

RESEARCH ARTICLE

Performance of different mustard varieties in Terai zone of West Bengal

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SUMMARY

The research on varietal screening for a specific location has done since long time. But varietal screening of Indian mustard at Terai region has meagre hitherto. Therefore, an experiment was performed to evaluate the performance of different mustard varieties in Regional Research Sub-Station (Terai Zone), Uttar Banga Krishi Viswavidyalaya in the year 2015-16 during *Rabi* season (Dec.- Feb.). The study was purposively done to evaluate five mustard varieties viz., T-9, Pilloo, NC-1, PS-28 and B-9 in Terai Zone of West Bengal with respect to yield attributing characters. In brevity it was found that Pilloo is most suitable cultivar for studied areas.

Key Words : Mustard varieties, Yield attributing characters

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Indian mustard (*Brassica juncea*) is the second most important oilseed crop in India, after groundnut. In Northern part of West Bengal (North Bengal), it is an important winter (*Rabi*) oilseed crop grown as rainfed but its productivity is low (744.9 kg ha⁻¹) in comparison to the national average of 950 kg ha⁻¹. Therefore, adoption of suitable crop management practices are important factors for improving crop productivity. Variety have pronounced effect on growth and yield of mustard (Mandal and Sharma, 2004). Since variety selection of Indian mustard in Terai Zone of West Bengal is meagre, an experiment was purposively done to select the most

suitable variety in these areas.

MATERIAL AND METHODS

The experiment was conducted at experimental field of Regional Research Sub Station (Terai Zone), Uttar Banga Krishi Viswavidyalaya, Kharibari, Darjeeling, West Bengal with five mustard genotypes *i.e.* T-9, Pillow, PS-28, NC-1 and B-9 during *Rabi* Seasons of 2015-16 for screening of the genotypes under Terai Region of West Bengal. The experiment was laid out in Randomized Block Design with three replications. The crop was sown in lines at a spacing of 30 cm x 10 cm in a plot size of 3m x 3m. Farmyard manures @7.5 tonnes/ ha was applied before the last ploughing. A fertilizer dose of N: P₂O₅: K₂O in the proportion of 100: 50: 50 kg/ha was employed (Recommended dose of Directorate of Agriculture, Government of West Bengal, India). The half of N, full P₂O₅ and full K₂O were applied before sowing and rest half of N was given as top dressing. All the intercultural operations were followed as and when required. The observations on vegetative growth and yield attributing characters were taken.

RESULTS AND DISCUSSION

The yield components predominantly hinges on *viz.*, plant height, number of primary branches per plant, pod length, number of siliqua per plant, number of seeds per siliqua, test weight, and that was influenced significantly as a result of variety (Table 1). It was observed in Table 1 that there was no significant difference in plant height due to varietal variation. The decreasing trend was plant height was Pilloo > NC1 > T-9 > B-9 > PS-28. Number of branches is one of the most important yield determining characters. Highest number of branching was found in B-9 in (5.71) followed by PS-28 (5.40), T-9 (5.10), Pilloo (4.90) and NC-1 (4.60). Pod length, number of siliqua

plant⁻¹ and number of seeds siliqua⁻¹ the most important determinant of seed yield of mustard and were recorded at the time of picking. The decreasing trend of pod length was found B-9 (5.21 cm) > T-9 (5.20 cm) > Pilloo (4.90 cm) > PS-28 (4.60 cm) > NC-1 (4.10 cm). Quantification of siliqua/plant is the most yield attributing characters while varietal screening. Significantly the highest number of siliqua plant⁻¹ were recorded in Pilloo (31.08) followed by T-9 (28.30), B-9 (25.90), PS-28 (25.60) and NC-1 (16.80), respectively. The maximum number of seeds per siliqua were (20.01) in Pilloo followed by PS-28 (15.40), NC-1 (14.30), B-9 (13.90) and T-9 (12.70), respectively. The decreasing trend of test weight (1000 seed weight) were also recorded and found highest in Pilloo (2.20 g) followed by B-9 (2.18 g), T-9 (2.10 g), PS-28 (2.07 g) and NC-1 (1.38 g)

The highest seed yield (10.08 q ha⁻¹) recorded with Pilloo variety by NC 1 (1.32 t ha⁻¹) followed by PS-28 (10.51 q ha⁻¹), T-9 (9.75 q ha⁻¹), B-9 (9.02 q ha⁻¹) and NC-1 (7.81 q ha⁻¹), respectively. The performance of Pilloo and PS-28 were at par. This is in conformity with the findings reported earlier by Mandal and Sinha (2004). Similar findings also established by Shivani and Kumar (2002).

Conclusion:

On the basis of the experimental result it can be concluded that the mustard yield and yield attributing characters was comparatively higher in variety Pilloo than that of the other specific cultivar. Among the three cultivars it was also found that Pilloo is the best suited cultivar that gives best yield and yield attributing characters in Terai Zone of West Bengal in comparison to cultivar NC 1, T-9, B-9 and PS-28. This was perhaps due to more number of siliqua per plant, more number of seeds per siliqua and due to more test weight.

Table 1 : Influence of sowing technique on yield attributing characters of three mustard varieties

Treatments	Plant height (cm)	No. of primary branches/plant	Pod length (cm)	No. of siliqua/plant	No. of seeds/siliqua	Test weight (g)	Yield (q/ha)
T-9	71.40	5.10	5.20	28.30	12.70	2.10	9.75
Pilloo	79.50	4.90	4.90	31.80	20.01	2.20	10.80
NC-1	72.20	4.60	4.10	16.80	14.30	1.38	7.81
PS-28	68.60	5.40	4.60	25.60	15.40	2.07	10.51
B-9	70.27	5.71	5.21	25.90	13.09	2.18	9.02
S.E.+	2.25	0.37	0.25	1.22	0.84	0.07	0.54
C.D. (P=0.05)	7.35	1.22	0.80	3.96	2.74	0.21	1.76

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