

Short Communication

Effect of Sowing Time and Cutting Management on Fodder Yield of Barley

N.K. Sharma

Agricultural Research Station, Keshwana-Jalore 343 001, India

Inadequate fodder supply and poor nutrition during winter are the major constraints in livestock development in western Rajasthan. Malnutrition over a significant part of the year adversely affects the production level of animals. Barley (*Hordeum vulgare* L.) crop provides both feed (grain) and fodder. It possesses special features like fast growth, more dry matter accumulation and profuse tillering. Its fodder is also palatable. The biomass accumulation capacity of barley during early growth period is higher than oat (Sharma, 2002). Under optimum management practices barley crop can produce 38.3 t ha⁻¹ of green fodder (Sharma, 1997-98). Barley fodder may be a viable source of income generation for farmers. Therefore, an experiment was conducted to find out the optimum sowing time and stage of harvest for fodder in transitional plain of Luni Basin (Zone II-B) of Rajasthan.

An experiment was conducted in Factorial RBD with 9 treatment combinations (3 sowing dates and 3 cutting management) with 3 replications on fodder barley (var. RD 2052) during the years 2002-03 and 2003-04. Crop was sown at 25 cm spacing and 40 kg N ha⁻¹ and 40 kg P₂O₅ ha⁻¹ was applied as basal, 20 kg N ha⁻¹ at 30 days after sowing and 20 kg N ha⁻¹ after first cut was top-dressed.

Irrigation was given as per crop requirement. After first irrigation one hoeing was done for weed control. The crop was sown on 3 dates at fortnightly intervals, i.e., October 15, November 1 and November 15 to know suitable sowing time of the fodder barley. To find out the suitable time of harvest for fodder barley crop was harvested 45 days, 60 days and 75 days after sowing. However, in all three cases second cut was taken at 45 days after first cut. First cut was taken about 4 cm above the ground level for good regeneration.

Effect of sowing time

Sowing time significantly influenced the green fodder yield in both the years (Table 1). Mean green fodder yield ranged between 21.17 t ha⁻¹ to 29.81 t ha⁻¹. Maximum yield was recorded from the crop sown on October 15. Delay in sowing decreased the fodder yield due to shorter growing period. Barley being a profuse tillered crop its growth and regeneration is associated with the climate particularly temperature, day length and relative humidity. The crop sown on October 15 availed full winter season consequently provided higher fodder yield, which was affected by tillering, growth and regeneration after first cut. Sharma (2003), Bali *et al.* (1998) and Singh

Table 1. Green fodder yield of barley as affected by sowing time

Sowing time	Green forage yield (t ha ⁻¹)		
	2002-03	2003-04	Mean
15 October	35.89	23.72	29.81
1 November	29.83	23.89	26.86
15 November	26.89	15.44	21.17
CD (P = 0.05)	2.97	2.00	—

et al. (1997) reported similar results with fodder oat.

Effect of cutting management

Fodder yield of barley was affected with cutting management practices. Interaction between sowing time x cutting management was found statistically significant (Table 2). Fodder yield in different sowing time and cutting management treatments ranged between 19.09 t ha⁻¹ to 31.92 t ha⁻¹. Maximum fodder was obtained when crop was sown on October 15 and first cut at 75 days after sowing and second cut 45 days thereafter. While minimum fodder was recorded from November 15 sown crop and first cut was taken at 60 days after sowing. In case of October 15 sown crop, a good regeneration was found even at

75 days after sowing. Therefore, barley crop should be sown on October 15 and first cut should be taken at 75 days after sowing and second cut at 45 days thereafter to have higher fodder yield. In November 1 sown crop, first cut should be taken between 45-60 days after sowing and second cut at 45 days thereafter. In case of late sown crop only single cut at 75 days after sowing is advocated to harness the higher fodder yield of barley.

The barley crop accumulates its potential fodder yield at 75 days after sowing. In late sown conditions if barley crop is cut before that, it neither accumulates its potential fodder in first cut nor it provides good regeneration for second cut. Different workers have reported significant variations in fodder yield of oat affected by sowing

Table 2. Sowing time x cutting management interaction in fodder barley

Sowing time	Cutting management								
	I cut			II cut			III cut		
	2002-03	2003-04	Mean	2002-03	2003-04	Mean	2002-03	2003-04	Mean
15 Oct.	33.67	21.67	27.67	34.67	25.00	29.84	39.33	24.50	31.92
1 Nov.	31.83	24.33	28.08	33.00	24.67	28.84	24.67	22.67	23.67
15 Nov.	29.50	12.00	20.75	23.17	15.00	19.09	28.00	19.33	23.67
Mean	31.67	19.33	25.50	30.28	21.56	25.92	30.67	22.17	26.42

CD (P = 0.05) = 5.16 (for the year of 2002-03); CD (P = 0.05) = 3.46 (for the year of 2003-04); I cut management = First cut at 45 days after sowing and second cut 45 days thereafter, II cut management = First cut at 60 days after sowing and second cut 45 days thereafter, III cut management = First cut at 75 days after sowing and second cut 45 days thereafter.

time and cutting management. Sharma (1993) reported that under late sown conditions of oat only single cut should be taken at 90 days after sowing.

Acknowledgement

Facilities received from Agricultural Research station, Keshwana-Jalore, during experimentation is gratefully acknowledged.

References

- Bali, A.S., Bali, A.S. and Shah, M.H. 1998. Performance of different oat cultivars to cutting management and planting dates in rice-oat cropping system. *Forage Research* 24: 169-170.
- Sharma, N.K. 1997-98. Forage productivity of oat and barley with different growth regulators. *Forage Research* 23: 159-161.
- Sharma, N.K. 2002. Relative performance of oat and barley cultivars for forage yield. *Forage Research* 28: 113-114.
- Sharma, N.K. 2003. Effect of sowing time and cutting management on fodder yield of oat cultivars. *Current Agriculture* 27: 61-63.
- Singh, J., Rana, D.S. and Joon, R.K. 1997. Effect of sowing time and cutting management and phosphorus levels on growth, fodder and grain yield of oat. *Forage Research* 28: 115-117.