RESEARCH NOTE

Outbreak of banana skipper, *Erionota torus* Evans (Lepidoptera: Hesperiidae) in southern India: Evidence of expanded geographic range

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ABSTRACT: This is the primary report on the occurrence of banana skipper, *Erionota torus* Evans (Lepidoptera: Hesperiidae) from several parts in South India causing extensive damage to banana foliage making in to leaf rolls. Earlier reports mentioned that *E. torus* is restricted to North eastern region of India and its current outbreaks in southern states indicate the expanded geographic range of the skipper species. This pest can potentially threaten the banana crop through direct damage and indirectly the fresh banana leaf trade.

**Keywords:** Banana, skipper, *Erionota torus*

Of late the banana growers across the southern states viz., Karnataka, Kerala, and Andhra Pradesh are baffled with an unprecedented defoliation caused by the soft bodied caterpillars of a butterfly which was hitherto unheard in this part of the country. The butterfly, identified as skipper, *Erionota torus* Evans (Lepidoptera: Hesperiidae) and commonly called ‘Sikkim Palm dart’, ‘Sikkim palm-redeye’ or ‘Rounded banana skipper’, has been wreaking havoc in banana fields causing serious foliar damage. Generally banana is not considered as a preferred host of lepidopteran defoliators with an exception of tobacco caterpillar, *Spodoptera litura* Fab. (Lepidoptera: Noctuidae) that usually infests during early crop growth stages. Therefore, the plant protection spray schedules during mid to late crop growth stages in banana involve mainly fungicides and nutrients as usually diseases and nutrient disorders remain of particular concern in several banana growing regions. Nevertheless, the outbreak of *E. torus* has brought to fore a change in the pest complex of banana. It is also known as banana leaf roller as the caterpillar typically cuts the leaves at the edges and makes a series of cylindrical rolls before metamorphosing in to pupa and then to a butterfly. Heavy infestation can damage the whole banana leaf, leaving only the midrib intact. Usually, banana plants can tolerate up to 20% defoliation (Anonymous, 2009). However, severe defoliation saving only the midrib can cause considerable reduction in photosynthetic efficiency of plant resulting in a decreased bunch size and weight. These butterflies are also known to infest palms occasionally (Raju et al., 2015). It is quite often being confused with *E. thrax*. The two species can be distinguished only by the wing variations (straight outer margin and acute apex of the forewing in *E. thrax*, and the more convex outer margin and rounded apex of the forewing in *E. torus*) and differences in male genitalia (Evans, 1949; Raju et al., 2015).

*Erionota torus* was initially described by Evans in 1941 and the earlier geographical distribution records show that this butterfly was originally reported from Southeast Asia and widely distributed in Northeast India (Sikkim), Myanmar, Thailand, Laos, Malaysia, China, Vietnam, Taiwan and Singapore. In India, this species was described from Sikkim and is historically known from the Himalaya east and southeast ward (Raju et al., 2015). Thus, it is only known as a pest in north-east India and the current outbreaks in South India (Karnataka, Kerala, Tamilnadu, Maharashtra, Andhra Pradesh) may be due to the absence of insecticidal applications on to foliage during mid and late crop growth stages coupled with low prevalence of natural enemies and possible climate shifts that would have helped the banana skipper populations to reach damaging thresholds (Raju et al., 2015). Further, the current changing climate scenarios would have helped *E. torus* to extend its range towards South confirming geographic expansion.
Examination of egg masses (n=35) collected from experimental orchards of ICAR - Indian Institute of Horticultural Research (IIHR), Bengaluru (12°58’N; 77°35’E) revealed that the female butterfly laid conspicuous eggs mostly on the underside of leaves (91.43%) in groups (94.29%). In a few incidences, egg laying was also noticed on upper surface of the leaf (5.71%). However, Chiang (1988) observed that *E. torus* laid most of the eggs singly (70%) compared to groups (30%). Each egg mass contained on an average of 10.80±0.96 eggs (Range: 1-22 eggs). Freshly laid eggs were pinkish red in colour and changed to creamy white before hatching. The neonate larva was pale green and clothed with short, silky hairs sparsely. The head was black, and heart-shaped in frontal view. As in all hesperid larvae, there was a conspicuous ‘neck’. The thorax directly behind the head and is much narrower compared to the head. The larva soon covered with a white, waxy powder and the fully-grown white powder-coated caterpillar reaches a length of about 4-6 cm and pupated in the leaf rolls itself in a typical chrysalis cocoon form. The slender pupa is yellow-brown and covered with the same waxy powder as the larva and has a long proboscis that reaches to the tip of the abdomen and is free from where it leaves the wing sheaths. The adult butterfly that

Fig. 1. Banana skipper, *E. torus* freshly laid eggs (a); eggs nearing larval emergence (b); hatched eggs (c); neonate larva (d); early and late instar larvae (e-g); pre pupa and pupa (h-i); adult butterfly (j); banana leaf with leaf rolls at the edge (k); cylindrical leaf roll (l); completely defoliated banana leaf leaving midrib
emerges from the cocoon is brown in colour with conspicuous pale yellow, semi-hyaline spots on the fore wings (Fig.1). Understanding the behavioural aspects of this butterfly and a search for locally occurring indigenous parasitoids and their inundative releases will bring back the equilibrium of pest with the host plant and keep it under check. Studies on the population genetics will also help to understand the distribution, genetic composition and adaptation in biological populations of *E. torus*.

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REFERENCES


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