

REACTION OF POPULAR RICE CULTIVARS TO BACTERIAL LEAF BLIGHT PATHOGEN *XANTHOMONAS CAMPESTRIS* PV. *ORYZAE* *

With the introduction of high yielding and high nitrogen responsive varieties of rice, bacterial leaf blight caused by *Xanthomonas campestris* pv. *oryzae*, has become a major disease in Kerala. This disease is endemic to Kuttanad and Palghat, the major rice growing areas of the state and both indigenous and improved varieties are affected by this disease. The first damaging report of this bacterial disease was from Palghat district in the year 1976.

Varying degree of success have been reported by different workers in the varietal resistance of rice cultivars to bacterial leaf blight. (Mahmood and Singh 1970, Ou *et al.*, 1971; Narayanasamy *et al.*, 1978; Raina *et al.*, 1979; Bhaskara Rao *et al.*, 1980). But very little work has been done on varietal screening for host resistance against the disease under Kerala conditions. Therefore a study was initiated to assess the reaction of popular rice varieties to this pathogen by artificial inoculation at the College of Agriculture, Vellayani during 1978-80.

The seeds of 50 rice cultivars obtained from Rice Research Station, Pattambi were used for the study (Table 1). The seedlings were raised in earthen posts (35 cm dia) filled with soil (20 kg) collected from puddled paddy field, and fertilized with ammonium sulphate, superphosphate and muriate of potash to get N, P, K at 90:45:45 kg/ha. The trial was conducted in a completely randomised block design with eight replications. The bacterium was isolated from naturally infected rice plants collected from Rice Research Station, Moncompu and grown on potato sucrose peptone agar medium.

The plants were inoculated with a 24 h. old culture of the bacterium (10^9 cells/ml) at the maximum tillering stage. The technique employed for inoculation was the standard clipping method combined with foliar spraying of the bacterial suspension. The inoculated plants were kept under high humid conditions. The plants were scored for reaction 15 days after inoculation. The disease intensity was scored with the 1976 standard evaluation system for rice scale developed by IRRI.

Of the 50 cultivars screened for reaction to the pathogen at the audit plant stage none was found to be resistant (Table 1). The entries fall in scale 5-9 with a high disease pressure as evidenced by an L. S. I. of 5.92. More than 50 per cent of leaf blade area showed blight symptoms in the variety T(N) 1. Among others 21 varieties showed a disease score of seven and 28 a disease score of five. Search for genetic host resistance has been engaging the attention of many scientists the world over (Ou *et al.*, 1971). Almost all of them are getting the same trend of results as in the present studies.

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Table 1

Reaction of popular rice cultivars to the bacterial leaf blight pathogen *Xanthomonas oryzae* evaluated at the maximum tillering stage

Scores*	Varieties falling under the disease grade					
	9	7	5	3	1	
Taichung (Native) 1		Hema Vani Rajeswari PR 156 IR 32 IR 26 IR 28 IR 8 Jaya Dee Geo Woo Gen Bharathy Ratna Suma Kumar Sakthi Parijath Rajendra Krishna Karuna Rohini Padma		Sahasini Soorya Sona Vijaya Bhadra Blue bonnet Malinga Sabari Bhavani Basumathi IR 22 IR 20 Pennai Anupama Pusa 33 Aswathi H4 Cauvery Kalinga I Kalinga II Bala Supriya Kanchi Triveni Madhu Annapoorna Satya IR5		

* SES scale

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സംഗ്രഹം

നെൽകൃഷിയെ ബാധിയ്ക്കുന്ന ഒരു പ്രധാന രോഗമായ ബാക്ടീരിയൽ ലീഫ് ബ്ലൈറ്റ് രോഗത്തിനെതിരെ പ്രതിരോധ ശക്തിയുണ്ടാക്കുന്നതിന് അൻപതോളം നെല്ലിനങ്ങളെ പഠനവിധേയമാക്കിയതിൽ ഒന്നിനും തന്നെ രോഗപ്രതിരോധ ശക്തിയുള്ളതായി കാണാൻ കഴിഞ്ഞില്ല.

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