

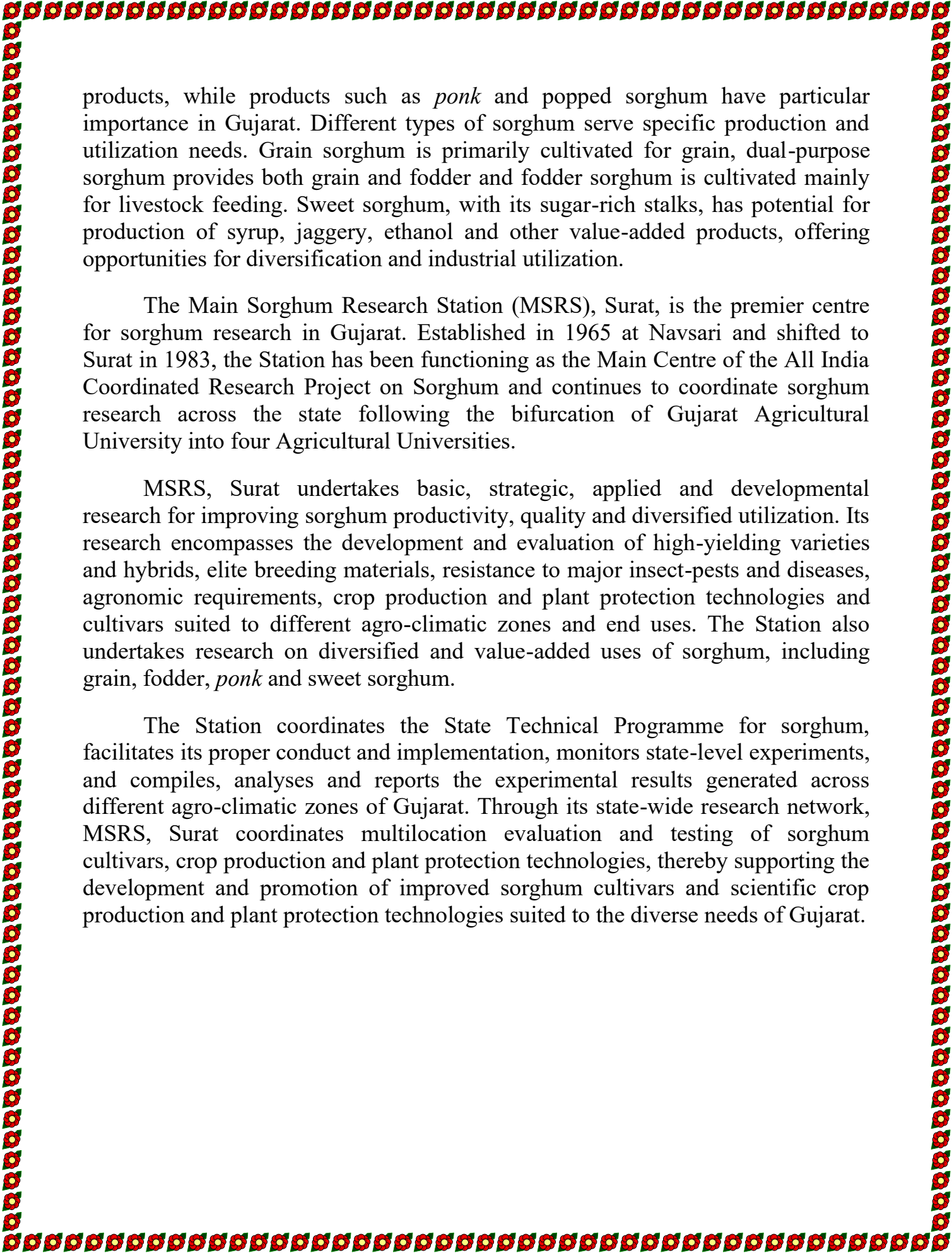
INTRODUCTION

Sorghum is an important cereal and multipurpose crop, providing nutritious grain, valuable fodder and a range of opportunities for food, feed and industrial uses. It is cultivated in most districts of Gujarat under diverse agro-climatic and production conditions. In South Gujarat, sorghum is predominantly grown for grain, while in North and Central Gujarat, Saurashtra and Kutch, it is cultivated for both grain and fodder. In areas with a well-developed dairy sector, sorghum is cultivated mainly for fodder. Thus, the crop contributes significantly to food, feed and livestock production and provides farmers with value from both grain and fodder.

A major strength of sorghum is its wide adaptability and resilience to diverse production conditions. It is well suited to hot and dry environments and can withstand periods of drought and moisture stress. The crop can perform under relatively poor and low-input conditions, while also responding well to improved management, adequate moisture, balanced nutrition and other recommended production practices, enabling improved varieties and hybrids to express their yield potential under favourable and high-input production systems. Certain sorghum genotypes also possess relatively higher tolerance to soil salinity and considerable genetic variation for salinity tolerance provides opportunities for the development and identification of cultivars suited to salt-affected soils. These characteristics make sorghum an important climate-resilient crop across a wide range of environments, from moisture-stressed and low-input conditions to favourable and high-input production systems.

Sorghum has considerable nutritional and economic importance. Its grain contains important nutrients and is increasingly recognized as a nutritious food grain, particularly with growing awareness of healthy and diversified diets. Sorghum grain is also used as poultry feed, while its fodder and stover are valuable livestock feed resources. The crop therefore contributes to food, nutritional and livestock-feed security. Its dual value as grain and fodder also provides an element of income and livelihood security to farmers. Even when adverse weather conditions adversely affect grain production, the crop can still provide useful fodder or stover, helping farmers recover part of the crop value. Under favourable conditions, both grain and fodder can provide economic returns.

Sorghum has considerable scope for diversified utilization and value addition. Grain and flour are used in a variety of traditional and value-added food



products, while products such as *ponk* and popped sorghum have particular importance in Gujarat. Different types of sorghum serve specific production and utilization needs. Grain sorghum is primarily cultivated for grain, dual-purpose sorghum provides both grain and fodder and fodder sorghum is cultivated mainly for livestock feeding. Sweet sorghum, with its sugar-rich stalks, has potential for production of syrup, jaggery, ethanol and other value-added products, offering opportunities for diversification and industrial utilization.

The Main Sorghum Research Station (MSRS), Surat, is the premier centre for sorghum research in Gujarat. Established in 1965 at Navsari and shifted to Surat in 1983, the Station has been functioning as the Main Centre of the All India Coordinated Research Project on Sorghum and continues to coordinate sorghum research across the state following the bifurcation of Gujarat Agricultural University into four Agricultural Universities.

MSRS, Surat undertakes basic, strategic, applied and developmental research for improving sorghum productivity, quality and diversified utilization. Its research encompasses the development and evaluation of high-yielding varieties and hybrids, elite breeding materials, resistance to major insect-pests and diseases, agronomic requirements, crop production and plant protection technologies and cultivars suited to different agro-climatic zones and end uses. The Station also undertakes research on diversified and value-added uses of sorghum, including grain, fodder, *ponk* and sweet sorghum.

The Station coordinates the State Technical Programme for sorghum, facilitates its proper conduct and implementation, monitors state-level experiments, and compiles, analyses and reports the experimental results generated across different agro-climatic zones of Gujarat. Through its state-wide research network, MSRS, Surat coordinates multilocation evaluation and testing of sorghum cultivars, crop production and plant protection technologies, thereby supporting the development and promotion of improved sorghum cultivars and scientific crop production and plant protection technologies suited to the diverse needs of Gujarat.