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SHORT COMMUNICATION

First record of *Stenodiplosis sorghicola* on sorghum in Greece

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ABSTRACT

In October 2007, the sorghum midge *Stenodiplosis sorghicola (*Coquillett) (Diptera: Cecidomyiidae) was recorded for the first time in Greece. Its occurrence was noticed in an experimental sorghum cultivar at Aliartos, near Athens, in Viotia region. Information on its morphology, biology and distribution is given.

Sweet sorghum, *Sorghum bicolor* (Fam. Poaceae), is one of the most important cereal crops in the world. In many developing countries it has been cultivated mainly as a food grain and in developed countries it is used mainly as fodder. In recent years in the U.S.A., grain sorghum has been used as an alternative to maize in bio-ethanol production, and intensive research is ongoing on production of second-generation bioethanol from sweet sorghum. In Greece, under the impact of the new European Common Agricultural Policy arrangements (traditional crops such as tobacco, cotton etc. have been reduced) and, given the lack of adequate irrigation resources, drought-resistant sorghum is a particularly promising new crop (Scarakis et al. 2008).

Up to date, sorghum pests in Greece are accordingly few, due to the very short time since this crop was introduced into cultivation. In general, they are insects previously recorded as pests on maize and cotton, such as the cotton bollworm (*Helicoverpa armigera*), the Mediterranean corn borer (*Sesamia nonagrioides*) and wireworms (*Agriotes* spp.) (Andreadis et al. 2007, Dimou et al. 2007, Danalatos and Archontoulis 2008).

The present study reports the first record of a new insect, pest of sorghum in Greece. Specifically, in October 3rd 2007, clusters of of *S. bicolor* flowers in an experimental field of the Agricultural University of Athens in Aliartos (Viotia region), were found to be infested by the sorghum midge *Stenodiplosis sorghicola* (Coquillett) [=*Contarinia sorghicola*] (Diptera: Cecidomyiidae) (Fig. 1). Identification of the specimen was made in the Laboratory of Agricultural Zoology & Entomology of Agricultural University of Athens, based on description of Harris (1979) and voucher of the specimen is deposited at the entomological collection of the above Laboratory.

The sorghum midge is probably the most widely distributed sorghum insect pest. It occurs in almost all regions of the world where *S. bicolor* is grown, except parts of Southeast Asia (Teetes 1988). In the Mediterranean region of Europe it has been previously recorded in southern France and northern Italy (Harris 1995).

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FIG. 1. *Sorghum bicolor* crop in the experimental field of the Agricultural University of Athens in Aliartos, Viotia.

The adult sorghum midge is a 1.3 – 1.6 mm-long, reddish fly, with brown antennae and legs, and gray membranous wings (Fig. 2, 3). It exists for only a day in the adult stage, during which each female lays about 50 cylindrical eggs, 0.1 to 0.4 mm long, between the glumes of flowering clusters of sorghum (Sharma et al. 1988). The hatching larvae are colorless and gradually become dark orange, when they are fully grown (Fig. 4).

FIG. 2. Adult of *S. sorghicola*.

At the end of the larval stage, they pupate between the glumes, while the pupal skin remains at the tip of the spikelet after adult emergence (Teetes et al. 1983, Teetes and Pendleton 2000). In U.S.A. a whole generation is completed in fourteen to sixteen days (Teetes 1988, Teetes and Pendleton 2000).

FIG. 3. Adult of *S. sorghicola*.

Sorghum midge larvae feed on the ovary, preventing kernel development and causing direct grain loss. Glumes of a sorghum midge-infested spikelet fit tightly together because no kernel develops (Fig. 5).

Regarding the host plants of the sorghum midge, *S. bicolor* is the main host worldwide. Nevertheless, it has also alternative hosts belong in the genus *Sorghum*, such as *S. sudanense, S. dochna, S. verticilliflorum,* and *S. halepense* (Sharma and Franzmann 2001).

FIG. 4. Larva of *S. sorghicola*.

FIG. 5. Sorghum spikelets damaged by *S. sorghicola*.

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Πρώτη καταγραφή του *Stenodiplosis sorghicola* σε σόργο στην Ελλάδα

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ΠΕΡΙΛΗΨΗ

Στην παρούσα εργασία γίνεται η πρώτη καταγραφή του είδους *Stenodiplosis sorghicola* (Coquillett) (Diptera: Cecidomyiidae), εχθρού του σόργου, στην Ελλάδα. Η παρουσία του είδους αυτού διαπιστώθηκε από δειγματοληψία που πρ32αγματοποιήθηκε τον Οκτώβριο του 2007 στον πειραματικό αγρό του Γεωπονικού Πανεπιστημίου Αθηνών, στον Αλίαρτο Βοιωτίας. Επίσης, δίδονται πληροφορίες σχετικά με τα μορφολογικά και βιολογικά χαρακτηριστικά, όπως και για την γεωγραφική εξάπλωση του εντόμου.