

WEATHER CONDITIONS AND BACTERIAL RED STRIPE DISEASE OF
SUGARCANE IN WEST BENGAL

BY

A. BISWAS

Sugarcane Research Station, Bethuadahari, Nadia, West Bengal.

Bacterial red stripe disease of sugarcane caused by *Xanthomonas rubrilineans* (Lee *et al.*) starr *et* Burkh. was first observed in West Bengal in Coochbehar district on varieties Co. 419 and Co. 527 in 1957-58 (Anon, 1957-58). Recently the disease has been noticed in a number of varieties (viz., B.O.17, B.O.70, Co. 1132, Co. 1148, Co. 1158, Co. 7218, Co. 7224, Co. 7717) at certain places in Nadia district. The disease is generally considered as of minor importance (Martin and Wismer, 1961) but the pathogen has the potential to cause epidemics (Chona and Rao, 1963).

Examination of the diseased samples revealed that the symptoms were similar to those described by Albuquerque and Arakeri (1956), Martin and Wismer (1961) and Rana and Shukla (1968). Two phases of the red stripe disease were observed : leaf stripe and top rot. Varieties like Co. 1148, Co. 1150, Co. 7224 were affected by leaf stripe only whereas Co. 1132 and Co. 7218 was affected by the top rot phase only. Varieties like Co. 7717, B.O.17 and B.O.70, showed both red stripe and top rot symptoms.

Observations regarding factor's of weather (Table 1) and percent incidence of different phases of the disease (Table 2) at the Sugarcane Station, Bethuadahari, during 1979-83 have shown that incidence and severity of the disease might have relations with onset at intensity of rainfall during late summer and monsoon months in a year.

Leaf stripe phase of the disease which normally appeared with the onset of rains during June was noticed during May 1980, 1981 and 1983 when rains were widespread in the locality and the temperatures were somewhat lower and humidity comparatively high than in 1979 and 1982. These climatic conditions probably favoured early disease incidence during these years. Similarly top rot phase was observed exceptionally during June 1980 and 1983 as humidity and rainfall were comparatively high during that month of those years than in the preceeding and succeeding years.

TABLE 1. Weather conditions during May to August in different years at Bethuadahari

Year	Mean Maximum Temperature (°C)		Mean Percentage Relative humidity		Rainfall (mm.)		
	May	June	May	June	May	June	August
1979	39.37	34.99	61.90	72.58	41.12	245.00	326.16
1980	34.73	32.13	73.48	80.35	148.32	389.12	302.40
1981	32.67	34.35	75.69	75.45	172.80	108.80	354.32
1982	37.22	33.96	68.27	76.81	71.36	162.24	195.04
1983	34.26	34.29	78.62	80.68	263.36	198.30	124.84

TABLE 2. Disease incidence % (on cane basis) during May to August in different years at Bethuadahari

Year	Leaf stripe phase in Co. 1148			Top rot phase in Co. 1132		
	May	June	August	May	June	August
1979	0.0	1.4	4.1	0.0	0.0	3.5
1980	1.0	2.3	4.5	0.0	1.9	4.0
1981	1.2	1.0	2.5	0.0	0.0	2.8
1982	0.3	2.0	4.0	0.0	0.0	1.5
1983	1.2	2.5	5.4	0.0	1.0	4.5

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