



RESEARCH NOTE

Report on the occurrence of scolytid, *Coccotrypes dactyliperda* (Fabricius, 1801) on dates in Gujarat, India

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ABSTRACT: Field surveys conducted on the pest incidence of date palm during 2017-18, 2018-19 and 2019-2020 revealed a moderate to severe occurrence of date stone beetle, *Coccotrypes dactyliperda* (Fabricius) (Coleoptera: Curculionidae: Scolytinae) on immature date fruits in Kachchh (Nakhatrana) and Surendranagar (Dhangadhtra) districts of Gujarat. This is the first report of its occurrence on dates from Gujarat, India. Considering the significant area under date cultivation in the North West region of India, the pest needs to be monitored for its spread and kept under vigil. The diagnostics of the beetle, its damaging intensities along with distribution are presented in this paper.

Keywords: Date palm, Gujarat, Scolytid, beetle, pest report

Date palm (*Phoenix dactylifera* L.) is cultivated mostly in arid zone typically in desert environment. Most of the world's dates production comes from Middle East and the major date producing countries are Egypt, Iraq, Iran and Saudi Arabia. In India, it is an important fruit crop of North West arid region mainly in Gujarat, Rajasthan and Punjab with largest area in Kachchh district of Gujarat having 17600 ha area with a production of 180000 tonnes of fresh fruits (Anonymous, 2019). Date palm is vulnerable to several insect pests at both vegetative and fruiting stages. One hundred and twelve species of insect and mites have been reported worldwide on date palm (El-Shafie, 2012). Of these, the major insect pests are lesser date moth, *Batrachedra amydraula* Meyrick that causes around 50 – 75% losses, red palm weevil, *Rhynchophorus ferrugineus* Olivier, white scale, *Parlatoria blanchardi* Targ., red scale, *Phoenicococcus marlatti* Cockerell, mite, *Oligonychus afrasiaticus* McGregor, date stone beetle, *Coccotrypes dactyliperda* (Fabricius), rhinoceros beetle, *Oryctes rhinoceros* (L.), green pit scale, *Palmaspis phoenicis* (Green). However, in the coastal belt of Kachchh, Red palm weevil, rhinoceros beetle, date palm scale and mites (*Oligonychus tylos* and *Raoiella indica*) cause economic damage (Muralidharan, 1993; Muralidharan *et al.*, 2000 and Muralidharan *et al.*, 2020). Of late, the date stone beetle, *Coccotrypes dactyliperda* (Fabricius, 1801) has been found infesting date palm fruits in Gujarat region. So, surveillance and surveys have been carried out in date palm growing areas of Gujarat to assess the infestation and damage intensities.

Regular surveys were carried out in different date palm growing regions of Gujarat at fortnightly intervals during 2017-18, 2018-19 and 2019-2020 when the fruiting of date palm has started. During course of observations, it was found that green drupes were infested by a scolytid beetle in two locations viz., Nakhatrana and Surendranagar of Kachchh and Dhangadhtra districts, respectively. Sampling of twenty plants was done at random to document the per cent infestation and the damage intensities were assessed by per cent damage on fruit bunches visually and also per cent fruit droppings. The beetle was identified at ICAR - National Bureau of Agricultural Insect Resources, Bengaluru.

The beetle was identified and confirmed as *Coccotrypes dactyliperda* (Fabricius, 1801) (Coleoptera: Curculionidae: Scolytinae: Dryocoetini), which was originally endemic to the Middle East. Though it is commonly known as date stone beetle, it is also known as palm seed borer or button beetle. The infestation was mainly found on the green drupes of the date palm during first fortnight of April in all the three years. *Coccotrypes dactyliperda* was found to feed on the seeds especially on the albumen in the seeds (Spennemann, 2018). Characteristic round holes were observed on the *C. dactyliperda* infested fruits (Fig. 1), which was also reported by Blimberg and Kehat (1982). The infested fruits resulted in premature drop thus incurring huge loss to the grower. The fruit droppings were observed high in severe infested palms. The nitidulid beetles, *Carpophilus* sp. were found developing in the dropped and rotting dates, which in turn attack ripe fruit in late



Fig 1. Damage symptoms of beetle on green drupes

summer (Kehat *et al.*, 1976). Spennemann (2019) has reported that *C. dactyliperda* hibernates in adult stage inside the seed thus overwintering and emerge in spring. The pest incidence was noticed in the first fortnight of April and active till the end of the month in Dhangadhra village during 2017-18. The infestation occurred in the subsequent years too during same period (April). In Abohar region of the Punjab state, *C. dactyliperda* was reported to damage dates during June-July (Sohi and Batra, 1969).

The beetle damages the *kimri* stage fruits by piercing with its snout and the feeding habit leaves a specific puncture like marking on the fruits (Fig.1). The damaged fruits will dry, resulting in premature fruit dropping. The beetle infestation was 25 and 14 per cent in Nakhatrana (Kachchh) and Dhangdhtra (Surendranagar), respectively. The infestation was recorded only in these two pockets of Gujarat so far.

The genus *Coccotrypes* was established by Eichhoff (1878[1879]) and contains around 129 species worldwide (Wood and Bright in the catalogue, 1992). About 24 species are known to occur in India (Maiti and Saha, 2009).

Description: Small sized beetle, size ranging from 2.50 to 2.60 mm in length. The beetles are dark brown to black, body darker while the legs and antennae are paler. Body covered with abundant and erect hair-like setae. In antennae, scape is longer than the 5-segmented funicle and distal face of antennal club has two sutures. Frons convergently aciculate (appearing as if scratched by a needle); with a sparse, hair-like vestiture. Anterior margin

of the compound eye is emarginate. Pronotum convex, longer than wide, narrowed posteriorly with distinct asperites. Scutellum is small. Elytral stria punctures slightly larger, declivity is evenly convex extending over at least posterior 1/3 of elytra, unarmed; interstitial setae on declivity longer and setae almost twice as long as distance between rows. Procoxae contiguous, protibiae with 3-4 teeth on lateral margin.

Diagnosis: *Coccotrypes dactyliperda* closely resembles palm seed borer, *C. carpophagus* (Hornung), and the former species can be distinguished by larger stria and slightly deeper punctures, closer and larger interstitial granules, interstitial setae on declivity longer whereas *C. carpophagus* possesses slightly smaller and shallow stria punctures, widely placed and smaller interstitial granules and shorter interstitial setae on declivity (Maiti and Saha, 2009). *Coccotrypes* species have generally convex appearance and are hairy across the dorsal surface. *Coccotrypes* genus resemble *Dryocoetes* of Tribe Dryocoetini and the species of former can be distinguished by the aciculate frons and protibiae with 3-4 socketed teeth while the latter possesses 5 socketed teeth on protibiae.

Distribution: Bengal, Calcutta (Blanford, 1895); Punjab (Batra, 1972; Sohi & Batra, 1972); Uttarakhand (Roonwal, 1971); Uttar Pradesh (Beeson, 1939, Maiti & Saha, 2009); Bombay (South Kanara) (Beeson, 1939), Maharashtra (Maiti & Saha, 2009); Karnataka (Daniel & Kumar, 1979); Tamil Nadu (Rao & Janaki, 1953; Roonwal, 1971); Kerala (Daniel & Kumar, 1979; Nair & Oommen, 1968), now Kachchh, Gujarat.

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