



Effect of land configurations on forage yield of pasture grasses

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Abstract : An experiment was carried out during the *Kharif* seasons of 2001-02, 2002-03 and 2003-04 to study the effect of land configuration methods on forage yield of pasture grasses at Grassland Research Station, Junagadh Agricultural University, Dhari. The treatments comprised of two grasses *viz.*, anjan grass (*Cenchrus ciliaris*) and marvel grass (*Dichanthium annulatum*) and five methods of land configuration (Earthing up at 25 days after sowing, dead furrow after every third row, compartment bunding after every third row, trench cum mulching and flat sowing). In order to find out the suitable pasture grass and appropriate land configuration method for obtaining maximum biomass yield, the experiment was laid out in strip plot design and replicated thrice. The pooled results showed that marvel grass (*Dichanthium annulatum*) produced significantly maximum green forage, dry matter yield and tillers/plant as well as it also recorded the highest net return and benefit cost ratio (BCR) as compared to anjan grass (*Cenchrus ciliaris*). However, there was non significant difference among these grasses for crude protein content, crude protein, yield, plant height and soil moisture content. Trench cum mulching and earthing up methods were being at par with each other and produced significantly the higher green forage, dry matter yield, tillers/plant, plant height and soil moisture content over remaining all the land configuration methods in pooled results. Crude protein content also higher in the entire land configuration compared to control (flat sowing). The earthing up method recorded the highest net return (1385 Rs./ha) and the highest benefit cost ratio (1 :0.86).

Key Words : Land configurations, Forage yield, Economics, Anjan grass, Marvel grass

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INTRODUCTION

India has huge livestock wealth which plays an important role in its agricultural economy. The deficiency of green forage is one of the major causes of malnutrition in the livestock resulting in low animal productivity. The annual production of green and dry fodder in the country is 250 and 441 million tones as against the requirement of 932 and 780 million tones, respectively (Anonymous, 2000). At present, natural grassland areas have been degraded through over grazing and careless exploitation of the biodiversity. It is now a days considered important to utilize the uncultivated land and cultivated wastelands for developing forage resources and to maintain

and manage the natural grassland areas along with by adopting appropriate soil manipulation technology. In this context, various pasture grasses *viz.*, anjan (*Cenchrus ciliaris*), marvel (*Dichanthium annulatum*) can play an important role in increasing the availability of green forage by utilizing the uncultivated land and cultivated wastelands. Rainfall is most important and single factor affecting crop productivity in the rainfed areas. The erratic rainfall pattern coupled with poor soil and their degradation and consequent scanty vegetation cover renders the arid and semi arid environments very fragile, resulting into poor agriculture productivity. In this context, appropriate land configuration methods are very useful for capturing and harvesting of rain water and ultimately

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