez (Western Region) or John Slapcinsky (Eastern Region). Both Domestic Identifiers are able to identify (even immature specimens) to the species level for this genus.

Literature-Based Methods: A morphological identification is required. *C. virgata* is a relatively small snail (up to 15mm in diameter) characterized by prominent spiral banding on the shell.

C. virgata closely resembles the white Italian snail (*Theba pisana*) in appearance and pest status. *C. virgata* can be differentiated from *T. pisana* by more pronounced spiral banding. Also, the umbilicus (hole about which the shell spirals) appears as a circular hole rather than being partially obscured as in the white Italian snail (CABI, 2007).

References

Baker, G.H. 1988. The life history, population dynamics and polymorphism of *Cernuella virgata* (Mollusca: Helicidae). Australian Journal of Zoology 36: 497-512.

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CABI. 2007. Crop protection compendium: global module. Commonwealth Agricultural Bureau International, Wallingford, UK. http://www.cabi.org/compendia/cpc/.

Floyd, J. 2008. New Pest Response Guidelines: Temperate Terrestrial Gastropods. USDA-APHIS-PPQ-Emergency and Domestic Programs, Riverdale, Maryland.

Hardy, A.R. 2004. Exotic mollusks intercepted or established in California, and the impact upon California Agriculture. In: 2004 Plant Pest Diagnostics Laboratory Report. California Department of Food and Agriculture. http://www.cdfa.ca.gov/phpps/ppd/PDF/PPDC2004.pdf.

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