Resource productivity of tomato in different seasons in western Maharashtra

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ABSTRACT

The tomato crop is grown in all the seasons *i.e. kharif*, *rabi* and summer. However, each season has its own peculiarities in terms of production, demand and supply, costs and prices, market preferences and comparative advantages. Considering all this, study on costs and returns of tomato crop grown in different seasons is very important and with this view in mind, the investigation, resource productivity of tomatoes in *kharif*, *rabi* and summer season was carried out during the years 2005-06 at Sangamner tehsil of Ahemadnagar district. The data was collected from 90 tomato growers by personal interview method with the help of pretested schedule on inputs utilization in tomato production. The results revealed that the regression coefficient of plant protection, nitrogen, phosphorus were positive but non-significant coefficient of multiple determination (R^2) was 0.829 which indicated that 82.90 per cent variation in all independent variables. 'F' value was highly significant (154.00) in *kharif* season. In *rabi* season, N, P and K were positive but non-significant coefficient of multiple determination (R^2) was 0.979 which indicated 97.90 per cent in *rabi* tomato production. In summer season R^2 was 0.986 which indicated that 98.60 per cent variation in tomato production explained due to variation in all independent variables.

Key words : Tomato fruits, Production function, Resource productivity

INTRODUCTION

Tomato (*Lycopersicon esculentum*) is one of the most popular and widely grown vegetables in the world ranking second in importance after potato in many countries. Tomato is grown on an area of 4.8 million hectares with the production of 74.62 million tones. The fruits are eaten raw or cooked. Tomato in large quantities is used to produce soup, juice, ketchup, puree, paste and powder. It supplies vitamin-C and adds variety of colours and flavours to the food. Green tomatoes are also used for pickles and preserves. Its many forms are adapted to wide range of soil and climates extending from the tropics to almost the Aretic circle. It has many other uses, tomato seeds contain 24 per cent oil used as salad oil and in the manufacture of margarines.

Tomato is also rich in medicinal value. The pulp and juice are digestible, mild aperients, promotes gastric secretion and blood purifier. It has antiseptic properties in intestinal infections. It is one of the best vegetables which keeps our stomach and intestine in good order.

Vegetables have proved to be important supplementary food crops which form an essential part of human diet of them tomato ranks first among processed vegetables and is next to potato in area and production in the world. In recent years, farm economists are taking a good deal of interest in production function analysis as it serves as fine tool for developing the economic aspects of agriculture production on a pattern that would guide cultivators to operate at the least cost and the maximum profit combinations. If there is no way add to land, adjustments in variable inputs such as irrigation water, fertilizers, improved seeds, implements, etc. are always possible. The crux of the problem is to know what amount of capital as an available input is needed to obtain a given net return. If this is made known, the farmer can strike at a better combination of reduced input factors for relatively high profits. The present investigation determine resource productivity and resource use efficiency in tomato crop production.

MATERIALS AND METHODS

Multistage sampling technique was used to select district, tehsil, villages and tomato growers. Sangamner tehsil of Ahemadnagar district was purposively selected because of its predominance in area of tomato. Production and having infrastructural facilities like irrigation, transport and marketing are well developed and hence the cultivation of tomato is done on large scale. From Sangamner tehsil 10 villages were selected, the list of tomato grower was stratified into three groups *i.e. kharif*, *rabi* and summer from each categories, three tomato growers were selected from each village. Thus, from 10 villages 90 tomato growers were selected. Cross sectional data were collected from 90 tomato growers by personal interview method with the help of pretested schedule. Data pertained to production of tomato for the year 2005-06. Tabular analysis, logarithmic linear multiple regression analysis were used to analyse the data. The Cobb-Douglas production function used to know either constant, increasing or decreasing marginal productivity. The marginal product equation is as follows :

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