

Economic Analysis of Mustard Cultivation in Varanasi District of Eastern Uttar Pradesh

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Received: 10 Nov 2023; Revised accepted: 28 Jan 2024; Published online: 16 Feb 2024

Key words: Cost of cultivation, Net returns, Mustard, Marginal farm, Small farm, Large farm

India is the fourth largest Oilseeds economy in the world. Oilseeds crops are the second most important determinant of agricultural economy, next only to cereals. Mustard is the third important crop in the world after Soybean and Palm oil. India is largest producer of oilseeds in the world and accounts for about 14 percent of the global oilseeds area, 7 percent of total vegetable oil production and 10 percent of total edible oils consumption. In India, cultivation of Mustard is mainly confined to Rajasthan, Madhya Pradesh, Haryana, Uttar Pradesh, West Bengal, Gujarat, Assam, Bihar and Punjab. Rajasthan and Uttar Pradesh are the major Mustard producing states in the country. The trend in area and production of Mustard crop has been estimated [1]. The sustainability of improved oilseeds production technologies has been examined [2]. The production and marketing of Groundnut in Tamil Nadu have been evaluated [3]. A study has been carried out on the supply behaviour of oilseeds [4]. The impact of technology mission of rapeseed and mustard production in Rajasthan was assessed [5].

The present study has been carried out in the Varanasi district of eastern Uttar Pradesh. The required information for the study has been collected from the sample farmers of marginal, small and large farm size groups. Farms with less the one hectare of holdings have been classified as marginal farms. Holdings between one to two hectares have categorized as small farms and holdings above two hectares have been categorized as large farms. For analyzing the economics of Mustard crop, the cost concepts developed by Commission for Agricultural Costs and Prices (CACP) have been used as described below:

Cost concepts

The cost concepts used in the study are described as under:

Cost A₁: It includes:

- (i) Wages paid to hired labor
- (ii) Charges of bullock labor
- (iii) Hired machinery charges and maintenance cost of owned machinery
- (iv) Cost of seed
- (v) Cost of Manure
- (vi) Cost of insecticides and pesticides

(vii) Irrigation charges

(viii) Interest on working capital

(ix) Land revenue

(x) Depreciation on farm implements and machinery

(xi) Miscellaneous expenses

Cost A₂: It includes:

(i) Cost A₁

(ii) Rent paid for leased in land.

Cost B: It includes:

(i) Cost A₂

(ii) Rental value of owned land

(iii) Interest on capital

Cost C: It includes:

(i) Cost B

(ii) Imputed value of family labor

Cost of cultivation

Cost of cultivation is defined as the cost incurred in production of a commodity in a unit area. In general, the unit of cost of cultivation is Rs. per hectare.

Measures of farm income

Gross income: Income derived by addition of gross sales and home consumption of farm products. It is monetary value of total products on the farm.

Farm business income: Farm business income is the earnings after deducting cost A from total earnings.

$$\text{Farm Business Income} = \text{Gross Income} - \text{Cost A}$$

Family labor income: It is the income received after deducting cost B from the gross income

$$\text{Family Labor Income} = \text{Gross Income} - \text{Cost B}$$

Net income: Net income shows the earning of farm as a whole after deducting the various expenses.

$$\text{Net Income} = \text{Gross Income} - \text{Cost C}$$

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Citation: Kumar R, Kumar A. 2024. Economic analysis of mustard cultivation in Varanasi district of Eastern Uttar Pradesh. *Res. Jr. Agril. Sci.* 15(1): 252-253.

Table 1 Cost of cultivation of mustard crop (Rs/ha)

Particular	Marginal farm	Small farm	Large farm
Hired human labor	12000	19315	20352
Seed	2260	2342	2400
Tractor / machinery	15500	13714	15595
Manure and fertilizer	7050	6417	7990
Irrigation charge	3500	3400	7300
Plant protection	1100	1820	3100
Interest on working capital	1455	1504	1757
Cost-A	42865	48512	58494
Rental value of owned land	12000	12000	12000
Interest on fixed capital	350	950	1190
Cost -B	55215	61462	71684
Family human labor	2700	3815	3952
Cost -C	57915	65277	75636

The cost of cultivation of mustard crop has been estimated for all the three farm size groups and presented in (Table 1). The total cost of cultivation in the Eastern Uttar Pradesh was Rs. 75636 on the large farms followed by Rs. 65277 on small farm and Rs. 57915 on the marginal farms. The cost of manure and fertilizer and hired human labor was highest on all the size of farms. The cost of hired human labor was highest on large farms followed by small and marginal farms. Cost of tractor and machinery was Rs. 15595 on large farms,

Rs. 13714 on small farms and Rs. 15500 on marginal farms. Cost A, cost B and Cost C were highest on large farms followed by small and marginal farms [6].

The net profit from mustard crop on all the categories of farms has been estimated and arranged in the (Table 2). The gross income was highest on large farms followed by marginal and small farms. However, the farm business income, family labor income and net income were highest on marginal farms followed by the large and small farms [7-8].

Table 2 Profitability in mustard crop cultivation (Rs/ha)

Particulars	Marginal farm	Small farm	Large farm
Total yield (qt/ha)	17	16	18
Gross income	120700	113600	127800
Farm business income	77835	65088	69306
Family labor income	65486	52138	56116
Net income	62785	48323	52164

SUMMARY

A study on costs and returns in the cultivation of mustard crop has been carried out in the eastern Uttar Pradesh. The required information regarding inputs and cultural practices in the cultivation of mustard crop have been collected from an appropriate sample of marginal, small and large farms. The cost of cultivation was highest on large farms followed by small and marginal farms. However, the net income was highest on marginal farms followed by large and small farms. Rapeseed mustard is the second most important and prominent oil seeds crop in India after groundnut. The mustard growing areas in

India are experiencing the vast diversity in the agroclimatic conditions. Mustard belongs to the group Cruciferae with several other species cultivated. The other crops under the 'Rapeseed and Mustard' category are Toria, Yellow Sarson, Brown Sarson, Gobhi Sarson and Black Mustard. Under marginal resource situations, the cultivation of mustard becomes less remunerative to the farmers. The study highlights that under marginal resource situations, mustard cultivation may be less remunerative for farmers. This underscores the importance of understanding the economic dynamics and resource management strategies for small-scale farmers to ensure profitability and sustainability in mustard cultivation.

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