

Short communication

Influence of sowing dates and sowing methods on growth and yield of pearl millet

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Pearl millet is generally grown as *kharif* crop in Maharashtra state and is also grown to a less extent as in summer under irrigated conditions after harvest of crops like potato or onion. It can withstand drought to a great extent. This paper reports on the results of a field experiment, which examined the effects of sowing dates, sowing methods on growth and yield characters.

The experiment was conducted during the *kharif* season of the year 1998-99 on the College of Agriculture Farm, Pune-5, (M.S.), India (18°32'N latitude, 73°51'E longitude and 559 m above mean sea level). The experiment was laid out in a factorial randomised block design having three sowing dates (S_1 - 5th July, S_2 -13 July and S_3 -20th July) and three sowing methods (L_1 - Local, L_2 - Border and L_3 - Ridges and Furrow) replicated thrice the variety being Shradha (RHRBH-8609). The seed was dibbled to a depth of 4-5 cm using 2-3 seeds/hill and adopting spacing of 15 cm within row and 45 cm between rows in all treatments.

A basal dose of 30 kg ha⁻¹ N and 30 kg P₂O₅ ha⁻¹ applied through the urea and D.A.P. (Diammonium phosphate) at the time of sowing and remaining half dose of nitrogen was applied 25 days after sowing as top dressing. Weekly soil moisture for 0-15 cm depth was determined by the gravimetric method and by Neutron moisture meter for the remaining 60 cm depth.

The crop sown in early sowing of S_1 produced significantly more plant height, dry matter and yield attributing character (1000 grain wt, length of earhead and no. of grain per earhead) as compared to S_2 and S_3 (Table 1). These were more in the crop sown in ridges and furrow method as compared to local and border methods.

The early sowing of S_1 produced significantly higher grain yield as compared to delayed sowing S_2 and S_3 (Table 2). Similar results regarding grain yield, fodder yield and total biological yield were observed by Gautam and Kaushik (1984), Bhagchand and Gautam (2000). Muchow (1989) also found higher biomass in S_1 and

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Table 1: Influence of sowing dates and sowing methods on growth and yield attributing character.

Treatment	Plant height (cm)	Dry matter (g plant ⁻¹)		1000 grain wt. (g)	Length of earhead (cm)	No. of grain/earhead
		Stem	Leaves			
Sowing dates						
S ₁ (5 th July)	187	27.29	4.96	13	19	3215
S ₂ (13 th July)	186	27.19	4.86	12	17	3114
S ₃ (20 th July)	167	26.97	4.76	9	15	3014
SE	0.41	0.03	0.02	0.20	0.36	37.44
CD (5%)	1.22	0.10	0.07	0.60	1.07	112.27
Sowing methods						
Local (L ₁)	176	26.97	4.66	10	15	2986
Border (L ₂)	180	27.00	4.92	12	18	3154
Ridges and furrow (L ₃)	183	27.21	5.00	13	19	3204
SE	0.41	0.03	0.02	0.20	0.36	37.44
CD (5%)	1.22	0.10	0.07	0.60	1.07	112.27

Table 2: Effect of sowing dates and methods on grain, fodder and biomass yield

Treatment	Grain yield (kg ha ⁻¹)	Fodder yield (kg ha ⁻¹)	Biomass yield (kg ha ⁻¹)
Sowing dates			
S ₁ (5 th July)	1955	5594	7549
S ₂ (13 th July)	1835	5393	7228
S ₃ (20 th July)	1821	5201	7022
S.E.	20.86	141.53	133.57
C.D. at 5 %	62.53	-	-
Sowing methods			
Local (L ₁)	1783	5134	6917
Border (L ₁)	1906	5451	7374
Ridges and furrow (L ₁)	1923	5603	7509
S.E.	20.86	141.53	133.57
C.D. at 5 %	62.53	-	-

S₂ at maturity compared to S₃ and S₄ due to more favourable thermal and radiative conditions with early sowing with maize and pearl millet. However, fodder and

biological yield of pearl millet was not significantly influenced due to different sowing dates (Andhale *et al* 2003).

The crop sown in ridges and furrow

(L₃) and that in border (L₂) method significantly increased grain yield over local (L₁) method of pearl millet. According to Khalid *et al* (1988) maize planted on paired ridges performed better than that grown in single-rows. Ridges and furrow sowing method increased grain yield by 8% over local method. Similar results were also reported by Shaikh *et al* (1995). The crop sown on ridges and furrow might have experienced better aeration facilitating for better nutrient uptake leading to increase in grain yield. However, fodder yield and biological yield were not significantly influenced due to different sowing methods.

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