

Response of lucerne (*Medicago sativa*) varieties to seed rate and effect of mixing of chinese cabbage (*Brassica chinensis*) seed with lucerne seed on green-forage yield

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Lucerne (*Medicago sativa* L.) is a very valuable leguminous fodder and hay crop for the irrigated areas of Rajasthan. Being slow-growing in the beginning, it yields low green forage from initial cuttings. Therefore an experiment was conducted during the winter season (*rabi*) of 1989–90, 1990–91 and 1991–92 at Durgapura, to find out suitable variety of lucerne and optimum seed rate, and effect of mixing Chinese cabbage (*Brassica chinensis* L.) seed with lucerne seed for higher green-forage yield in the semi-arid eastern plains zone of Rajasthan. Three varieties ('T 9', 'Anand 2' and 'SS

Table 1. Effect of varieties and seed rates of lucerne and Chinese cabbage on total green-forage yield

Treatments	Total green-forage yield (q/ha) from 8 cuts			
	1989–90	1990–91	1991–92	Pooled
<i>Variety</i>				
'T 9'	821.30	758.33	620.83	733.48
'Anand 2'	848.61	811.11	685.65	781.78
'SS 627'	818.06	827.31	677.78	774.38
CD (P = 0.05)	NS	45.63	37.61	39.29
<i>Seed rate of lucerne (kg/ha)</i>				
20	787.50	772.69	632.41	730.86
25	829.63	794.44	669.44	764.50
30	870.83	829.63	682.41	794.28
CD (P = 0.05)	NS	45.63	37.61	39.29
<i>Seed rate of Chinese cabbage (kg/ha)</i>				
0	788.89	785.49	647.22	740.53
2	869.75	812.35	675.62	785.89
CD (P = 0.05)	39.87	NS	NS	32.08
CV (%)	8.69	8.42	8.39	

627') of lucerne and 3 seed rates (20, 25 and 30 kg/ha) with and without Chinese cabbage seed mixture (2 kg/ha) were replicated thrice in randomized block design. The soil of the experimental site was loamy sand in texture with pH 8.0, having organic carbon 0.15%, available P_2O_5 86.6 kg/ha and available K_2O 234 kg/ha. The crop was sown in the second fortnight of October by broadcast method during all the 3 years and fertilized with an uniform dose of 35 kg N/ha and 80 kg P_2O_5 /ha through urea and single superphosphate respectively. Half dose of N and full dose of P_2O_5 were applied basal and the remaining N was given after alternate cuts in equal splits. In all 8 cuttings were taken from the second fortnight of December to second fortnight of June in each year.

Varieties 'Anand 2' and 'SS 627' gave significantly higher green-forage yield over 'T 9' during 1990–91 and 1991–92. However, all the 3 varieties performed equally during 1989–90. But pooled results (Table 1) showed that varieties 'Anand 2' and 'SS 627' gave significantly higher green-forage yield by 48.3 (6.6%) and 40.9 q/ha (5.6%) respectively over 'T 9'. Patel *et al.* (1987) and Patel *et al.* (1990) also reported superiority of 'Anand 2' to 'LL Comp 3', 'T 9' and 'Anand 3' for forage yield; and 'Anand

2' gave higher crude protein yield than 'T 9' and 'LL Comp 3'.

Pooled results (Table 1) showed that sowing of lucerne with 30 kg seed rate/ha gave significantly higher green-forage yield by 63.42 q/ha over 20 kg seed rate/ha (730.86 q/ha), which was significantly at par with 25 kg/ha seed rate. Similar trend was also reported by Patel *et al.* (1987).

During 1989–90, the mixing of 2 kg seed/ha of Chinese cabbage with lucerne seed significantly increased the green-forage yield by 80.86 q/ha over no mixing, but during 1990–91 and 1991–92 mixing of Chinese cabbage seed did not cause any increase in green-forage yield. The pooled data showed that mixing of 2 kg/ha seed of Chinese cabbage with lucerne seed gave significantly higher green-forage yield by 45.36 q/ha over the treatment where Chinese cabbage seed was not mixed with lucerne seed (740.53 q/ha).

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