

## Economic evaluation of sorghum based cropping systems

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### ABSTRACT

This study was conducted in Amravati and Bhatkuli Tahsils of Amravati district and five villages from each tahsil which were adopting sorghum based cropping systems. The data was collected for the year 2008-2009 from 24 cultivators for each system randomly. The ratio return over the investment at cost 'A' were 2.34, 2.58, 2.47, 2.42, 2.64 and at cost 'B', the ratio were 1.64, 1.85, 1.71, 1.68, 1.83 respectively for sole sorghum, sorghum + tur, sorghum + soybean, sorghum + cotton, sorghum + green gram. In case of sorghum + tur, the ratio at cost 'C' showed higher (*i.e.* 1.95) and lower in sole sorghum (*i.e.* 1.39). Thus, the study indicated that the sorghum + tur was found to be most profitable cropping system followed by sorghum + cotton cropping system.

### INTRODUCTION

Sorghum is the fifth most important cereal crop in the world. Increasing importance as a source of food, feed, industrial raw material and other like fibres are used in wall board fences, biodegradable packaging materials and solvents. The nutritional value of sorghum grains contain about 74.1 per cent starch, 11.2 per cent proteins, 37 per cent fats, 2.6 per cent crude fibre, 1.5 per cent ash and 0.1 per cent tanni. It is also used for preparation of syrups and penicilline medicine etc. The major states in the country where this cereal grain is produced are Maharashtra, Karnataka, Gujarat, Madhya Pradesh, Andhra Pradesh, Rajasthan and Uttar Pradesh.

Maharashtra ranks third in terms of area which covers around 48 lakh hectares with production of 3.90 million tones and productivity 760 kg/ha. during the year 2005-06. The major sorghum growing districts are Amravati, Akola, Yavatmal, Wardha, Nagpur, Bhandara, Chandrapur, Gadchiroli, Solapur, Pune, Bijapur, Nanded and Mehboob nagar. Sorghum is grown in Vidarbha on large scale and occupies third position in average and first position in production in the state with the advent of hybrid technology. In view of limited land, the increase in production can be achieved either by increasing the area under cultivation or through growing more than one crop on some pieces of land in the same year or in sequence. Adoption of proper cropping system can also be responsible for maintaining and improving

the soil fertility. Various sorghum based cropping systems are therefore emerged in the recent years. Cropping is commonly grouped under two broad terms *i.e.* inter cropping and intensive cropping. A major crop in particular agro-climatic zone dominates the system and hence it is based on that particular crop.

### METHODOLOGY

The data in respect of sorghum based cropping system adopted by the selected farmers from Amravati district were used for the study. The following sorghum based cropping system are generally followed in the study area namely Group I – Sole Sorghum, Group II – Sorghum + Tur, Group III – Sorghum + Soybean, Group IV – Sorghum + Cotton, Group V – Sorghum + Greengram. For the present study, five villages each from Amravati and Bhatkuli tahsils of Amravati district were selected purposively. From the list of cultivators of the above mentioned sorghum based cropping systems, 24 cultivators were selected randomly for each of the cropping system.

The data pertaining to family information, land use pattern, cropping pattern, livestock, implements and machinery etc. were collected for the year 2008-09. The information about input utilization and output of each cropping system have also been collected as per the requirement. The collected data were tabulated and analyzed by using the appropriate statistical tools and production function in order

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