

## CAZRI Gum Inducer for Gum Production from *Acacia senegal*: Potential and SWOT Analysis

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**Abstract:** The technique of increased gum Arabic production from *Acacia senegal* using CAZRI gum inducer is a popular and well accepted strategy among the rural folk of Indian arid zone. It was evident the increased demand for the CAZRI gum inducer (ethephon) over years for the gum Arabic production in arid Rajasthan. Central Arid Zone Research Institute, Jodhpur, is the sole supplier of CAZRI gum inducer, therefore the increased sale trends revealed its acceptance and wide adaptability. It was also reflected by the increased sale of *A. senegal* seedlings from CAZRI for field planting. This paper summarizes the efforts to develop participatory mode of increased gum production and its SWOT (Strength, Weakness, Opportunity and Threats) analysis in the villages, where this technology was not known to the farmers. The analysis revealed the success of participatory gum production technology by win-win situation to all its stakeholders. The success of gum exudation depends on proper utilization of this technique. Hence, decentralized availability of gum inducer through any authorized distribution system is desirable to ensure the lateral spread of CAZRI's proven technology, which also assures the distribution of quality gum Arabic inducer at a low price.

**Key words:** *Acacia senegal*, gum inducer, participatory, SWOT analysis, technology.

The Indian hot arid region spreading over an area of about 0.32 million km<sup>2</sup> forms a continuous stretch covering the states of Rajasthan, Gujarat, Punjab, Haryana and parts of Maharashtra, Karnataka and Andhra Pradesh. Low and erratic rainfall, extreme temperatures, high wind velocity and high evapo-transpiration are characteristic features of this region. The climate and edaphic features of arid regions are very inhospitable; hence the natural vegetation of this region is sparse and mainly consists of pasture lands. In such circumstances, perennial-based farming system has the potential to be practiced due to the ability of perennials to withstand adverse climatic conditions. Among them *Acacia* and *Prosopis* based agrisilviculture systems are time tested traditional farming practices of this region. *Acacia* based agroforestry system gives higher returns compared to sole cultivation of pearl millet or trees. *Acacia senegal* provides seeds that can be used as vegetable and the gum extraction from the tree increases returns from this system (Harsh *et al.*, 2000). Indian arid zone is the most populated arid zone of the world with an average population of 127 persons km<sup>-2</sup> (as per 2011 census), against 6-8

persons km<sup>-2</sup> in other arid zones of the world. Thus human factor also contributes to acute biotic stress on these sparse natural resources. Decline in common property resources is a result of multiple biotic and abiotic factors, which is often not easy to measure, especially in present scenario of climate change. Considering the above facts, restoration/rehabilitation of the marginal rangelands in participatory mode is the possible alternate to protect the available resources while ensuring the improvement of quality of life (Jodha, 1985).

In arid north-western parts of India, *Prosopis cineraria* and *Acacia senegal* are prominent tree species which satisfy the food, fodder and fuel wood requirements of rural folk. Among them, the market and medicinal value of gum Arabic and seeds as vegetable make *A. senegal* a commercial tree of the region. However, the natural gum production from *A. senegal* is meager despite the occurrence of extensive stands of the species in the drier parts of Rajasthan, Gujarat, Madhya Pradesh and Haryana. Consequently, the country imports 5,000 tones of the gum Arabic annually, especially from Sudan, costing Rs 7.3 million. The average international price of the Sudanese gum Arabic is ~US \$ 1,500 t<sup>-1</sup> (Anon, 2009). On

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