

Response of Sewan (*Lasiurus indicus*) to Saline Water Irrigation and Fertilizer Application for Fodder Production in Arid Western Rajasthan

N.D. Yadava , N.P. Singh , M.L. Soni and R.K. Beniwal

Central Arid Zone Research Institute ,Regional Research Station,Bikaner-334004

ABSTRACT

Field experiment was conducted with Sewan at Bikaner on sandy loam soil during 2003-04 with application of nitrogen fertilizer under saline water irrigation ($EC > 9.5dS/m$). The fertilizer application had significant effect on growth and yield of sewan grass. Two irrigations (I in November & II in February) with saline water from tube well through sprinkler showed good response on green and dry forage yield of sewan. The nitrogen application at 40 kg/ha significantly increased the plant height and number of tillers /plant over no nitrogen (control). Highest green and dry forage yield 88.57, 95.38 and 29.08, 30.19q/ha in I and II cutting, respectively was recorded with the application of 40 kg N/ha as basal in month of July which was at par with 30kgN/ha and 40kgN/ha applied in two splits (50% July and 50% in November after I irrigation). Total green and dry forage yield per annum increased up to 48 per cent more over single harvest (monsoon season) of sewan only by two irrigations of saline water (from November to March).

INTRODUCTION

Sewan (*Lasiurus indicus*) is a perennial grass which mainly provides fodder for animals in the extreme arid part of western Rajasthan. The grass is generally grown in rainfed condition under the mixed cropping system with arable crops. The grass yields once in a year under rainfed condition but it continues to regenerate and yield for 6-10 years .It is known to be one of the most drought hardy grass among all the desert grasses after the establishment with its strong root system and also checks the soil erosion. Due to the same growing zone of grass and arable crops under rainfed interdunal plains the grass is going to disappear from the field due to heavy mechanization. In the areas where canal irrigation has been introduced, the high value irrigated crops have replaced the grass. Due to poor water supply in canal again the cropping is going to be non-remunerative and because of poor production the scarcity of fodder is going to be a major problem for feeding the cattle of the region. The research results showed that the Sewan grass has a good response to irrigation and higher yield could be taken under limited irrigation situations. The irrigation increases the height and number of tillers per plant with good green and dry forage yields in comparison to rainfed conditions (Singh *et al.*, 1995). The application of fertilizer up to 30kg/ha has significantly increased the dry matter yield of grass (Bhati *et al.*, 1980).The most of the tube wells in the Bikaner district have saline water by which most of the crops could not be grown but this water can be used for the fodder production . The present investigation was carried out with the objective to find out the production potential of Sewan under saline water irrigation with nitrogen fertilizer.