**Otiorhynchus dieckmanni**

**Scientific Name**
*Otiorhynchus dieckmanni* Magnano, 1979

**Synonyms:**
*Arammichnus dieckmanni*

**Common Names**
Wingless weevil

**Type of Pest**
Weevil

**Taxonomic Position**
*Class:* Insecta, *Order:* Coleoptera, *Family:* Curculionidae

**Reason for Inclusion**
Priority Pest List for 2012: Pests of Economic and Environmental Importance

**Pest Description**
The following descriptions are at the genus level unless otherwise noted.

**Eggs:** Typical *Otiorhynchus* eggs are about 1 mm in diameter, sub-spherical and whitish; the eggs darken with age (CABI, 2010).

**Larvae:** Typical *Otiorhynchus* larvae are opaque, yellowish to creamy white and legless. The head is brown and 1.5 to 2 mm in diameter. Larvae have three dorsal folds in the abdominal segments; mandibles bidentate apically. Mature larvae are 9 to 11 mm in length (CABI, 2010).

**Pupae:** Typical *Otiorhynchus* pupae are yellowish-white and about 10 mm in length with visible features. Pupae are usually surrounded by a hardened oval case of soil (CABI, 2010).

**Adults:** Genus *Otiorhynchus:* Oval, flightless; rostrum stout, apically notched and extremely dilated to form pterygium; mandibles large, robust, with prominent scar; antennal scrobes large, oval, vaguely defined posteriorly, dorsal; antennal scape long, passing middle of eye when retracted; claws basally separate. Subgenus *Arammichnus:* tibia with spatulate apex (all other subgenera with apex expanded ventrally but not dorsally). Species group *O. setulosus:* pronotum punctate; frons as wide as elevated dorsomedian section of rostrum; elytral interstriae with long erect or suberect setae. Species *O. dieckmanni:* dark brown (chestnut brown when immature); pronotum with punctuation coarse, umbilicate; elytra oblong ovate, subparallel, greatest width in middle; elytron with...
erect setae intermixed with slender, lanceolate scales; standard length 5.3 to 6.7 mm (pronotum and elytra, without head).

**Biology and Ecology:**
It is believed that this species reproduces parthenogenetically since no males have been found to date (Baez, 2008). Eggs are laid in April and hatch after 15 days (Dieckmann, 1980). *O. dieckmanni* larvae live in the soil, feeding on roots and underground stems of plants. *O. dieckmanni* is polyphagous (Koch, 1989). Pupation occurs in the soil (Warner and Negley, 1976).

The adults of *Otiorhynchus dieckmanni* have nocturnal habits and feed on plant foliage by making a characteristic leaf-edge notching (Dieckmann, 1980; Gospodar and Korge, 1982; Heijerman and Raemakers, 2001; Hill, 1987). *O. dieckmanni* is nocturnal and prefers dark places (Koch, 1989). It is often found near human dwellings and has been found in small gardens, garbage dumps which have been closed and planted, and in city parks (Koch, 1989). *O. dieckmanni* is often observed sitting on branches of trees and shrubs (Koch, 1989).

This species is wingless and disperses by walking (Baez, 2008). Many *Otiorhynchus* species found in the United States will feed during the warm nights from spring to fall and can overwinter as larvae or adults in warmer regions (Warner and Negley, 1976).

**Symptoms/Signs**
Adults from the *Otiorhynchus* genus feed on shoots, buds, leaves and sometimes the bark of host plants (CABI, 2007). High populations of larvae can lead to reduction of plant vigor and yield and can lead to plant death (USDA-CSREES, 1999).

**Pest Importance**
Many *Otiorhynchus* species can be serious pests of cultivated plants (Warner and Negley, 1976), including strawberry, raspberry, blackberry, cranberry, nursery grown rhododendron and olives in the United States (USDA-CSREES, 1999). *O. dieckmanni* is considered an invasive pest in the Netherlands and can cause considerable damage to ornamental plants, along with a complex of other *Otiorhynchus* species (Baez, 2008).

Specimens of *O. dieckmanni* were collected in England damaging *Iris sibirica* (Barclay, 2009). This record is the only time that *O. dieckmanni* has been recorded as a pest in the United Kingdom (Barclay, 2009).

The potential economic impact of *O. dieckmanni* in the United States is unknown, but this species could have an effect on ornamental plants and small fruits (Baez, 2008).
Known Hosts

Heijerman and Raemakers (2001) also believe that *Abies nordmanniana* may be a host as larvae were found in the soil beneath damaged trees.

In Britain, *O. dieckmanni* has been found on *Crataegus* (hawthorn), *Buddleia* (butterfly bush), *Iris*, and *Prunus avium* (sweet cherry) (Barclay, 2009).

Although the literature does not list *Olea europaea* (olive) as a host, it has been intercepted numerous times on this commodity in the United States from Mexico (Fedchock, 2007a; 2007b).

Known Vectors (or associated organisms)
This pest is not currently known to vector any pathogens or other associated organisms.

Known Distribution
This species was first described from Germany in 1979. This weevil is currently found in Germany, France, Sweden, the Netherlands, and Norway (Baez, 2008) as well as Denmark (Runge, 2008), and Austria (Schuh et al., 2009).

This weevil was originally identified as *O. setosulus* in Britain but has since been re-identified as *O. dieckmanni* (Barclay, 2009). The original distribution for this weevil is unknown, but Barclay (2009) suggests that it may be native to Italy because of the range of its close relatives. Barclay (2009) also believes that this pest occurs in other European countries where it has yet to be recorded.

Potential Distribution within the United States
No NAPPFAST risk or host map is currently available.

Pathway
This species has most likely moved to new areas through human activities such as the movement of infested host plant and potting medium through the nursery trade. This species may move through international trade as a hitchhiker pest. The genus *Otiorhynchus* has been intercepted over 300 times at U.S. ports, while *O. dieckmanni* has been intercepted 9 times, 8 of which were on olives (*Olea europaea*) from Mexico (AQAS, 2012; queried January 18, 2012).
Natural dispersal is limited to walking by adults, as they cannot fly.

**Survey**

**CAPS-Approved Method**: There is no attractant available for this pest. Passive traps, such as pan traps or pitfall traps, visual examination of foliage, or using a beat cloth are approved methods for this pest (Barclay, 2009; Dieckmann, 1980). Pitfall traps and pan traps should be placed in high risk areas near host plants. Beat cloths should be used on host plants.

Gospodar and Korge (1982) captured large numbers of the weevils in pitfall traps. This may be the most efficient survey method, depending on the environment.

**Literature-Based Methods**: This weevil has previously been collected by pan trapping and pitfall trapping (Barclay, 2009). In Britain, *O. dieckmanni* has been collected from March to August (Barclay, 2009).

Barclay (2009) believes that *O. dieckmanni* may be “more ground-living in its habits than most members of the genus, and thus less likely to be collected by beating, sweeping or casual examination of foliage,” similar to other species with spatulate front tibiae.

**Identification**

**CAPS-Approved Method**: Morphological. Identification must be confirmed by a Curculionidae specialist.

The *Otiorhynchus setulosus* group includes, besides *O. dieckmanni*, five species plus one subspecies. *Otiorhynchus dieckmanni* f. *berolinensis* is nomenclaturally unavailable. The species group (in the wide sense) and some species can be keyed out with Reitter (1912, p. 124) and all six included species with Magnano (1993, p. 129).

**Literature-Based Methods**: Recently a PCR-restriction fragment length polymorphism (RFLP) method for differentiating among 16 *Otiorhynchus* species (including *O. dieckmanni*) and 7 other weevil species was developed (Hirsch et al., 2010). The method may be useful to plant protection services for diagnostic purposes in the future because it is cost effective, robust, and fast (Hirsch et al., 2010).

*For the most up-to-date methods for survey and identification, see Approved Methods on the CAPS Resource and Collaboration Site, at http://caps.ceris.purdue.edu/**

**Easily Confused Pests**
Several *Otiorhynchus* species are found in North America. Warner and Negley (1976) provide a key for sixteen species believed to be present in the United States. *Otiorhynchus dieckmanni* comes out in couplet 2, under *O. cribricollis*, but can be distinguished from that species by the wider frons, which corresponds to the width of the dorso-medially raised section of the rostrum. The edges of this section are parallel in *O. dieckmanni* but converge towards the eyes in *O. cribricollis*.

Barclay (2009) states that *O. (Arammichnus) cribricollis* is superficially similar to *O. dieckmanni* but can be distinguished by the supplementary key couplets provided in Harrison (2008).

**References**


Other primary literature:


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