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OCCURRENCE OF CLUB ROOT DISEASE ON RAPESEED MUSTARD IN WEST BENGAL

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Club root, a new dangerous disease of yellow sarson (*Brassica campestris* L var *yellow sarson* Prain) caused by *Plasmodiophora brassicae* Woron, was reported earlier from West Bengal and yield loss was estimated as 32.5% in cultivar 'Benoy' (Laha et. al., 1985 . An investigation regarding its incidence on other varieties of rapeseed and mustard was undertaken, considering the seriousness of the disease.

The incidence of the disease was very scanty in the gangetic alluvial region, the major mustard growing areas of this state, but quite severe in laterite soil. The disease was mostly found in large patches in low lands where soil moisture was sufficiently high. The soil pH of the areas showing incidence was varying from 5.2 to 6.8. The incidence of the disease was in light soil than heavy soil.

The symptom of the disease was noticeable after 60 days of sowing. The aerial parts of the plant showed stunted growth, pale colour and reduction in height. Number and size of the pods were reduced Pods were thick and sometimes curved. In sunny days the plant showed wilt like symptom as if the plant was suffering from lack of water. The infected roots were malformed into small or large 'club' like structures. In certain cases the number of galls were 8 to 12 per plant. Tap roots as well as lateral roots and rootlets develop galls. Finally,

Table 1. *Incidence of club root disease in some cultivable varieties of Rapeseed Mustard.*

Species	Variety	Percentage of infection
B. campestris var *yellow sarson*	B 9 (Benoy)	70
	YSB 19-7-C	65
B. campestris var *toria*	B 54 (Agrani)	45
	Composite 2	60
	Composite 3 (Panchali)	50
B. juncea	B 85 (Sita)	30
	RW 351 (Bhagirathi)	50
	RW 85-59 (Sarama)	60
B. napus	Midas	0

the malformed tissues become rotten and turn black and develop secondary infections. It was observed that all the cultivable varieties of rapeseed and mustard were affected by this disease (Table 1), The cultiva Midas of *B. napus* which is not cultivated in West Bengal, was found to be free from the attack of *P. brassicae.* In contrast to the claim (Das *et al*, 1987) of resistant nature of B-54 a cultivar of *B. Compestri* var *toria* to *P. brassicae* we found 45% of the plants infected in this survey in West Bengal (Table 1). It is possible that *P. brassicae* may have different races which was reported by Kolte (1985).

The incidence of the disease increased rapidly when mustard was grown in the infected field in successive years and about 70% was obserued after three years of cultivation. It suitable measures are not adopted the disease would increase gradually and losses in grain yield due to club root would be very high in near future.

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