International Journal of Agricultural Science
and Research (IJASR)
ISSN 2250-0057
Vol. 3, Issue 2, Jun 2013, 89-92

CHRYSOCORIS STOLLI WOLF, A SAP FEEDER PENTATOMID BUG ON THE WEED IN NORTH WESTERN DISTRICTS OF U.P.

PRAVESH KUMAR[1] & S. C DHIMAN[2]

[1]Baba Fride Institute of Technology, Suddhowala, Deharadun, Uttarakhand, India

[2]Entomology Research Lab, Department of Zoology, M.S. (P.G.) College, Saharanpur, Uttar Pradesh, India

ABSTRACT

Chrysocoris stolli Wolf is a polyphagous phytosuccivorus bug, infests ***Cassia occidentalies***, ***Croton sparisiflorum***. The population feeds on leaves, seeds and inflorescence. The bug first probes suitable feeding site with the aid of sensory setae of the rostrum and then piercing is done by styletes and when feeding is over the bug withdraws its styletes and either move away from the feeding site or remained in near by vicinity.

After feeding, rostrum and antenna are cleaned by antenna nd rostrum cleaner device named by Dhiman and Dhiman (1885). The ***C.stolli*** occurs actively during March to October and hibernates from November to February. The number of adults as well as nymphs reaches on peak in September. In mid October the older nymphs 4th and 5th instars prepare for quick feeding and moulting to become adults. Seasonal occurrence of ***C.stolli*** was observed in relation to host plants and abiotic factors.

KEYWORDS: C. stolli, Weed, Feeding, Seasonal Occurrencec

INTRODUCTION

Pentatomid bug are often injurious to agricultural crops and horticultural trees of economic value.By their desapping habit these cause extensive damage and yield of crop is reduced ***C. stolli*** (Heteroptera Pentatomidae Scutellerinae) is a polyphagous succivorous bug of this family which has beautiful coloration (metalic green or blue with black spot) and cause considerable damage to the weed such as ***Cassia occidentalies*** and ***Croton sparisiflorum*** at Saharanpur. On this insect only few studies have been carried in this region by, Dhiman and Kumar (2005, 06, 07 08,2013) In this paper an endeavor has been made to study this bug in relation to the weed which is abudently found in North Western districts of U.P. including Saharanpur.

Food Plant Croton Sparisiflorum of C. Stolli

First Nymphal Instras of C. Stolli

MATERIAL AND METHOD

Population of bugs was maintained in laboratory on the caged potted plants of ***Cassia occidentalies*** and ***Croton sparisiflorum***. Damage caused by the feeding on the weed ***Cassia occidentalies*** and ***Croton sparisiflorum*** was investigated is lab as well as in field conditions. For this a definite number of bug was released on healthy botted caged plants and nature and extent of damage was recorded. Feeding behavior was also noted in reflected light under binocular, microscope on the leaf of ***Cassia occidentalies***. Piercing and sucking behavior was keenly observed. Seasonal occurrence of ***C. stolli*** was observed in field at Saharanpur.

RESULTS AND DISCUSSIONS

Chrysocoris stolli is a polyphagous phytosuccivorous bug found infesting ***Cassia occidentalies*** and ***Croton sparisiflorum*** at Saharanpur. Adults and nymphs feed on the leaves, seeds and inflorescence of these food plants. During orientation toward food both the antennae perform up and down movements. The sensory setae present on the terminal segment take active part in the olfaction.

The rostrum also attain erected position while moving in search of food. In case of the nymphal instars, second and third instars directly move towards food, while fourth and fifth took a looping path to reach to the food. Shorter loops were taken by fourth and fifth instars in comparison to adults. After approaching food source the bugs first probe suitable feeding site with the aid of sensory setae of the rostrum and then piercing is done by maxillary and madibular stylets.

When feeding is over the bugs with draws the stylets and either move away from the feeding site or remain in nearby vicinity. After feeding rostrum and antennae are cleaned by antennae and rostrum cleaner device named by Dhiman and Dhiman (1985). The device is situated at the inner side of prothoracic tibial extremely. Combing is done several times either by one or both cleaning device on the rostrum and antennae, to get rid of foreign matter; It was further no tied that after feeding, second and third instars move towards water dipped cotton swab kept in petridish. ***Chrysocoris stolli*** occurs during the particular season of the year on its food plants and during adverse condition, it does not found in nature. Hence, during this period where this graceful bug goes, it was extensively searched and found that this insect undergoes for hibernation in winter. During winter months late November to mid February, ***C. stolli*** hibernates in adults stage to pass adverse cold climate in dormant stage only.

The late nymphal stage wait for their final moults in November and moulted imagoes then under go for hibernation. However, eggs and nymphal stage do not enter for hibernation. These stage perish in late November if present in nature. Main hibernating site were observed as crevices of tree trunk, under side of bark holes in soil, under debris,

stones, stacked bricks, fallen leaves and even in the crevices and cracks of wall of the houses, old crumbling building. Forts etc. As soon as summer is approached during late February hibernation is broken due to rise in field temperature and the bug population comes out in open field on host plants. During summer, though the bug population do not aestivate but it shift to the under side of host plants leaves or on the host plant situated in shadow areas to save themselves from the direct exposure to the scorching sun heat. younger nymphs congregate on the ventral leaf surface. At Saharanpur the weed ***Croton sparisiflorum*** and ***Cassia occidentalies*** occur in good number barren lands. On road side and even in agricultural lands. On these wildly grown plants ***C.stolli*** occurs and food during late Feb, to mid of November and actively desap the leaves and inflorescence content. Though, one or two bugs do not cause any visible damage to the plant but more than five bugs and gregarious feeding by nymphal instars inflict good damage to the plants. In Saharanpur medical report of the examination of the children affected by brain fever mentioned. The cause eating of the seed of ***Cassia occidentalies*** by the patients. Hence, doctors recommended removals of ***Cassia occidentalies*** plants from the field but it need a lot of man power. Hence, release of ***C.stolli*** in field after multiplication may serve the purpose to some extent.

Food Plant (Bajra) Pennisetum Typhoides of C. Stooli

Food Plant Cassia Occidentalies of C. Stolli

Chrysocoris Stolli in Copulation

ACKNOWLEDGEMENTS

The authors are thankful to the Principal and head department of Zoology M.S.(P.G.) College Saharanpur for providing laboratory facilities.

REFFERENCES

1. Dhiman S.C. and Kumar. P., 2005. Food plants and seasonal occurrence of ***Chrysocoris stolli*** Wolf. (Heteroptera-Pentatomidae- Scutellerinae). VI National symposium on Indian Entomology, Productivity and Health (A silver jubilee celebration), October 2-4, 2005. Abstract 70; page 60. held at Haridwar by the Uttar Pradesh Zoological Society Muzaffarnagar 251001 (India).
2. Dhiman, S.C. and Kumar, P, 2006. Oviposition, fecundity and egg structure of ***Chrysocoris stolli*** Wolf. (Heteroptera-Pentatomidae-Scutellerinae). National symposium on Role of Applied Zoology in food Production and Human Health. (A Golden jubilec celebration) 23rd and 24th December 2006, Abstract IP 10; page 43. held at Department of Zoology M.S. (P.G.) College, Saharanpur - 247001, India.
3. Dhiman S.C. and Kumar P, 2007a. Some ethologcal aspect of ***Chrysocoris stolli*** Wolf. (Heteroptera-Pentatomiae-Scutellernae). AZRA, National conference on Applied zoology and sutainable development 13th – 14th July 2007 held at Indian Institute of Chemical Technology, Hydrabad. 500007. India, Abstract No. 018 page, 32.
4. Dhiman, S.C. and Kumar. P, 2007b. Copulatery behaviour of ***C.stolli*** Wolf. (Hepteroptera-Pentatomid-Scutellerinae). A polyphagous pest. National Seminar on threat Global warming to global warming (Sponsared by U.G.C. and C.S.I.R.). 31-03-07. Abstract 28 page 81-82. held at department of Zoology K.L.D.A.V. (P.G.) College, Roorkee, India (U.K.).
5. Dhiman, S.C. and Kumar, P. 2007c. Biocontrol agent of ***Chrysocoris stolli*** Wolf and their biocont efficacy National seminar on Ailing earth and health Threats. (sponsared by U.G.C. and U.P.C.S.T.) 19th and 20th December 2007. Abstract No. 34; page 89 held at department of Zoology D.N. (P.G.) college (B++ NAAC ACCREDITED) Meerut (U.P.)
6. Dhiman, S.C. and Dhiman, R.C. 1985. On the antennae and rostrum cleaner of ***Leptocorisa varicornis*** Fabr. Bull. Ent. 26 (11), 92-93.
7. Kumar, P. and Dhiman S.C (2013) oviposition fecundity and egg structure of chrysocoris stoli wolf (Heteroptera-Pentatomidae-Scutellernae) international journal of zoology and research. 3(1), 27-34.
8. Kumar, P. and Dhiman S.C (2013) bio-control agent of chrysocoris stoli wolf (Heteroptera-Pentatomidae) Research journal of pharmaceutical biological and chemical sciences. 4(1), 958-963.