



DIAGNOSTIC OF PEPPER FRUIT FLY *ATHERIGONA ORIENTALIS* (SCHINER) (INSECTA: DIPTERA: MUSCIDAE) ON GREENHOUSE CROPS FROM THI-QAR PROVINCE (SOUTH OF IRAQ)

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Abstract

The pepper fruit fly *Atherigona orientalis* (Schiner) is collected for the first time from Thi-Qar province south of Iraq. Adult flies were collected from greenhouses of tomatoes, cucumber and eggplant crops in Al-Rifaae, AL-Shatra, AL-Gharaf farms.

Key words: pepper fruit fly, Thi-Qar, greenhouse, south of Iraq.

Introduction

The genus *Atherigona* Rondani, 1856 is widespread, and is one of the most speciose among world muscids with some 300 recognized and described species, of which 156 are recorded from the Afrotropical Region (Dike 2003; Couri *et al.*, 2006; Muller 2015). The genus comprises two subgenera, *Atherigona* s. str. and *Acritochaeta*.

Grimshaw, 1901, with 142 species of the former and 14 species of the latter in the Afrotropical fauna (Muller, 2015). *Atherigona orientalis* (Schiner) in general referred to as the pepper fruit fly or tomato fruit fly. in spite of its common names, not a true fruit fly in the family Tephritidae, but rather a member of the Muscidae, the same family to which the common house fly belongs. Pepper fruit fly is found in most tropical and subtropical areas of the world and is usually considered a secondary pest or “trash fly.” However it can sometimes be a major pest of certain economic crops, most notably plants in the family Solanaceae. the fly is highly polyphagous. Maggots are found on live and decaying plant material, feces, carrion, and even the live larvae of other insects including the tobacco caterpillar (*Spodoptera litura* Fabricius). It is known to lay eggs in oviposition sites of other insects, and it is suspected that the maggots of *Atherigona orientalis* feed on the maggots of *Bactrocera* spp. (Uchida *et al.*, 2006) and *Dacus* spp. (Skidmore, 1985) fruit flies.

Synonymy

Acritochaeta excisa Tomson

Acritochaeta orientalis (Schiner)

Atherigona excisa var. *flavipennis* Malloch

Coenosia excisa Tomson

Atherigona magnipalpis Stein

Atherigona trilineata Stein

Acritochaeta pulvinata Grimshaw

Materials and Methods

Muscid flies were captured in July –November 2019 at three sites from Thi-Qar farms (Table. 1).

Adults were trapped by entomological nets in greenhouses with crops of Tomatoes, cucumbers and eggplant. The maggots of fly were collected from infected crops, reared in laboratory until transform adults for identification.

Adult flies were preserved in 75% ethanol and transferred laboratory of biology department of Thi-Qar University.

The specimens were studied and photographed using Nikon camera installed on EZ4 binocular stereomicroscope.

Results and Discussion

A total of 33 muscid flies (13♂, 20♀) each identified as *A. orientalis* were captured at the three sites in Thi-

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Qar province.

Description

Male: (Fig. 1) Body 3-4mm long. Fronto- orbital plates dusted. Palpi orange to brown, ground color of thorax dark, except for postpronotal lobes and tip of scutellum orange- yellow. Scutellum yellowish – grey dusted on the darkened part. Disc of scutellum with 15-17 setulae. Ground color of abdomen yellow.. Fore femur and tibia mainly yellow, femur with a deep preapical dorsal excavation, followed by a bunch of short dark setulae.

Female: (Fig. 2) Fronto-orbital plates broader. Frontal vitta generally wholly orange-yellow. palpi usually brown on over apical half, the base is yellow. Fore femur dark brown narrowly to broadly yellow at base and at tip. tergite 3 and 4 with the spots usually small and not always reaching to fore margins. Fore femur not excavated. *A. orientalis* is highly polyphagous fly, its larvae feed and develop on live and decaying plant material, feces, carrion and even the live larvae of other insects including the tobacco caterpillar (Skidmore, 1985) and *Daccus* sp. (Uchida *et al.*, 2006). Ogbalu *et al.*, (2005) recorded that *A. orientalis* is a basic pest of bell pepper in Nigeria, The secondary host plant of *A. orientalis* include cucumber, carrot, beech, onion, egg-plant, wheat and maize are occasionally attacked by this fly. In Iraq the fly has been reported by Al-Ganabi (1981) as a major pest on Brassica oleracea in Karbala province. Fleih (2003) referred that the *A. orientalis* and *A. varis* (Meigen) represent 4% of average adult flies that have been collected from infected cucumber crop. The recent study was conducted for the first time on greenhouses crops of Thi-Qar province south of Iraq, the economic crops included tomatoes, cucumber, eggplant which have



FIG. 1: Male of *A. orientalis*, lateral view.



FIG. 2: Female of *A. orientalis* lateral view.

Table 1: Muscid flies collection details.

	Collection sites	Coordination	Collection date
1-	AL-Gharraf	31°18'34.251"N46°12'57.210"E	1-Jul.-2019
2-	AL- Rifae	31°37'41.104"N46°6'14.719"E	6-Oct.-2019
3-	AL-Shatra	31°31'21.760"N46°15'46.159"E	2-Nov.- 2019

been infected with maggots of *A. orientalis*.

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