

SEASONAL ABUNDANCE OF WEEVILS *MYLLOCERUS* SPP. ON MULBERRY IN KOLHAPUR REGION

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Abstract: Mulberry *Morus alba* is very important food of Silkworm *Bombyx mori*. L (Bombycidae: Lepidoptera). Healthy and lustery leaves are the need of Silkworm for rearing them for cocoon production. Therefore, seasonal abundance of weevils *Myloccerus discolar* and *M.viridanus* have been reported on mulberry garden. Both species were found on mulberry throughout the year but they were abundant from July to October. The adults were found feeding on tender leaves, buds and grubs on roots of mulberry.

Keywords: Weevils *Myloccerus* spp., Seasonal abundance, Mulberry, Kolhapur.

Introduction

Several weevils (Coeleoptera: Curculionidae) are visualized as pests of agricultural crop which damage fruits, seeds and leaves of crops and also grains. More than 85,000 species of weevils belonging to 4144 genera have been reported from the different parts of the world (O'Brien & Wibmer 1978). They are mainly associated with cereal, pulse, vegetable, plantation, fruit, ornamental and forest crops. Some weevils are biocontrol agents other have medicinal importance and some have nutritional value (Marshall, 1916).

Review of literature indicates that ecological seasonal abundance of weevils has been studied by several workers. Note worthy amongst them refer to Marshall (1916), Ayyar & Ramakrishna (1922), Das (1944), Atwal (1963), Bhatti & Singh (1964), Stebbing (1977), Kushwaha & Sharma (1980), Ramamurthy & Ghai (1988), Pajani & Kohli (1990), Tara *et al* (2010) and Sathe (2009,2012) etc.

Mulberry is soul of sericulture business since, the leaves of which are feed to mulberry silk worm *Bombyx mori* L. for cocoon production and further silk fabrication. The weevils cause severe damage to mulberry. Hence, their seasonal abundance becomes important part of pest management.

Kolhapur district of Maharashtra is agriculturally and faunastically very rich and located at 531 m altitude and 16.6990⁰ N, 17.2281⁰E latitude and have great potential for sericulture

Received Dec 07, 2013 * Published February 2, 2014 * www.ijset.net

business. However, very little attention is paid from this region on ecology and seasonal abundance of weevils. Hence, present work was under taken.

Materials and Methods

Survey of weevils has been carried out by visiting mulberry gardens located in Shivaji University, Kolhapur and other spots namely Ajara, Gadhinglaj, Hatkanagale and Shirol. The study spot selection was on climatic conditions. The seasonal abundance was studied by collecting weevils for one man one hour swept net collection method from various mulberry ecosystem at 15 days interval during the years 2010-2013 at morning hours 07:00 am to 08:00 am. The collected material was time being kept in the polythene bags later, brought to the laboratory for further studies. Host records were prepared by taking into account of weevil damage to the crop plant. Occurrence of weevils was studied by keeping watch on them and nothing damage to crop plants by collecting them and one man one hour search method throughout the year.

Results

Results recorded in table1 indicate that both weevils were from the family, Curculionidae. The weevils recorded in table1 were abundant in monsoon season from July to October.they were moderate from February to June and was low from the November to January. *Myllocerus discolor* and *Viridanus* were found throughout the year feeding Mulberry leaves. Most of the weevils were collected from tender parts of the crop. Both adult and grub were destructive to Mulberry. The bark and wood were neatly cut around the stem or branches leaving clear girdle. The portion above the girdle gradually wilt and plant died. The pest completed its life cycle within 7 to 8 months.

Seasonal Abundance of Weevils *Myllocerus* spp on Mulberry in Kolhapur during the year 2010-2013

Species	Months											
	Jan	Feb	Mar	Apr	Ma y	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>M.discolar</i>	+	++	++	++	++	++	+++	+++	+++	+++	+	+
<i>M.viridanus</i>	+	++	++	++	+++	+++	+++	+++	+++	+++	+	+

+ = LOW ABUNDANT , ++ =MODERATE ABUNDANT, +++ = MOST ABUNDANT

*M. viridanus**M. discolor*

Discussions

Bhatti & Singh (1964) studied the bionomics of a weevil *T. indicus* from Punjab and Haryana in paddy fields. According to them this species was widely distributed in Indian subcontinent as sporadic pest of wheat, barley, gram and mustard. Adult weevils cut the germinating seedlings at the ground level and feed on leaves and tender shoots of above crops. In Maharashtra, *T. indicus* occurred from June to December on paddy crop. Only one generation was found and adults emerge from diapausing stages in the months of June to July. Similar situation was noticed by Bhatti & Singh (1964) in North India.

According to Atwal (1963) the mango weevil *S. mangiferae* was widely distributed throughout the tropics as a pest of mango. As per the present work, this species was quite abundant in Kolhapur district which occurred as soon as the formation of mango fruits were started and formed attacking hybrid and “Hapus” varieties. Although it is not a very serious in any part of the country (Atwal, 1973), it caused severe damage to the crop of Kolhapur district. Mango varieties such as Hapus, Ratnagiri and other hybrids were attacked badly. Fruits always get spoiled when weevils make an exit to the ripe or near-ripe mangoes. Only one generation was noticed during a single year. The weevil became inactive from July to August onwards till mango fruits formed *M. undecimpunctulatus maculosus* was found mostly from July to September on *Hibiscus rosa sinensis*, Dev kapus – *Gossypium arborcum* L and American cotton *G. hirsutus* L. It was also recorded on crops such as maize, bajara, Sorghum, guava, red gram and groundnut from Kolhapur district. Adult weevil damaged leaves, buds, flowers and young bolls of the crops. Sathe (1998) recorded 3 species of *Myloccerus* feeding on mulberry in Maharashtra. The same species *M. subfaciatus*, *M. discolor* and *M. viridanus* were found on mulberry ecosystem of Kolhapur district throughout the year. However, *M. discolor* and *M. viridanus* were abundant from July to October during

year 2010-2013. The present study will be helpful for designing control strategies of weevils on Mulberry.

The role of weevils in agro ecosystem has been determined up to certain extent but predatory, nutritional and medical roles have not widely attempted. Hence, there is need to undertake research on above aspects for utilization of diversity and sustainable development of the region.

Acknowledgement

Authors are thankful to UGC-New Delhi for Sanction of the project-No.F-3-10/2012/(SAP-II) 2012 and Shivaji University, Kolhapur authority for providing facilities to this work.

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