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RESEARCH ARTICLE

STUDY THE PERFORMANCE OF DIFFERENT PADDY VARIETIES IN NARAINPUR AREA OF CHHATTISGARH

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ABSTRACT

A field experiment was conducted during the rainy (*kharif*) season of 2012, to study the performance of different paddy varieties in Narainpur area of Chhattisgargh. Six different paddy varieties were evaluated *viz*., Bamleshwari, M.T.U. 1010, H.M.T., Pusa Basmati, Dubraj and M.T.U. 1001 for growth and yield parameters. All varieties performed good under Narainpur condition. Among different varieties MTU 1010 recorded highest plant height (138.1 cm), no. of tillers per plant (13.8), maximum panicle length (27.3 cm), no. of seeds/panicle (306.6) and grain yield (25.61 q/ha) followed by Bamleshwari.

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INTRODUCTION

Rice is central to the lives of billions of people around the world as well as most important and staple food crop for feeding of more than two third populations globally. India is the world's second largest rice producer and consumer next to China. Just as rice can be grown in many different environments, it has many characteristics, making one variety more popular in one region of the world than another. The present study was carried out to study the performance of different paddy varieties in Narainpur area of Chhattisgarh. Number of rice varieties and hybrids were evolved in recent years which perform well under different soil and climatic conditions. Some of varieties like Bamleshwari which has been derived from cross between RP 2151-40-1 and IR 9828-23-1 which is resistant to bacterial blight and tolerant to blast disease. It is an intermediate tall variety and therefore suited cultivation under lowland situations. It is also well suited for Poha and Murra industries. MTU-1001 (Vigetha) and MTU 1010 (Cotton Dora Sannalu) are semi dwarf, erect type variety resistant to brown plant hopper. HMT variety developed from 'Patel 3' by a farmer which is superior over its parents in terms of yield, test and quality. Dubraj is an aromatic traditional rice variety with intermediate amylose and gelatinization temperature. Pusa Basmati is a semi-dwarf, high yielding basmati rice variety. It possesses excellent grain and cooking quality with soft texture and pleasant aroma.

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MATERIALS AND METHODS

A Large scale study was conducted to evaluate six different paddy varieties at Ramkrishna mission ashram agriculture Training and demonstration centre, Brehabeda, Narainpur district of Chhattisgarh during *kharif* season of 2012-2013. Six different paddy varieties *viz*. Bamleshwari, M.T.U.-1010, H.M.T., Pusa basmati, Dubraj and M.T.U. 1001 were evaluated in well drained medium to loamy soil suitable for rice cultivation with Randomized Block Design (RBD) in three replications. Seedlings were raised in the nursery using seed rate of 20-25 kg seeds/acre. Raised beds of 1m width, 20m length and 15cm height with 30 cm water channel were prepared for seedling rising. All recommended practices were adopted for raising the seedlings. Before transplanting, puddling with tractor was done to incorporate the weeds in the soil.

Table 1. Different paddy varieties effect on growth and yield parameters

Variety	Plant Height (cm)		No. of leaves/plant	No. of tillers/plant	Panicle length (cm)	No. of seeds/ panicle	Grain yield (q/ha)
	45 DAT	At harvest					
T_1 : Bamleshwari	81.8	121.9	4.8	12.9	23.3	218.3	25.21
T_2: M.T.U. 1010	93.0	138.1	4.0	13.8	27.3	306.6	25.61
T_3: H.M.T.	76.7	104.6	3.9	9.5	22.9	166.9	23.89
T_4: Pusa Basmati	64.8	94.1	4.0	11.3	22.3	196.1	12.93
T_5 : Dubraj	72.7	98.7	2.9	11.7	22.5	186.5	22.95
T_6: M.T.U. 1001	73.3	92.3	4.0	12.7	18.3	190.0	18.17
C.D. at 0.05%	6.7	3.8	NS	1.3	2.5	38.3	1.80

The basal doses of fertilizers i.e. 25kg urea, 50kg DAP, 40kg potash (MOP) and 8kg zinc sulphate per acre were applied before transplanting and top dressing of 30kg urea at 30 and 60 days after transplanting was carried out. After preparation of land 22 days old seedlings of each variety was transplanted at 25cm X 25cm distance manually in the field. For weed control, butachlore @ 600 ml per acre was used. All other practices as per recommendations were followed during experimentation. Observations on plant height, number of tillers and leaves/plant were recorded at 45 DAT and plant height, panicle length, number of seeds /panicle, number of days required to 50% flowering & complete maturity of crops and grain yield in each variety were recorded just before harvesting. Data were compiled and analyzed using appropriate statistical methods.

RESULTS AND DISCUSSION

All six varieties performed well under Narainpur condition. Among six different rice varieties tested / evaluated for their quantitative performance in Narainpur areas of Chhattisgarh state, variety MTU 1010 recorded significantly maximum plant growth in terms of highest plant height (93.0 & 138.1 cm), at 45 DAT and at harvest respectively and maximum number of tillers/plant (13.8) which was followed by Bamleshwari. Maximum no. of leaves/plant (4.0) was recorded in Bamleshwari variety followed by MTU 1010 at harvest. Whereas minimum plant height (72.7 & 92.3 cm) and no. of leaves/plant (2.9) were recorded in Dubraj and no. of tillers/plant (9.5) in HMT. Similar finding were also reported by Ramalakshmi *et al.* (2012); Alim (2012) and Kumar *et al*. (2014).

The maximum panicle length (27.3 cm) and number of seeds/panicle (306.6) were recorded in MTU 1010 over other varieties under test, there by gave significantly higher grain yield (25.61 q/ha) (Table 1), followed by variety Bamleshwari (25.21 q/ha), being not differing significantly from each other. With regard to number of days required 50% flowering and number of days required for crop maturity, all six varieties did not differ from each other. The significantly lowest grain yield (12.93 q/ha) was obtained in case of pusa basmati.

The results are also in conformity with findings of Kumar and Singh (2006); Hossaen and Singh (2000); Mohanty *et al.* (2013) and Kumar *et al*. (2014).

Thus it can be concluded that rise varieties MTU1010 and Bamleshwari are superior over other rice varieties tested and can be recommended to the growers in the area.

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