

FIRST RECORD OF WEEVIL, *Crytozemia dispar* PASC. [COLEOPTERA: CURCULIONIDAE] ON PAPAYA (*Carica papaya* L.) IN MIDDLE GUJARAT, (INDIA)

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ABSTRACT

*Papaya is one of the important tropical fruit having commercial importance because of its high nutritive and medicinal value. During the regular survey and surveillance of insect pests in papaya ecosystem, weevil, *Crytozemia dispar* Pasc. (Entiminae: Curculionidae: Coleoptera) was observed first time in middle Gujarat. These weevils were appeared on flowers during August - September, 2016 on papaya cultivated in different farmer's fields around Shihora village of Kapadvanj taluka of Kheda district in middle Gujarat. The collected insects were sent to Principal Investigator, Division of Insect Systematics, National Bureau of Agricultural Insect Resources, ICAR, Bengaluru for identification and reported first time in middle Gujarat in papaya.*

KEY WORDS: *Crytozemia dispar*, papaya, weevil

INTRODUCTION

Papaya is one of the important tropical fruit having commercial importance because of its high nutritive and medicinal value. Papaya is originated of South Mexico and Costa Rica. Total annual world production is estimated about 6 million ton. India leads the world in papaya production with an annual output of about 3 million tons (Anonymous, 2016a). Other leading producers are Brazil, Mexico, Nigeria, Indonesia, China, Peru, Thailand and Philippines. In India, the leading states of papaya cultivation are Andhra Pradesh, Kerala, Gujarat, Chhattisgarh, Assam, etc. In India and Gujarat, the crop is cultivated in 95600 and 15300 hectares, which produced 3913.6 and

832.9 million tones, respectively (Anonymous, 2016b). Among the insect pests, papaya mealybug, *Paracoccus marginatus* Williams; whitefly, *Bemisia tabaci* Gennadius; aphid, *Myzus persicae* (Sulzer); red spider mite, *Tetranychus urticae* Koch; fruit fly, *Toxotrypana curvicauda* Gerstaecker; grasshopper, *Poeciloceris pictus* Fabricius; etc. are major insects and causes the serious damage (Anonymous, 2016c). Recent past, number 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 in cultivation practices, change in plant protection methods, etc. Therefore, continue monitoring is required to see

the pest abundance and status regularly.

MATERIAL AND METHODS

At Sihora village of Kapadvanj taluka, papaya crop is cultivated in large scale. A regular survey of insect pests infesting papaya was carried out during 2016. During the survey and surveillance, unknown weevil were observed and congregated on plants. These weevils found feeding on papaya plants. Few specimens from the same location were collected and preserved. The preserve weevils were sent for identification to Principal Investigator, Division of Insect Systematics, National Bureau of Agricultural Insect Resources, ICAR, Bengaluru. On the identification report, it was observed for the first time in middle Gujarat on papaya crop.

RESULTS AND DISCUSSION

During the regular survey and surveillance of insect pests in papaya ecosystem, weevils, *Crytozemia dispar* Pasc. (Entiminae: Curculionidae: Coleoptera) was observed first time in middle Gujarat. These weevils were appeared on flowers during August - September, 2016 on papaya cultivated in different farmer's fields around Shihora village of Kapadvanj taluka of Kheda district in middle Gujarat. Patel and Sahay (1966) noticed the occurrence of *Crytozemia* weevil from cotton fields in Gujarat and appeared in large numbers in a sporadic form during vegetative growth and disappeared after the pre-flowering stage. Kazmi and Ramamurthy (2004) reported 99 species belonging to 60 genera under 13 families of coleopteran pests including *C. dispar* from Jodhpur, Jalore, Barmer and Ganganagar in Rajasthan. Weevil, *C. dispar* was reported as sporadic pest in some of the medicinal crops, viz., Shankhapushpi, *Convolvulus*

microphyllus Sied; Kalmegh, *Andrographis paniculata* (Burn.f.) Wall (Anonymous, 2013a) and Safed musili, *Chlorophytum borivillianum* L. (Anonymous, 2013b).

Adult of *C. dispar* was brown or dark brown in colour with whitish stripes on both the lateral side of thorax and abdomen (Plate 1). The adult weevils are about 3 to 4 mm long and 2 mm broad and had geniculate antennae (Patel and Sahay, 1966). It was observed that the rainy atmosphere was more favourable for the multiplication of this pest. Eggs are laid singly ranged from 15 to 30 in circle. The eggs are black in colour and wart-like shaped.

In Shihora village, around 50 hectares of papaya crop was cultivated and most of the farmer grown a Taiwan cultivar. Generally, reproductive stage was coming up during August-September. At this time, maximum abundance of weevil, *C. dispar* was noticed. Approximately, 20 to 25 weevils per plant were observed in most of the papaya fields and caused serious damage to the papaya flowers (Plate 2 to 4). Weevils start feeding from tip of flowers resulting in brown to dark brown in colour. They also damage at base of petals and infested petals become coiled and showed outward curling (Plate 5). In later stage, flowers turn dried off and fall down from the base (Plate 6). Due to feeding of weevils, oozing material is observed on the stem which attract the ants and other insects. Patel and Sahay (1966) also reported that adults of this insect start feeding on leaves firstly from the leaf margins and then cut irregular holes on leaves of cotton.

CONCLUSION

The papaya weevil, *Crytozemia dispar* Pasc. (Coleoptera: Curculionidae) was observed first time

in the middle Gujarat feeding on papaya crop. As such, it was the first report in middle Gujarat.

ACKNOWLEDGEMENT

We are sincerely thankful to the Dr. G. Mahendiran, Scientist (Agricultural Entomology), Division of Insect Systematics, National Bureau of Agricultural Insect Resources, ICAR, Bengaluru for identification of this insect.

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Plate 1: Weevil, C. dispar



Plate 2: Congregating of beetles on flowers and petals



Plate 3: Weevil feeding on flowers



Plate 4: Infested part of plant

[MS received: January 28, 2017]



Plate 5: Brown and curled petals



Plate 6 : Shedding of flowers

[MS accepted: February 09, 2017]