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SCIENTIFIC NOTE

Seasonal Abundance of Major Pests of Sugarcane and Their Natural Enemies

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In Bangladesh sugarcane is attacked by nearly about seventy (70) species of insects pests (Anon., 1973-78; SRTI, 1991). Among them 10 are considered as serious pests (Rahman and Satter, 1991). In India average yield loss is about 20% and 15% in sugar recovery by insect pest (Avasthy, 1983)/. Sugarcane pests like borers, suckers and underground feeders cause severe damage in cane cultivation every year. Of these, top shoot borer, early shoot borer, rootstock borer, stem borer, white grubs, termites, pyrilla leaf hopper are most concerned. The present studies was aimed to assess the seasonal abundance of sugarcane pests and their natural enemies throughout the year, which might be useful in the timing of their control measures more judiciously and economically.

The experiment was set up at two locations. One at Bangladesh Sugarcane Research Institute (BSRI) farm, Ishurdi, Pabna and another was set up at Regional Sugarcane Research Station (RSRS), TSM, Thakurgaon during the cropping season 2004-2005. Area under the experiment at both sites was 80 x 25m. Variety used was Isd 34 at BSRI location and Isd 20 used was at RSRS, TSM, Thakurgaon. The study was under taken at natural condition i.e. without any pesticide application in the experiment. Data collection comprised one year, beginning from first week of March 2005 and continued unto March 2006 at BSRI farm. At RSRS site data collection was started in the first week of March, 2005 and continued upto the second week of February,2006. Weekly data were collected on infestation level and natural enemies of major pests. Ten clumps per week were uprooted and dissected for borers. Ten sweeping was done per week to observe existing pests (moth/adult/beetle) and their natural enemies.

The infestation of top shoot borer ranged from 0.38 to 48.27 percent in BSRI farm (Fig-1). The highest infestation 48.27% was recorded at BSRI farm during the month of August 05 and the lowest 0.38% in the month of February 06. The incidence was increased from June 05 to October 05 and decreased from November 06 to February 06 (27.12-0.38%). Top shoot borer infestation was reported 11.11 to 28.89% and 22.22 to 38.89% was reported by BSRI in the annual report of 1997 (BSRI, 1999). In case of RSRS farm, Thakurgaon, infestation ranged from 6.06 to 44.04 percent. The highest 06 (44.04%) infestation was observed in the month of January, while lowest (1.19%) infestation was in February 06 Fig-2) . Fig-2 shows that top shoot borer incidence increased from 6.06 to 44.04% during April 05 to January 06.

Since the infestation started from third week of March it is assumed that the first generation of rootstock borer initiated at either first or second week of this month. The infestation recorded in the third week of May indicates the end of first generation again the appearance of infestation during second week of July indicates end of one more generation (third). Gupta and Avasthy (1952) reported that the rootstock borer complete three generations in a year in Uttar Pradesh. Cheema (1953) reported the occurrence of the five broods of this pest in Punjab. Thus the highest infestation occurred in the month of September 05 (22.82%) at BSRI farm (Fig-1) while 94.10% infestation at RSRS farm, during December 05 (Fig-2). In a study in India, severe rootstock borer infestation caused substantial suppression of tillering and over 80% of the crop damaged by the pest (Sikchi *et al.* 1987). Apparently infestation increased from September to November at BSRI farm (Fig.1) and from May 05 to February,06 at RSRS, Thakurgaon (Fig.2). The rootstock borer is more active in July onward, damaging the underground internodes and rhizome, but is more severe in ratoon than plant crop (Mrig and Chaudhary, 1991). A range of 7.78 to 38.89% Rootstock borer infestation was reported earlier at Ishurdi (BSRI, 1999) .

It was observed from both Fig. 1 and 2 that infestation of stem borer started from June 05. The highest infestation was (27.52%) at BSRI farm and lowest 0.56% in the month of September 05 and November 05. In case of RSRS farm, TSM the lowest infestation 5.68% was observed in the month of June 05 and the highest infestation 60.37% was found in December 05 . Two spp. of stem borer viz. *Chilo tumidicostalis* Hampson and *Chilo auricilius* Dudgeon, attack sugarcane stems. The former one is considered as a major pest (Anon, 1978) and its incidence is inovitable every year. Its infestation starts from May and continuos till harvest of the crops and causes considerable damage. The stem borer (stalk basis) infestation of sugarcane was reported to vary from 11.11 to 58.89% (BSRI, 1999)

The infestation of Black beetle ranged from 1.29% to 42.71% in BSRI farm during the month of March 05 to June 05. The highest infestation of Black beetle was observed in the month of March 05 (42.71%). In case of RSRS farm infestation ranged from 1.95 to 9.61 percent during March to May, 05. The highest (9.61%) and lowest (1.95%) infestation of Black beetle observed in the month of March and May respectively. From the Fig. 1and 2 it was cleared that Black beetle infestation started just after germination and decreased in May and onward.

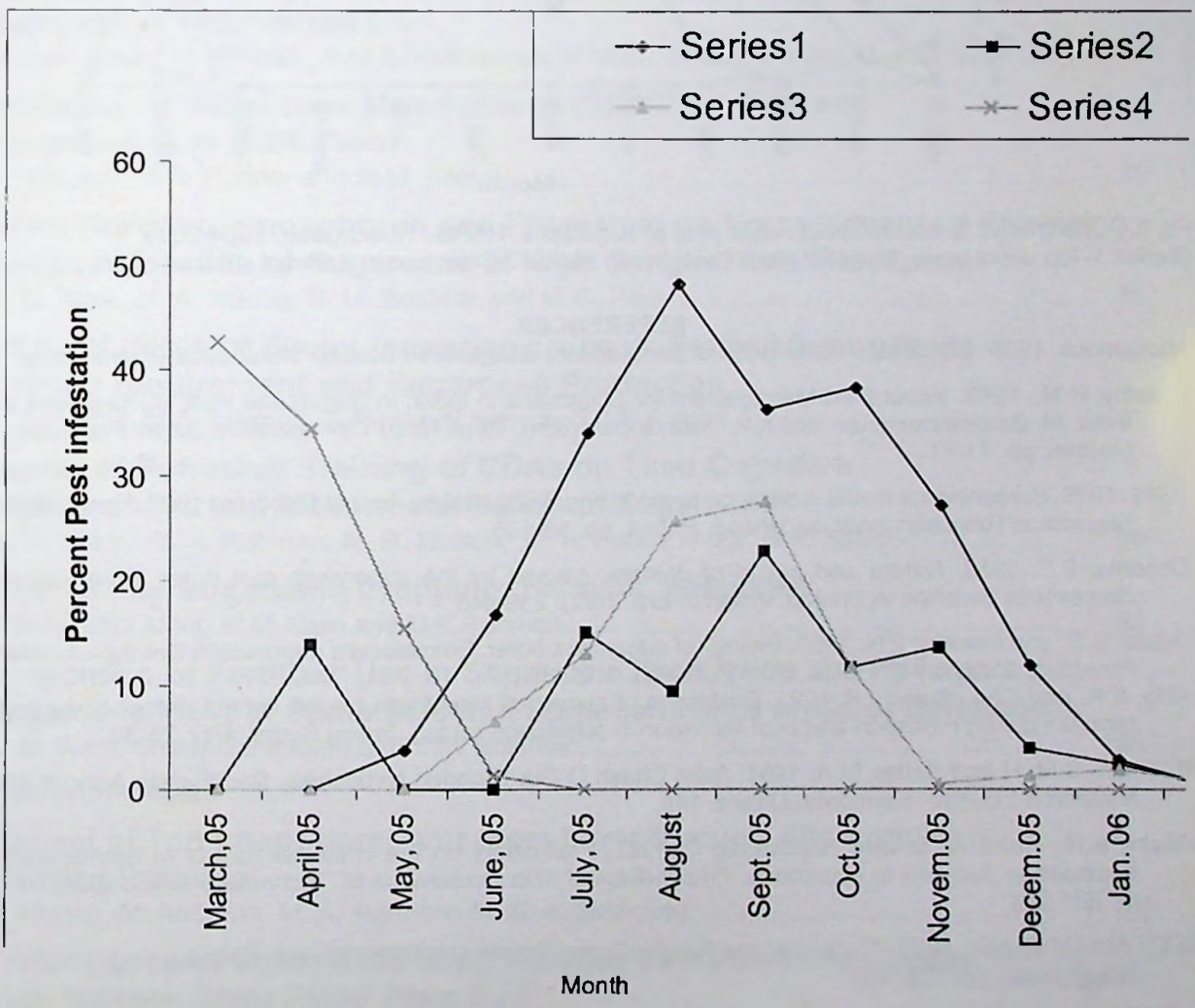

Fig 1. Monthwise % infestation of major pest of sugarcane, BSRI, Ishurdi, Pabna, 2004-2005. (Series 1-Top shoot borer, Series 2-Rootstock borer, Series 3-Stem borer,Series 4- Black beetle)

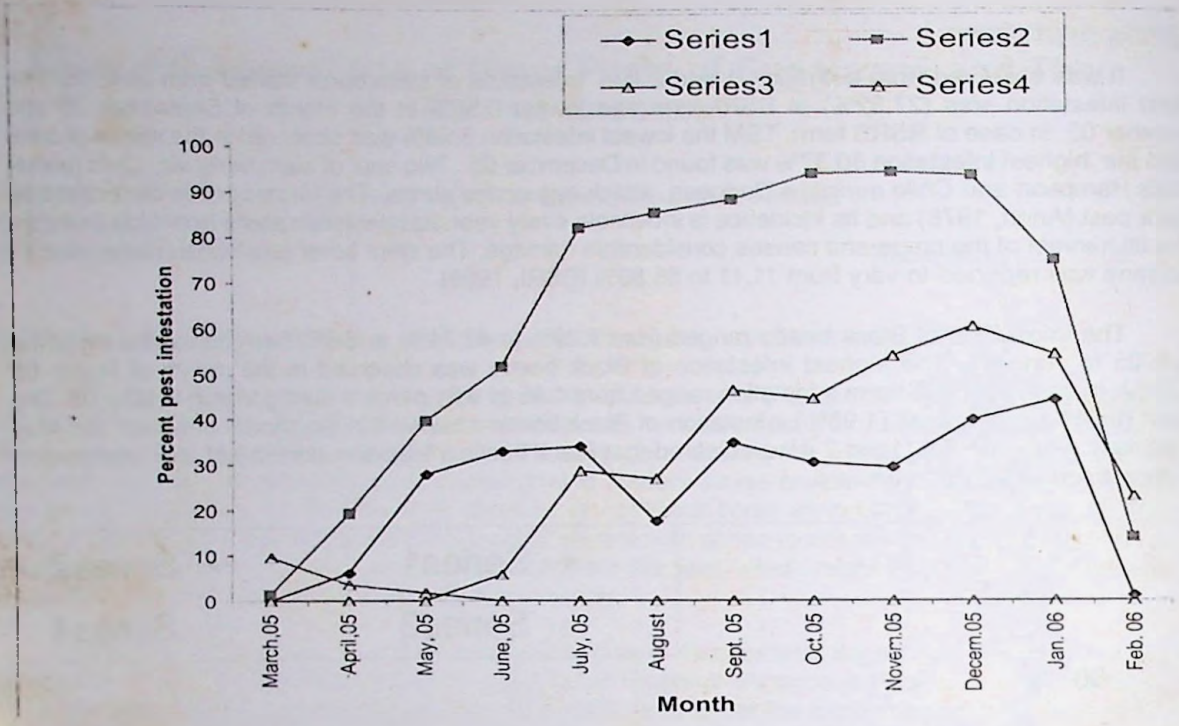

Fig 2. Monthwise % infestation of major pest of sugarcane, RSRS, Thakurgaon, 2004-2005. (Series 1-Top shoot borer, Series 2-Root stock borer, Series 3-Stem borer, Series 4 -Black beetle)

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