

Resource productivity and resource use efficiency in *Rabi* onion production

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Received : April, 2011; Revised : July, 2011; Accepted : September, 2011

ABSTRACT

Investigation was carried out during the year 2009-2010 in order to study resource productivity and resource use efficiency in *Rabi* onion production. The results revealed that regression coefficient of area (0.904), seed (0.050) and potash (0.019) were highly significant at 1 per cent level. The regression coefficient of plant protection (0.032) was highly significant at 5 per cent level. Thus, it was inferred that these resources were underutilized and there was scope to increase them in onion production.

Shelke, R.D., Aher, V.K., Bhosale, M.Y. and Gharge, S.H. (2011). Resource productivity and resource use efficiency in *Rabi* onion production. *Internat. J. Com. & Bus. Manage*, 4(2): 342-344.

Key words : Onion, Production function, Regression coefficient, Resource use efficiency, Marginal value product

Onion (*Allium cepa* L.) is the member of family Liliaceae. Onion is commodity of mass consumption and is grown almost all over the country mainly by small and marginal farmers as this is a labour intensive crop. Maharashtra is reckoned as the leading onion producing state in India.

The onion growers in western Maharashtra are able to harvest good yield, however the net return obtained are fluctuating due to uncertainty of prices. The literature indicated that onion growers are not able to keep consistency in productivity, cost and return structure. The cultivation of onion can become economically profitable provided that, the production of the onion is done efficiently, for which adequate management of resources as well as to increase per unit resource use efficiency are necessary. It can also help to reduce the cost of production. By keeping in view its importance, the study was carried to know resource productivity and resource use efficiency in onion production.

METHODOLOGY

Multistage sampling design was used to select district, tehsil, villages and growers. In the first stage, Ahmednagar district was purposively selected, because

of availability of area under onion production, predominance in area after Nasik and Pune. In the second stage, Parner tehsil was selected, on the basis of highest area under *Rabi* onion. In the third stage, eight villages from Parner tehsil were selected on the basis of availability of area under *Rabi* onion cultivation. In the fourth stage, from each selected village, on the basis of total land holding they were divided into three size groups *i.e.* small (up to 2.0 ha), medium (2.1 to 4.0 ha) and large (above 4.0 ha). Thus, 32 cultivators were selected for each group. Thus, total respondents were 96. Cross sectional data were collected in relation to production of onion and use of resources namely, area, hired human labour, machine labour, seed, nitrogen, phosphorus, potash, plant protection and family human labour. With the help of correlation matrix of above variables, independent variables which were significant with respect to dependent variables were taken into consideration.

In functional analysis, linear and Cobb-Douglas production function were used for data. On the basis of goodness of fit (R^2), Cobb-Douglas production function (non-linear) was used to determine the resource productivity in onion production. The data were therefore, subjected to functional analysis by using the following form of equation:

$$Y = aX_1^{b_1} \times X_2^{b_2} \times X_3^{b_3} \dots \dots \dots X_n^{b_n} \cdot e^u$$

In this functional form 'Y' is dependent variable, 'Xi' are independent resource variables, 'a' is the constant representing intercept of the production function and 'bi' are the regression coefficients of the respective resource

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