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MANGO CULTIVATION IN DHARWAD DISTRICT : AN ANALYSIS OF COST AND RESOURCE PRODUCTIVITY

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INTRODUCTION

Cultivation of fruit is a very important factor contributing to the prosperity of a nation. It helps in maintenance of ecological balance and provides vitamins and minerals, which are vital for human health.

Often per capita fruit consumption is taken as an index of standard of living of a country. The Indian Council of Medical Research (ICMR) has recommended consumption of 120 gms of fruits per capita and as many variety as season permits. But the per capita consumption of fruits in India is only 40 gms. There is a potential for exporting raw and processed fruits.

India occupies prominent place in the cultivation of mango. It occupies 60.25 per cent of total area under mango in the world. In India, among fruit crops it ranks first both in area and production. During 1992-93 the production of mango was 8.5 million tonnes produced in an area of 1.1 million hectares. The principal States cultivating mango are Uttar Pradesh, Bihar, Andhra Pradesh, Maharashtra, West Bengal and Karnataka.

Mango can be grown well in all types of soil, ranging from alluvial to lateratic soil, except black cotton soil, which are considered to be poor. The deep and well-drained loamy soil is considered best for mango. It prefers slightly acidic soil. It does well at a temperature ranging from 24-27°C. Higher temperature during maturity of fruit improves size and quality of fruits. It can do well in areas having rainfall ranging from 25 cms to as high as 250 cms. With this background an attempt has been made in this study to estimate the cost of cultivation of mango during its bearing period. Resource use efficiency was also studied in order to know efficiency of resources, which are used in its production process.

MATERIALS AND METHODS

Mango is cultivated throughout Dharwad district. However, the large-scale cultivation of mango is concentrated in Dharwad taluka. Hence, Dharwad taluka was selected. Mango is being cultivated in about 30 villages in Dharwad taluka. Six villages with high concentration of area under mango were selected. From each village 15 farmers were selected randomly, thus forming a total sample size of 90.

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The farmers were post classified into small, medium and large based on total mango holdings of the farmers, using formula.

$X \pm \neg 0.4255$ over- in all there were 30 small, 42 medium and 18 large orchards. For the purpose of achieving the specific objectives of the study, the data were subjected to tabular analysis and functional analysis.

Cobb-Douglas type of production function was fitted to evaluate resource use efficiency in the production of mango. The form of production function fitted was as follows :

$$= a X_1 b_1 \; X_2 b_2 \; X_3 b_3 \; X_4 b_4 \; x_5 b_5$$

Where,

Y = Yield of mango (000 fruits)

a = Intercept

X_1 = Land (hectares)

X_2 == Labour (man days)

X_3 = Plant protection chemicals (rupees)

X_4 = Farm Yard Manure (Cart loads)

X_5 = No. of trees (per hectare)

The Cobb-Douglas type production function was converted into log linear form and the parameters were estimated using ordinary least square technique.

$$Ln\, y = 1na + B_1 lnX_1 + b_2 lnX_2 + b_3 lnX_3 + b_4 lnX_4 + b_5 lnX_5 \ldots\ldots\ldots n$$

RESULTS AND DISCUSSION

A broad view of general characteristics of sample orchards is given in Table 1. The study covered 90 mango orchards consisting of 30 small, 42 medium and 18 large orchards. The average size of mango orchards were 0.59, 1.43 and 3.14 hectares in small, medium and large orchards respectively. The popular variety grown in the study area was Alphonso.

The spacing followed by sample orchards were 33'X33', 35'X35' and 37'X37' in small, medium and large orchards respectively. As a result, the number of trees per hectare worked out to 112 in small, 100 in medium and 88 in large orchards.

The age of sample mango orchards ranged from 5 to 60 years. The economic bearing period of mango orchard was found to be 60 years under field conditions.

Farmers with different size of holding had accepted mango cultivation. The absolute size of mango orchards increased with the size of holdings. Conspicuously all the farmers had grown the recommended Alphonso variety. There was a tendency for increase in plant density in smaller holdings. Small farmers opined that more number of plants could be accommodated per unit area since, they were able to take intensive care due to availability of family labour. The aspect of high density of planting needs to be considered in developing