

Record of coccinellid, *Scymnus* sp. (Coleoptera: Coccinellidae) predating on red spider mite (*Tetranychus urticae* Koch.) in okra, *Abelmoschus esculentus* (L.) Moench in middle Gujarat

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Okra [*Abelmoschus esculentus* (L.) Moench] is a commercial vegetable crop that belongs to family Malvaceae. It originates from Ethiopia and is widely spread all over the tropical, subtropical and warm temperate regions of the world. It plays an important role in the human diet and it is a good source of protein, carbohydrates, vitamins, calcium, potassium, enzymes and total minerals which are often lacking in the diet of developing country. Its medicinal value has also been reported in curing ulcers and relief from haemorrhoids (Singh *et al.*, 2014). Among the insect pests infesting okra crop, red spider mite, *Tetranychus urticae* Koch. causes heavy damage. The highest population (7.56/leaf) was found during 42nd standard meteorological week (first week of October) during the post *kharif* crop. The incidence of mite population always remained higher on the upper canopy of the plant (Ghosh, 2013).

During the course of study in okra ecosystem at Anand Agricultural University, Anand campus, Anand, a *Scymnus* sp. (Coleoptera: Coccinellidae) beetles were found on okra with *T. urticae* colony during the later crop growth stage *i.e.* 2nd week of October, 2014 for the first time in Gujarat (India). It was found 3 to 5 larva, 4 to 5 pupae and 2 to 3 adults per leaf, respectively in the field. The population confined mostly on upper and middle canopy of the plant. In its natural habitat, as soon the population of red spider mite starts, immediately after one week the population of predatory beetles and grubs also starts colonized. This information may be useful for utilizing nontoxic components for the management of red spider mite. The periodic development of *Scymnus* sp. was also observe by collecting the larvae from the field and brought to the laboratory for further rearing under optimum condition. The larva are of slight orange and pupa are black in colour. On critical observation, elytra remain slight orange to brown in colour for 6-7 hours of adult emergence. Later on, elytra become completely black in colour and the adult beetles are too small than the other coccinellids. This is the unique characteristic for the detail morphological and

systemic studies of coccinellids. Barthakur (2011) reported a significant role of *Scymnus* sp. in managing the red spider mite (*Oligonychus coffeae* Nietner), scarlet mite (*Brevipalpus phoenicis* Geijskes), pink mite (*Acaphylla theae* Watt) and purple mite (*Calacarus carinatus* Green) in tea ecosystem in Tocklai Experimental Station, Assam (India). Magagula and Samways (2001) maintained a record of ladybeetle diversity across a heterogeneous African agriculture / savanna land mosaic and reported that some species such as the *Cheilomenes lunata* and indigenous *Scymnus* sp. and *Nephus* sp. as widely dispersed.

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Plate 1-Life stages of *Scymnus* sp.



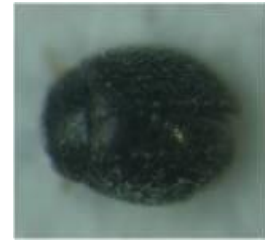
Grub



Pupa



Adult



***Scymnus* sp. feeding on mite (*T. urticae*)**



Mite infesting okra