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Assessment of Losses of Sugarcane caused by *Striga densiflora*

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Striga densiflora, a notorious parasitic weed to sugarcane locally known as "Bijleeghas" was first reported in Bangladesh by Ahmed (1977). This covers an area of 450 sq miles under the greater districts of Pabna, Rajshahi, Natore, Bogra and Kushtia and causing lot of troubles in sugarcane cultivation. The *Striga* plants appear above the ground during the month of April, and complete their life cycle by October. Heavy infestation is usually observed during the months of May, June and July. It establishes contact directly with the vascular system of the host plant, sucks water and nutrients and causes tremendous damages to crops (Figs. 1 & 2). It has become alarming for sugarcane cultivation since spreading fast over new areas. Loss assessment due to *Striga* infestation has not yet been done in Bangladesh. Therefore, this study was undertaken to find out the losses of sugarcane caused by *Striga densiflora*.

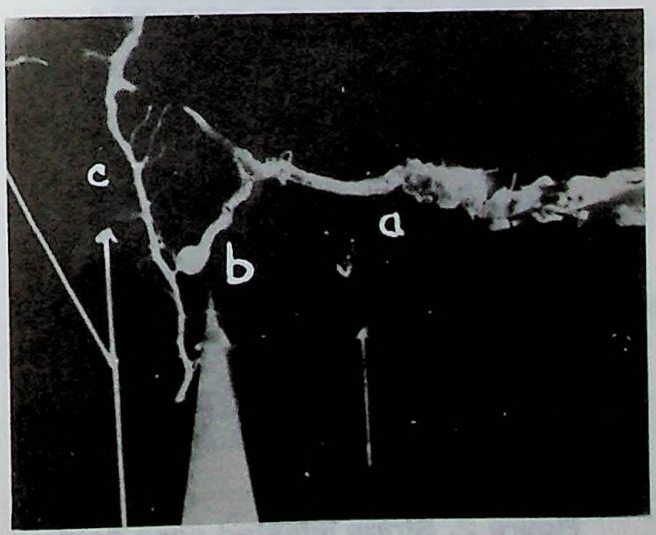

Figure 1. Root association of sugarcane & *Striga* plant. a) *Striga* root, b) haustoria c) sugarcane roots

A heavily *Striga* infested area of Arambaria, Ishurdi under North Bengal Sugar Mills Ltd was selected for this trial. Two standing sugarcane plots of Isd. 16 were selected, one of which was heavily infested with the *Striga* plants and the other one was free from them. Four replicated representative plots each measuring 3×4 m^2 were selected and harvested from each category. Data on total millable canes, plant height, stalk weight and *Striga* population were made. After completion of data collection on height and weight of canes, those were chemically analysed for sucrose content in the laboratory. Finally the average data of all the parameters were statistically analysed.

Assessment of losses in *Striga* infested canes compared to healthy one were made and found significant difference on millable canes, plant height, stalk weight and sucrose content between healthy and infested crops (Table 1).

Figure 2. *Striga* infested cane field.

Table 1. Effect of *Striga* infestation on millable canes, plant height, stalk weight and sucrose content of sugarcane.

Treatment	Striga population/ plot (12m ^{2}) (nos)	Average millable canes/ plot (nos)	Reduction in millable cane (%)	Average height/ cane (cm)	Reduction in height (%)	Average weight of canes/ plot (kg)	Loss in wt. (%)	Average sucrose content (%)	Sucrose loss (unit)
Healthy	0	206.2		270		284.5		15.1	
Infested	1164	16.5	92.00**	70	74.0**	44.5	84.4**	7.0	8.1

** Indicates significant difference at 1% level as per DNMR test.

The number of millable canes and average plant height of the crop were reduced by 92 and 74% respectively due to *Striga* infestation. Losses on stalk weight and sucrose content was recorded by 84.4% and 8.1 unit respectively (Table 1). The yield loss depends on *Striga* population and severity of infestation, and 15 to 75% yield loss was reported by Rao, (1983), which was confirmed and expanded by the findings of the present investigations. Due to heavy *Striga* infestation in the field, most of the plants died, and the whole field showed a burned appearance (Fig. 2) which also confirmed the findings of Ahmed (1977). The present findings sought for investigation on control measures of *Striga*.

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