RESEARCH ARTICLE

Resource productivity, resource use efficiency and optimum resource use in blackgram production

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ABSTRACT

Investigation was carried during the year 2006-2007 in order to study resource productivity, resource use efficiency and optimum resource use in blackgram production. The results revealed that regression coefficient of area (0.665) was highly significant at 1 % level while regression coefficients of machine labour (0.206) and seed (0.167) were positive and statistically significant at 5 % level. Thus, it was inferred that these resources were under utilized and there was scope to increase them in blackgram production. The ratios of MVP to price with respect to above resources were higher than unity. Optimum use of resource, where value of additional production would be equal to the cost of additional resource. So long as the specific return is more than the added cost, one should go on pushing up production till marginal cost becomes equal to marginal return.

INTRODUCTION

Blackgram [*Phaseoulus mungo* (L.)] is important pulse crop and mainly grown as rainfed crop. It has key role in diet which provides protein, fibre, calcium, carbohydrate and used in *papad, dal, dosa* etc. It is used as nutritive fodder specifically for milch cattle. It is used as green manuring crop. It has capacity to fix the atmospheric nitrogen. It also helps for preventing the soil erosion.

In Maharashtra, area under blackgram was 4.68 lakh hectares with the production of 2.00 lakh tonnes. In Marathwada region, area under blackgram was 2.08 lakh hectares with the production 0.95 lakh tones for the year 2005-06. By keeping in view its importance, the study was carried to study resource productivity, resource use efficiency and optimum resource use in blackgram production.

METHODOLOGY

Multistage sampling technique was used to select districts, tehsils, villages and blackgram farms. In the first stage, Parbhani and Nanded districts were purposely selected, because these districts were familiar to the investigators. In the second stage, Jintur tehsil from Parbhani district and Mukhed tehsil from Nanded district were purposely selected on the basis of the highest area under total pulses. In the third stage, eight villages were purposely selected from each selected tehsil on the basis

of highest area under blackgram. In fourth stage, the list of blackgram growers from each of the selected villages was obtained and four blackgram growers were randomly selected from each village. Thus, 64 blackgram farms were selected for the study. Cross sectional data were collected in relation to production of blackgram and use of resources namely, area, human labour, bullock labour, machine labour, seed, nitrogen, phosphorus, potash, manure and insecticides on farms for the year 2006-2007. With help of correlation matrix of the above variables, independent variables which were significant with respect to dependent variable were taken into consideration.

Cobb– Douglas production function was found to be the best fit to the data to estimate the resource productivity, resource use efficiency and optimum resource use with respect to each of the explanatory variables. The fitted equation was :

$$Y = ax_1^{b1} \cdot x_2^{b2} \cdot x_3^{b3} \cdot x_4^{b4} \cdot x_5^{b5} \cdot x_6^{b6} \cdot x_7^{b7} \cdot x_8^{b8} \cdot e^{u}$$

where,

Y	=	production of blackgram in quintals on farm
a	=	intercept
b_1	=	partial regression coefficient of specific resource (i =1, 2, 3, ….., 8)