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RESEARCH ARTICLE

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Identification of promising agave genotypes for marginal and sub-marginal lands

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ABSTRACT

A field experiment was carried out at Regional Agricultural Research Station, Bijapur, Karnataka during 1999 to 2009 to know the performance of eight genotypes of agave under marginal and sub-marginal lands. Observation like morphological characters (*viz.*, plant height, number of leaves, leaf length and lead breadth), yield characters and fibre quality were recorded from agave plantations. Of the eight species studies, BAS-1 recorded higher leaf number per clump (43), leaf length, leaf breadth, number. of leaves, plant height, leaf yield, breaking load, breaking extension and tenacity. Economics also proved that BAS-1 (B:C ratio 4.41) was highly profitable for marginal and sub-marginal lands.

KEY WORDS : Agave, Economics, Marginal lands, Tenacity

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INTRODUCTION

Vast stretches of lands in rainfed areas have been subjected to severe soil erosion exposing the parent material or making these soils highly improvise where northing worth could be grown. These land are most suited for alternate land use system, species yielding fibre are preferred. An example of fibre yielding species is the agave.

Agave (Family : Amaryllidaceae) is short stemmed plant, bearing a rosette of long erect point fleshy leaves noted for their pale white to golden yellow fibre content. It is highly drought resistant species, suited for harsh areas and could come up with practical no or little care (Suresh *et al.*, 1992).

The success of Indian farming is very much dependent on the behaviours of the monsoon. Under such conditions the resource poor Indian farmer needs to innovate to make a meaningful living. Such innovations would be planting of agave (sisal) on field bunds, across

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gullies and as live bunds for soil and water conservation. About 7000ha of waste land is under sisal in Orissa (Thaingarajan, 1986) which is the leading state followed by Bihar, Maharastra and West Bengal.

Agave fibre is strong coarse, flexible and used for making ropes, twine, fishing nets, door mats etc. and the short fibres are used for making rope and brushes (Anonymous, 1984). The material left after decorticating the leaves is used in craft paper and paper board making. Srinivasalu Rao *et al.* (1983) reported the process of the extraction of Hecogenin a steroid for production of corticosteroids from sisal juice. Thus knowing the multivarious utility of this plant species it becomes imperative for us to organize a core of plantations of this plant species. Now choice of species plays a vital role in the productivity and economy of the entrepreneur. To assess the potentiality of the species, locally cultivated *Agave* species have been evaluated for their morphological and yield characters including the fibre quality.

MATERIALS AND METHODS

The experiment was carried out at Regional Agricultural Research Station, Bijapur during 1999 to 2009 under randomized block design with three replications. The agave genotypes were planted in a field during July 1999 with a spacing of $2 \times 1 \text{ m}$.

Treatment details:

- BAS-1 : Agave americana (Burma)