

OBSERVATIONS ON MORPHOLOGICAL MODIFICATIONS IN SMUT INFECTED SUGARCANE

Smut disease caused by *Ustilago scitaminea* Sydow is one of the important diseases of sugarcane in West Bengal (Martin *et al*, 1961). It causes considerable loss in yield and juice quality due to its adverse effect on the development of canes. Observations were made on a number of varieties (*viz.*, Co. 1132, Co. 1148, Co. 1158, Co. 6311, Co. 6315, Co. 7218, Bo. 70 Bo. 91, Bo. 99 etc.) both in plant and ratoon crops during 1980-81, 1981-82 and 1982-83 to study the morphological modifications caused by smut in plant growth as a result of which the normal development of canes is affected.

In West Bengal, usually two flushes of smut whip appearance have been observed. The first flush occurs during May to June (Primary infection) and the second one during October to November (Secondary infection). The highest percentage of infection has been observed in the first flush (30% in Co. 1158 ratoon crop). Regular observations during the last three seasons it has been observed that the smut affected canes of the first flush usually have slender and thin canes with their top leaves stiff and at an acute angle assuming more lanceolate type of shape, reduced in size and a greater tendency to tiller and the maximum number of tillers upto 35 per clump have been recorded in Co. 6311 ratoon crop. On the basis of these preliminary studies the smut affected canes can be easily located in the field before appearance of whips. The whips of the second flush are much larger (80-90 cms) than the first ones (30-40 cms) as in Co. 1158 and 7903/7 (an advance line). In case of secondary infection in 7903/7 plant crop side buds also sprouted and gave rise to small smutted whips (12-20 cms). Spectacularly, smut (whips 50 cms. in average size) was observed during February, 1983 for the first time in one plot of BO. 91 which was kept for ratooning only 3 months before. Multiple buds (3 in number) at the 6th node from the top in one smut affected cane of 7903/7 were recorded.

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Sugarcane Research Station,
Bethuadahari, Nadia. West Bengal.

ARUNAVA BISWAS

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