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Short Communication

SCREENING WILD RICE SPECIES AGAINST BACTERIAL LEAF BLIGHT

D. Nayak*, N. Dikshit, B.P. Sarangi*, D. Panigrahi*, S. Parida and S.S. Malik

National Bureau of Plant Genetic Resources, Base Centre, Cuttack 753 006 (Orissa)

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Breeding for resistance has been a major component of bacterial Leaf blight (BLB) management in recent years. Since the sources of high degree of resistance to this disease is very much limited in cultivated rice in India, search for alien genes from wild species has become a major attempt. Amante-Bordeos *et al.* (1992) have reported the transfer of BLB resistant gene from *Oryza minuta* to cultivated rice. Therefore, an attempt has been made to identify alternative sources of resistance from 52 different accessions of 3 wild species of rice viz. *O. nivara, O. rufipogon* and *O. spontanea* which are being maintained at our centre.

Plants were grown in 15" diameter earthen pots filled with 15 kg of well pulverised field soil fertilized with urea @ 125 kg N/ha. Two tillers of each of the species were removed from the original plants. The culture of *Xanthomonas campestris* pv. *oryzae,* used in the study was isolated from rice cv. Jaya procured from Hyderabad and the isolate was named as CRXCO 45. Single colony isolates were maintained on the plants of modified Wakimotto medium at 20°C. Fresh culture (48 h) of bacterial suspension made in sterile distilled water at a concentration of 109 cells/ml was used for artificial inoculation. Fully developed top 3-4 leaves of 40 days old plants were inoculated by clipping method (Kauffman et al., 1973). Observations were taken on the period of incubation for initial symptom expression and progress of the lesion at 4 days interval upto 25 days of the inoculation. Lesion length upto 2 cm was treated as resistance reaction.

*Research Fellow, Central Rice Research Institute, Cuttack 753006, INDIA

Disease symptoms appeared at 7, 8, 9 and 10 days after inoculation in different accessions of different species. In *O. nivara*, accession numbers 14497, 14504 and 14523 exhibited resistance reaction with incubation periods of 10 and 11 days and lesion length of 2.0, 0.5 and 1.9 cm respectively. The progress of lesion was very slow with necrotic lesion covering entire width of the leaf. In case of accession no. 14504 the incubation period was 11 days and the progress of lesion was also very slow and slightly pale brown in colour. All other accessions of *O. nivara* were found to be susceptible.

Table 1. Reaction of different accessions of wild species of *Oryza* against 5 different isolates of *Xanthomonas campestris* pv. *oryzae*

Sl. No.	*Oryza* species	Accession No.	Maximum lesion length in cm to 5 different isolates					Reaction
			CRXCO 7	CRXCO 11	CRXCO 37	CRXCO 49	CRXCO 52	
1.	*O. nivara*	14497	1.5	1.7	0.8	1.9	1.9	R
		14504	0.5	0.4	0.5	0.3	0.3	R
		14523	1.9	2.0	2.0	1.8	1.3	R
2.	*O. rufipogon*	14562	1.9	1.3	1.1	0.8	1.6	R
		14562	0.7	0.5	0.3	0.9	1.1	R

In case of *O. rufipogon*, accession no. 14562 and 14563 were found resistant with incubation period of 12 days. The disease symptoms appeared brown, covering full width of the leaf. The maximum lesion lengths were 2.0 and 1.3 respectively at the 25th day. Disease symptoms in other accessions of *O. rufipogon*, appeared after 8, 9 and 10 days of inoculation. The colour of lesion was brown and water soaked covering entire width of the leaf.

In *O. spontanea*. all the accessions showed susceptible reaction to BLB pathogen with incubation period of 8 and 9 days. Progress of lesion was from tip proceeding to mostly midrib and margins of leaves.

Resistant accessions of *O. nivara* and *O. rufipogon* were also tested with 5 virulent isolates (CRXCO 7, CRXCO 11, CRXCO 37 CRXCO 49 and CRXCO 52) collected from different parts of India, and accession nos. 14497, 14507 and 14523 of *O. nivara* and 14562 and 14563 of *O. rufipogon* were observed resistant to all the test isolates.

It is thus evident from the present study that wild rice can play vital role in transferring resistant gene(s) to cultivated rice through interspecific hybridization.

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