

## Studies on economic returns of sugarcane based intercropping system

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### ABSTRACT

A field experiment was conducted at Marathwada Agricultural University, Parbhani for two crop seasons *i.e.* 2002-04 and 2003-05 to find out the feasible, remunerative intercrop in intercropping system with preseasonal sugarcane. The results indicated that the gross monetary returns was higher in sugarcane + potato system, during both the years and in pooled analysis. However the highest NMR was recorded in sugarcane + Wheat system (44128 Rs./ha) in pooled analysis. Among the intercropping systems, sugarcane with wheat was more remunerative in respect of net returns and benefit:cost ratio.

**Key words :** Intercropping, remunerative, GMR, NMR, B:C ratio

### INTRODUCTION

The cost of production of sugarcane is increasing every year. The increase in cost of production was mainly on account of increase in the price of key inputs such as fertilizers, irrigation water, insecticides and human labour charges. The increasing cost of production of sugarcane and reduced profit margin has compelled farmers to think about the cropping systems which are economically feasible. Fortunately sugarcane provides considerable scope for intercropping with short duration crops and thus improves over all productivity and profitability of the cane growers. Keeping this in view a field experiment was conducted to find out the suitable and profitable intercrops in sugarcane at Marathwada Agricultural University, Parbhani.

### MATERIALS AND METHODS

The field investigation was undertaken on medium black soil at Department of Agronomy farm, College of Agriculture, Marathwada Agricultural University, Parbhani as autumn sugarcane in 2002-04 and 2003-05 with object to find out remunerative and compatible intercrops in sugarcane. The treatments comprising of four intercropping systems *viz.*, sugarcane + potato, sugarcane + mustard, sugarcane + wheat and sugarcane + cowpea along with sole crop of sugarcane. All other cultural operations and plant protection measures were given as per recommendation and need of the component crops.

The economic analysis *viz.*, GMR, NMR and B:C ratio were carried out based on cost of cultivation, cane yield and intercrop yield. The gross monetary returns (Rs/ha) accrued due to different treatments were worked

out by considering market prices during the experimental year.

Net monetary returns (NMR) in Rs/ha of each treatment =

Gross monetary returns (GMR) of treatment – cost of cultivation of treatment

$$\text{B:C ratio} = \frac{\text{GMR of a treatment}}{\text{Cost of cultivation}}$$

### RESULTS AND DISCUSSION

The results obtained from the present investigation are summarized below :

#### Gross monetary returns (GMR):

During first year of experiment the maximum gross monetary return was obtained from sugarcane + potato (Rs. 86881/ha) followed by sugarcane + wheat (79969 Rs./ha), while lowest gross return was observed in sole sugarcane (Table 1). The intercrop have contributed to increase the returns. Similar trend as that of first year was recorded in second year. The sugarcane + potato (Rs. 83182/ha) and sugarcane + wheat (Rs. 78333/ha) recorded significantly higher gross monetary returns than rest of the cropping system. The lowest gross monetary return was noticed in sole sugarcane.

In pooled analysis sugarcane + potato intercropping system (Rs. 85032/ha) and sugarcane + wheat intercropping system (Rs 79151/ha) recorded significantly more gross monetary returns than sugarcane + mustard (Rs. 70784/ha) and sole sugarcane (Rs. 62150 /ha). However, later both systems were at par with sugarcane + cowpea (Rs. 73522/ha). Similar results of increased

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