Resource use efficiency of *kharif* and *rabi* onion in Ahmednagar district of Maharashtra state

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ABSTRACT

In Maharashtra, onion is commonly grown in *kharif* and *rabi* seasons. Study was carried out in Ahmednagar district of Maharashtra state with an aim to find out resource use efficiency of *kharif* and *rabi* onion production. Analysis of Cobb-Douglas production function for *kharif* onion reflected that sum of regression coefficient found to be 1.0419, indicating constant returns to scale. Male labour, female labour, manures and nitrogen were found significant indicating that there is scope to increase the use of these resources. For *rabi* onion, regression coefficient was found to be 0.9725, indicating constant return to scale. Area, manures, seed and nitrogen were found highly significant indicating that there is scope to increase the use of these inputs in *rabi* onion production.

Key words : Onion, Resource use efficiency, Cobb-Douglas production function, Regression coefficient, Marginal value product.

Onion (*Allium cepa* L.), is one of the important bulb crops grown from ancient times in India. References to edible onion can be found in the Bible, Koran and in inscriptions of ancient civilizations of Egypt, Rome, Greece and China. Onion relives heal sensations. It is used to relive insect bites and solar throat. It plays a part in preventing heat diseases. Onion occupies a large area in Western Asia extending perhaps from Palestine to India. Total area under onion in the world is 18.83 lakh hectares with annual production of 282.29 lakh tones and its productivity is 15 tones/ha. China and India are first and second in onion production in the worlds, respectively. In India, it is one of the oldest known vegetables and occupies an area of 3.95 lakh hectares with annual production of 42.33 lakh tones, which comes to about 21 per cent of the world area and 15 per cent of the world production. India ranks first in onion area, second in production and third in it's export.

The major onion growing States are Maharashtra, Orissa, Karnataka, Uttar Pradesh, Gujarat, Bihar and Andhra Pradesh. Maharashtra is the main supplier of onion to other states in India. The state is first in area and production of onion in the country. The state occupies 20 per cent area and 25 per cent production of onion in the country.

In Maharashtra, Nasik, Pune, Ahmednagar, Aurangabad and Satara are major onion producing districts. Ahmednagar district ranks second in production and third in area of onion. Total area under Ahmednagar district was around 13,000 hectares and production was about 208 700 tones. In onion production, production techniques, allocation of resources, minimization of cost and maximum profit are important aspects. The present investigation, therefore, is devoted to know the resource use efficiency in *kharif* and onion production.

METHODOLOGY

Multistage sampling technique was adopted to reach sample onion cultivators. In the first stage, Ahmednagar district was purposively selected on the basis of predominant area of onion after Nasik and Pune districts. In second stage, on area basis, Shevgaon and Newasa tahsils were selected. In third stage, six villages from each tahsils were randomly selected. In fourth stage, from each of the selected village list of *kharif* and *rabi* onion growers was obtained. And from that list, 05 sample onion growers were randomly selected. Thus, total sample size was 60 onion growers for *kharif* and *rabi* seasons, seperatly. Cross sectional data were collected from the sample onion growers by personal interview method with the help of pre-tested schedule for the year 2002-2003.

Cobb-Douglas production function was fitted to the data to estimate resource use efficiency with respect to each of the explanatory variables (Acharya and Pawar, 1977) The fitted equation was as follows-

$$Y = a\, x_1^{b_1} . x_2^{b_2} . x_3^{b_3} . x_4^{b_4} . x_5^{b_5} . x_6^{b_6} . x_7^{b_7} . x_8^{b_8} . e^u$$

Where,