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Short Communication

QUALITY CHARACTERISTICS OF SOME BACTERIAL LEAF BLIGHT RESISTANT RICE GENOTYPES

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Bacterial leaf blight (BLB) caused by *Xanthomonas campestris* pv. *oryzae* is one of the major diseases of shallow rainfed uplands and medium lands of plateau region of Bihar. Since host resistance is one of the economical and effective way of combating diseases and pests, there is a need to identify suitable donors for BLB resistance for utilization in varietal improvement programmes. Donors with multiple desirable traits are preferred for the simultaneous improvement of a number of traits. Hence, some bacterial leaf blight resistant genotypes were evaluated for grain and cooking quality components.

Twenty eight traditional and two improved cultivars suitable for typical shallow rainfed upland ecosystem were grown during the wet seasons of 1989 and 1990 to study their reaction to bacterial leaf blight. Thirty days old seedlings were transplanted in 1m rows spaced 15 cm between and within a row. There were two rows for each test entry. Taichung Native 1 was planted all-around the experimental plot as susceptible check. The crop was raised at 120:40:20 kg/ha of NPK. One third of N, full doses of P and K were applied as basal and the remaining N was topdressed in two equal halves. The plants at maximum tillering stage were clip-inoculated with the bacterial suspension prepared by soaking infected leaf pieces in water for 20 min. (Kauffman *et al.*, 1972). The genotypes were scored for bacterial leaf blight reaction 14 days after inoculation following the standard evaluation system for rice (IRRI 1988). Quality characteristics were determined using standard method as described in our earlier report (Varier *et al.*, 1990).

Ten genotypes, local *basmati* (HRC 97), *Kalamdani* (HRC 213), *Dudhrais* (HRC 221), *Raria* (HRC 268), *Ramkel* (HRC 272), *Tilasar* (HRC) 273), *Cauvery* (HRC 296), *Brown gora k* (HRC 401), *Ch 45* (HRC 442) and *Lalki* (HRC 605) gave resistant reaction with scores of 3.54 or less. Five of

these cultures having consistent reactions in both the years were also evaluated for physico-chemical and cooking quality characteristics. *Kalamdani* (HRC 213) only had long slender grains. There was not much variation in hulling and milling recovery of these genotypes but head rice yields varied substantially. *Lalki* (HRC 605) had the highest head rice recovery. All the five BLB resistant cultures had desirable levels of amylose content (20-25%). *Kalamdani* and *Raria* possess intermediate alkali score and high volume expansion (Table 1) while *Raria* also exhibited maximum water uptake (370 ml). *Lalki*, although could be a good donor for BLB, high head rice yield and kernel elongation, but had the lowest water uptake and medium type of grains and also showed high gelatinization temperature (low alkali score).

Table 1. Quality characteristics of some promising bacterial blight resistant genotypes

Characters	Genotypes				
	Kalamdani	Raria	Ramkel	Tilasar	Lalki
100 grain wt (g)	25.68	30.04	25.04	24.00	24.36
Hulling recovery (%)	76.00	79.00	77.00	75.00	76.60
Milling recovery (%)	70.50	74.20	71.10	70.10	71.70
Head rice yield (%)	65.90	45.30	58.10	37.10	68.00
Milled kernel length (L) (mm)	7.02	5.88	5.68	6.12	5.63
Milled kernel breadth (B) (mm)	1.98	2.80	2.34	2.44	2.45
L:B	3.54	2.10	2.43	2.51	2.30
Alkali value	3.50	3.50	2.80	2.70	3.00
Amylose content (%)	22.12	20.91	21.48	20.33	22.12
Water uptake (ml)	340.00	370.00	330.00	290.00	185.00
Volume expansion	4.30	4.30	3.70	3.70	4.00
Kernel elongation	1.77	1.77	1.79	1.60	1.81

The results suggest that all the five genotypes have atleast one or two good quality traits. However, *Kalamdani*, *Raria* and *Lalki* possess larger number of desirable cooking and market qualtiy traits and should be utilized in the breeding programmes to enhance the possibility of isolating more recombinants with BLB resistance, good cooking and milling quality traits in segregation generations.

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