FIRST RECORD OF KUDZU BUG, *Megacopta cribraria* (FABRICIUS) (HEMIPTERA: PLATASPIDAE) ON PIGEONPEA (*Cajanus cajan* L.) IN MIDDLE GUJARAT, INDIA

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ABSTRACT

Pigeonpea is an important pulse crop in India. During the regular survey and surveillance of insect pests in pigeonpea ecosystem, bug, Megacopta cribraria (Fabricius) (Heteroptera: Plataspidae) commonly known as kudzu bug or bean plataspid was observed first time in the middle Gujarat on stem of pigeonpea during November-December, 2016 around Anand Agricultural University campus and nearby villages. The collected insects were sent to Principal Investigator, ICAR Network Project on Insect Biosystematics, Department of Entomology, GKVK, Bangalore for identification.

KEY WORDS: **Kudzu bug, Hemiptera, Plataspidae,**

INTRODUCTION

Pigeonpea is an important pulse crop in India. It is also known as Red gram, Arhar and Tur. India is the largest producer and consumer of pigeonpea in the world. Pigeonpea contributed about 20 per cent of the total production of pulses in the country. India leads the world in pigeonpea production followed by Burma, Malawi, Kenya, Tanzania, Haiti, etc. (Anonymous, 2016a). In India, the lea ding states of pigeonpea cultivation are Maharashtra, Madhya Pradesh, Karnataka, Uttar Pradesh, Gujarat, Andhra Pradesh, etc. (Anonymous, 2016b). In India and Gujarat, pigeonpea is cultivated in 3.39 and 0.27 million hectares of area, which 2.27 and 0.26 million tons of production, respectively (Anonymous, 2016b). Several insect have been recorded as pests on pigeonpea in India (Lateef and Reed, 1983; Shanower *et al.*, 1999; Srilaxmi and Paul, 2010), but only few of them cause an economic loss and called as major pests. Among them, pod borer; *Helicoverpa armigera* (Hubner) Hardwick, pod fly; *Melanagromyza obtusa* Mall, legume pod borer; *Maruca vitrata* (Geyer), plume moth; *Exelastis atomosa* (Walsingham), pod bug; *Clavigralla gibbosa* (Spinola); mite, *Aceria cajani*; etc. are causes the serious damage (Anonymous, 2009). Recent past, numbers of insect pests were success to extent their host plant may be due to the climate change, food competition, introduction of new crops, crop sequences, changing cultivar practices, change in plant protection, etc. Therefore, continue

monitoring is required to know about pest abundance and status regularly.

MATERIAL AND METHODS

At Anand Agricultural University campus and nearby villages, pigeonpea crop was cultivated in large scale. A regular survey of insect pests infesting pigeonpea was carried out during November-December, 2016. During the survey and surveillance, unknown numbers of bugs congregated and feeding on plants were observed. Few specimens from the some of the locations were collected and preserved. The preserved bugs were sent for identification to ICAR Network Project on Insect Biosystematics, Department of Entomology, GKVK, Bangalore.

RESULTS AND DISCUSSION

During the regular survey and surveillance of insect pests in pigeonpea ecosystem, bug, *Megacopta cribraria* (Fabricius) (Heteroptera: Plataspidae) commonly known as kudzu bug or bean plataspid was observed first time in the middle Gujarat on stem of pigeonpea during November-December, 2016 around Anand Agricultural University campus and nearby villages. Borah *et al.* (2002) also described the adult and nymph of *M. cribraria* distributed in pigeonpea crop in Assam (India). Suiter *et al.* (2010) noticed the *M. cribraria* became a serious pest in soybean crop. *M. cribraria* is an old world pest of legumes in Asia. Blount *et al.* (2015) studied the host preference of *M. cribraria* on selected edible beans and soybean under choice and no-choice condition and reported that legume crops especially soybean, edamame, and pigeonpea found to be suitable developmental hosts. *M. cribraria* was reported by Gardener *et al.* (2013) in 9 counties in Southeastern Georgia (USA) with the host range of 33 plant species including 17 species of leguminoceae family.

Eger *et al.* (2010) studied on biology of *M. cribraria* and observed that the adults are small (3.5–6 mm) with a rounded oblong shape and live from 23 to 77 days. The dorsal side of the insect is covered with numerous dark punctation and is typically light brown to olive green in colour. It has five nymphal instars. Each nymphal instar takes 2 to 56 days to develop. Nymphs have a hairy appearance and vary in colour, but tend to be pale orange, olive green or light brown. Eggs tend to be a pale salmon colour with dark bands intermediately spaced in a horizontal direction. Each egg mass possesses 26 to 274 eggs. Along with the eggs, females also deposit dark capsules underneath the eggs. These dark capsules are filled with endosymbionts (bacteria) that immature insects consume for nutritional development.

In its native habitat, there are up to three generations of the bean plataspid or kudzu bug per year (Eger *et al.*, 2010; Halbert and Eger, 2010). The insect colonizes from April to July, forming large mating aggregations and continues to be present until October. However, the bean plataspid may be active in warmer climates (Eger *et al.*, 2010). As they go through reproductive diapause, adults overwinter on nearby buildings and structures, leaf litter or under the bark of trees.

At University campus and nearby villages, pigeonpea crop was cultivated in large scale. Maximum abundance of kudzu bug, *M. cribraria* was noticed during vegetative to flowering period. Approximately, 10 to 15 bugs per plant were observed in sporadic form causing damage to the pigeonpea plant (Figure 1 and 2). In its native regions, *M. cribraria* is not an

agricultural pest. However, in the United States, the bean plataspid is reported to be a pest of soybean in Georgia and South Carolina. The nymphs and adults congregate in higher numbers and feed on the underside of leaves and on the stem of the legume plants and results in abnormal pod development and appeared necrotic areas on the plant (Gardener *et. al.*, 2013; Poplin and Hodges, 2016).

Adult populations within the United States reported to overwinter on light coloured structures, in leaf litter and underneath the bark of trees. These insects are attracted to light colour surfaces, predominately white and yellow (Horn and Hanula, 2011). Also, like stink bugs, adults tend to excrete an odor as a defense mechanism when disturbed. The defense chemical of these insects may stain the surface of the house, building or vehicle where aggregation occurs.

CONCLUSION

The bug, *Megacopta cribraria* (Fabricius) (Heteroptera: Plataspidae) commonly known as kudzu bug or bean plataspid was observed first time in the middle Gujarat feeding on pigeonpea crop. As such, it was the first report in middle Gujarat.

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Fig. 1: M. cribraria on pigeonpea

Fig. 2: General view of M. cribraria

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