Indian J. Genet., **66**(2): 171-172 (2006)

Short Communication

RD 2624 — A new barley (*Hordeum vulgare* L.) variety for rainfed cultivation in north-western plains

S. M. Bhatnagar and S. N. Sharma

All India Coordinated Wheat and Barley Improvement Project, Rajasthan Agricultural Univ., Durgapura 302 018

(Received: August 2005; Revised: May 2006; Accepted: May 2006)

Barley (*Hordeum vulgare* L.) is mainly grown as a rainfed crop on residual moisture in several parts of northern plains of India. In many of these situations, barley yields have not significantly increased and vary mostly in response to fluctuations in climates [1]. Drought escape is a particularly important strategy of matching phenological development with the period of soil moisture availability to minimize the impact of drought stress on crop production in environments where the growing season is short and terminal drought stress predominates [2]. For moisture stress environment an ideal variety is one, which combines high yield with stability of performance over several environments [3]. Hence, there is a need to develop a new set of varieties to sustain maximum production under limited moisture regimes and particularly under rainfed areas. The improved genotypes with early maturing and better tillering under rainfed condition are desired to give better yield.

In this endeavour, RD 2624 was developed through single cross (BL 2 / RD 2508). The parent RD 2508 was selected because it was already released for rainfed condition. The other parent BL 2 involved in this cross, had potentiality to thrive well in saline-alkaline conditions. The segregating generations of BL 2 / RD 2508 were handled by pedigree selection programme under rainfed condition with artificial epiphytotic condition of rusts.

The results of coordinated varietal trials of variety RD 2624 revealed that it gave consistently higher grain yield over RD 2508, a popular variety in the NWPZ (Table 1). During three year testing (2001-03) it was recorded 3 times in first non-significant group out of seven. The variety showed response to recommended dose of nitrogen (40 kg/ha) and it gave 26.9% higher grain yield over check RD 2508 in coordinated agronomy trials (Table 2). Results of agronomic attributes of RD 2624 exhibited that it flowered in 71-89 days and attained maturity in 118-134 days. RD 2624 has a plant height range of 47-76 cm. It produced 63-221 tillers/m^2. It also possesses yellowish uniform medium bold grain with the 36-44 g test weight. This variety has consistently sown high degree of resistance against yellow and brown rusts as compared to check RD 2508 and was comparable for leaf and stem rusts (Table 3). It also showed moderate level of resistance to cereal cyst nematode. Hence, it could offer good opportunity for sustainable barley production in rainfed areas. The variety has inbuilt mechanism for higher yield, rust resistance and other desirable traits *viz.*, medium maturity, good plant height and straw strength, good tillering and higher grain weight, which offered a

Table 1. Performance of RD 2624 in coordinated varietal trials in NWPZ

Year of testing	No. of trials	RD 2624	RD 2508 (Check)	C.D.
2000-01	1	38.6	29.0	2.7
2001-02	2	23.2	20.6	1.8
2002-03	4	22.3	20.8	2.3
Mean yield (q/ha)		28.0	23.5	
Frequency in top group		3/7	0/7	

Table 2. Performance of RD 2624 in coordinated agronomical trials in NWPZ

Level of nitrogen × variety (Kg /ha)		RD 2624 (Yield q/ha)	Check variety RD 2508 (Yield q/ha)
F_1 (40 N)		20.7	16.3
F_2 (60 N)		–3.8	+ 19.0
F_3 (80 N)	Per cent increase or decrease over check variety on the basis of comparison with the recommended dose of nitrogen (40 N kg/ha)	–15.9	+ 55.8

Table 3. Reaction of barley variety RD 2624 to yellow, brown and black rusts under artificial conditions during the years of testing

Variety	Yellow rust			Brown rust			Black rust		
	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03	2000-01	2001-02	2002-03
RD-2624	TR (0.0)	10 S (1.6)	0.0 (0.0)	30S	0.0	0.0	30S	20S	30MS
RD 2508 (Check)	60S (17.8)	40 S (12.8)	80 S (13.3)	30S	0.0	0.0	30S	30S	20S

Figures in parentheses = Average coefficient infection of rust.

promise to increase production and productivity of barley in rainfed areas of NWPZ.

The Central Sub-committee on crop standards, notification and release of varieties for agricultural crops, released this variety for timely sown low fertility rainfed condition of the north-western plain zone of India (Rajasthan, Punjab, Haryana, Delhi and Western Uttar Pradesh) in 2004.

References

1. **Anonymous.** 2004. Progress Report 2003-2004, Crop Improvement Programme. AICW & BIP; DWR, Karnal.

2. **Turner N. C. and Begg J. E.** 1979. Drought resistance and adaptation to water deficits in crop plants. *In*: Stress physiology in crop plants. Mussell, H. and R. C. Staples, eds., Wily, New York.

3. **Jag Shoran.** 2004. Project Director Report for the year 2003-2004. AICW & BIP, DWR, Karnal.