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Short Communication

Evaluation of White Seeded Finger Millet Entries against Blast Disease and its Influence on Yield Parameters

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Finger millet (*Eleusine coracana* Gaetrn.) is one of the staple food crops for large section of people living in India and Africa. The crop being rich in nutrients and also said to be one of the best sources of nourishment, it was considered as whole food by the rural poor. The grains are rich in micronutrients particularly iron, calcium and the carbohydrates. In spite of several positive nutritional qualities there is stigma attached to its consumption among the urban elite. The brown or light black colour of the food preparations made of ragi flour itself is a deterrent to many urbanites, thus white seeded types can solve this problem of dislike to dark colour of foods. However, in finger millet production, blast remains a major biotic constraint resulting up to 28 per cent average yield loss [1]. Hence present study was taken-up to evaluate the available white seeded finger millet lines or entries against blast vis-a-vis their production potential.

The field experiments were conducted during *kharif* season of 2000, 2001 and 2002 at Zonal Agricultural Research Station, UAS, Bangalore. Seeds of seven white seeded finger millet entries along with four popular varieties (L 216, HR 374, PR 202 and VL 149) were sown in eight rows of three-meter length kept 22.5 cm apart in a randomised block design replicated thrice. After three to four weeks of sowing, thinning was done to maintain 10cm distance between the plants. The crop was raised following adopted agronomic practices [2]. Observations on neck and finger blasts were recorded at dough stage by actually counting the total ears and infected ears so that per cent neck blast was derived. Finger blast percentage was calculated from the number of fingers affected in the average fingers of five plants. At maturity, ears were harvested, dried, threshed and seeds were cleaned and seed weight per plot was recorded to compute yield per ha.

Neck blast incidence ranged from 0.0-4.6, 0.0-8.8 and 0.0-3.6 as against 0.6-8.0, 0.2-3.0 and 0.0-3.6 finger blast during the three years 2000, 2001 and 2002, respectively (Table 1). However, overall incidence of blast was low on white seeded entries in comparison to brown seeded ones with HR 374 recording highest mean neck and finger blast ranging from 10.6 and 11.3 per cent. Of the seven white seeded entries, WRC 1-12, GPUW-1, GE 4971, GE 5153 and Dapoli white were found resistant with <2 per cent neck and finger blast whereas Indaf 11 showed moderately resistant and OUAT 2 was susceptible.

The entry, WRC 1-12 recorded seed yields comparable to National check, PR 202 closely followed by OUAT 2 with GPUW-1 ranking third. However, Dapoli white was the lowest yielder (Fig. 1). The present studies revealed that, reaction of white seeded types to blast disease is comparable to that of regular brown seeded varieties with good yield potential and offer good scope for their use in food preparations to attract the urban elite towards the nutri rich millets.

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Table 1: Performance of white seeded ragi entries

Year/entries	2000-01			2001-02			2002-03		
	NB (%)	FB (%)	Yield (kg ha^{-1})	NB (%)	FB (%)	Yield (kg ha^{-1})	NB (%)	FB (%)	Yield (kg ha^{-1})
WRC 1-12	0.0	1.5	4494	0.8	0.2	4890	2.4	2.4	3932
GPUW-1	-	-	3783	0.4	0.9	3906	1.2	1.2	3883
Indaf 11	0.3	2.9	3432	0.7	3.0	4554	2.9	2.9	3353
GE 4971	0.0	1.9	3640	0.0	2.3	3543	1.5	1.5	2316
OUAT 2	4.6	8.0	3768	8.8	2.7	3980	3.6	3.6	4486
Dapoli white	0.0	0.6	1249	0.6	2.2	3882	0.0	0.0	1110
GE 5153	0.0	1.2	3072	1.1	0.4	3973	0.6	0.6	2870
L 216	1.5	2.2	3333	0.0	4.1	4762	2.0	2.0	4004
HR 374	6.9	6.5	4272	20.0	22.5	4277	4.9	4.9	4607
PR 202	3.5	11.6	4252	10.4	9.1	4376	6.8	6.8	5114
VL 149	4.0	8.0	4454	1.9	2.0	4114	2.6	2.6	4486
S. Em±	0.04	0.05	47	0.05	0.05	60	0.05	0.05	54
CD (P 0.05)	0.12	0.15	139	0.15	0.15	177	0.15	0.15	159

NB = Neck blast, FB = Finger blast

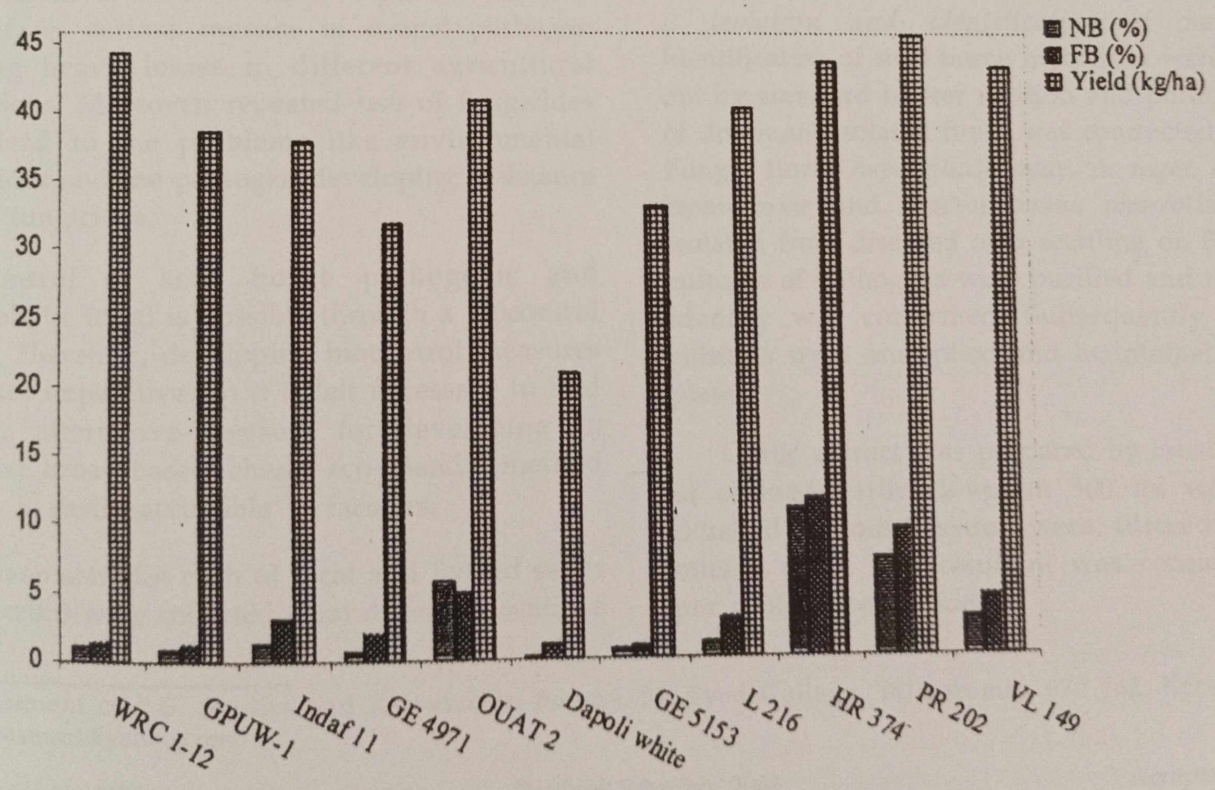

Fig. 1. Mean performance of white seeded entries for blast reaction and yield

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Since finger millet is the richest source of calcium (340 mg/100g), its protein being a rich source of sulphur containing amino acids and extrusion cooking of millets appears to be highly promising in the preparation of value added traditional and novel food products [3]. In such efforts of exploiting white seeded types may be more useful.

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