

Research  
Paper

## Soluble oxalate content accumulation and yield of certain Hybrid Bajra Napier genotypes during summer and their influence on animal diet

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### ABSTRACT

Fourteen hybrids of Bajra Napier genotypes were analysed for water soluble oxalate content and yield at 40<sup>th</sup> and 80<sup>th</sup> day of harvestings. Oxalate content decreased with delayed harvest (80<sup>th</sup> Day) compared to early harvest (40<sup>th</sup> day); however, it ranged between 2 – 3 % in all the hybrid genotypes which is under permissible tolerance limits. APBN-1 and PBN-91 are emerging as the promising genotypes with respect to oxalate and biomass production than the standard checks at 40<sup>th</sup> day of harvest.

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**Key words :** Annual increment, DBH, Dryland, Tree species

## INTRODUCTION

In Andhra Pradesh only two per cent of cultivable area is used for fodder production. As per the 1993 census, the fodder availability is 247 MT as against the requirement of 632 MT showing a deficit of 60 per cent to meet the demand of the livestock sector (Out line of Agriculture situation in A.P. 1993). The development of Pusa Giant Napier grass (PGN), a hybrid genotype between Bajra' (*Pennisetum typhoides*) and Napier or Elephant grass (*Pennisetum purpureum*), at the IARI, New Delhi, could be considered as a major break through in fodder production. With high yields of 2500-3000 quintals/hectare/year of green matter under irrigated conditions, it has established itself throughout the country.

The oxalate context of fodder grasses is of great importance as it is known to be highly toxic to grazing animals.

The occurrence of carbonate calculi in the urinary tract of cattle ingesting such grasses is associated with high oxalic acid (Lal *et al.*, 1966). There were certain apprehensions prevailing in some quarters that the PGN has high oxalate content and as such, it was not found to be a very suitable fodder. The present investigations were,

therefore, undertaken on certain hybrid bajra napier cultivars to obtain information on oxalate content and yield aspects at 40<sup>th</sup> and 80<sup>th</sup> day of harvesting.

## MATERIALS AND METHODS

The experimental materials consisted of fourteen diverse genotypes of hybrid bajra napiers which were evaluated during summer, 1995 at Livestock Research Institute, Rajendranagar, Hyderabad, Andhra Pradesh. The genotypes were space planted with root slips, adapting 50 x 50 cm spacing in a Randomized Block Design with three replications. Recommended package of practices to raise healthy crop were followed. Observations were recorded on five competitive plants selected randomly per each genotype per each replication. First harvest was done at 40<sup>th</sup> day after planting (early harvest) and second harvest was done at 80<sup>th</sup> day after planting (late harvest). Water soluble oxalates were estimated by following Abaza *et al.* (1967) method and was expressed in percentage. Further, yield was estimated by Dewey and Lu (1959). Calcium content in fodder of these genotypes was determined by adopting standard procedures laid out Tandon (1993). A ratio between calcium and water soluble