Economic Affairs, Vol. **70**(03), pp. 301-306, September 2025
**DOI:** 10.46852/0424-2513.3.2025.17

AESSRA

RESEARCH PAPER

# An Economic Analysis of Costs & Returns of Blackgram Cultivation in Bundi District of Rajasthan

Vijay Gurjar[1], Sonu Jain[1*], Sheela Kharkwal[1], P.S. Shekhawat[1], Shivraj Kumawat[1], Manoj Kumar Sharma[2] and Arun Pratap Singh[3]

[1]Department of Agricultural Economics, S.K.N. College of Agriculture (SKNAU), Jobner, Jaipur, Rajasthan, India
[2]Department of Agricultural Statistics, S.K.N. College of Agriculture (SKNAU), Jobner, Jaipur, Rajasthan, India
[3]College of Dairy Science and Technology (SKNAU), Jobner, Jaipur, Rajasthan, India

*Corresponding author: sonujain.ageco@sknau.ac.in (**ORCID ID**: 0000-0002-1590-6711)

**Received:** 16-06-2025 **Revised:** 31-08-2025 **Accepted:** 10-09-2025

**ABSTRACT**

Blackgram is a valued crop and provides nutritious food for an expanding world population and will become increasingly important with climate change. High content of lysine makes it as an excellent complement to other food grains in terms of balanced nutrition. In Rajasthan, blackgram crop has an area of 2.96 lakh ha with 1.49 lakh tonnes production and productivity of 505 kg/ha during 2023-24. A sample of 100 black gram growers was taken randomly from each size group in proportion to the total number of growers in each size group i.e. small, semi-medium, medium and large size group. Primary data were collected for agricultural year of *kharif* season 2023 and analyzed through CACP Cost concepts, various techniques and tools and Garrett's technique for drawing relevant conclusions. The results revealed that, on an average, total cost of cultivation of blackgram was ₹ 28971.05 per hectare. It was highest i.e. ₹ 29646.25 per hectare on small farm and lowest i.e. ₹ 28343.84 per hectare on large farm size. Overall gross returns, net returns, farm business income and family labour income were ₹ 58421.25, ₹ 29450.20, ₹ 42942.91 and ₹ 31833.74 per hectare. Cost of production per quintal was highest (₹ 4296.56) for small farm and lowest for large farm (₹ 3414.92) with an overall average of ₹ 3847.52 per quintal. On an average, return per rupees was ₹ 2.02.

**HIGHLIGHTS**

- Total cost of cultivation of blackgram was ₹ 28971.05 per hectare.
- Gross returns, net returns, farm business income and family labour income were ₹ 58421.25, ₹ 29450.20, ₹ 42942.91 and ₹ 31833.74 per hectare.
- On an average, return per rupees was ₹ 2.02.

**Keywords**: Economics, Blackgram, Costs, Returns, Returns per rupee

Agriculture is one of the most important sectors in Indian economy. The share of the agriculture sector in India's gross value added (GVA) was around 17.2 per cent during the year 2023-24 (Economic Survey, 2023-24). Pulses are grown in virtually every corner of the globe. The total world acreage under pulses was about 95.97million hectares with production of 97.39 million tonnes with productivity of 1015 kg/ha yield during year 2022. The pulses accounts for 27.50 million hectares area with production of 24.26 million tonnes with productivity of 881 kg/ha in the country during the year 2023- 24 (Directorate of Economics & Statistics, DAC & FW, 2023-24). Rajasthan state occupies first position in area and second position in production of pulses. It accounted 19.89 per cent area and 13.73 per cent production of India. During 2023-24, Rajasthan state has an area of 5.47 million hectares with production

**How to cite this article:** Gurjar, V., Jain, S., Kharkwal, S., Shekhawat, P.S., Kumawat, S., Sharma, M.K. and Singh, A.P. (2025). An Economic Analysis of Costs & Returns of Blackgram Cultivation in Bundi District of Rajasthan. *Econ. Aff.*, **70**(03): 301-306.

**Source of Support:** None; **Conflict of Interest:** None

of 3.33 million tonnesand productivity of 610 kg/ha during year 2023-24under pulses (Directorate of Economics & Statistics, DAC & FW, 2023-24).

Black gram (*Vigna mungo*(L.) Hepper) is one of the important pulse crop of *kharif* season in India and also known as Urd. Black gram is used in the form of '*dal*' (whole or split, husked, and un-husked) or perched. It is used as supplementary nutritive fodder especially for milch animals. High content of lysine in urdbean makes it as an excellent complement to other food grains in terms of balanced nutrition. Blackgram is a rich source of protein, carbohydrates, fiber, ash, oil, amino acids mainly lysine, vitamins like thiamine, niacin, riboflavin and much needed iron and phosphorus. The dried seeds are used to make *dal*, soups, curries and added to various spiced or fried dishes (Sarvani *et al.* 2020). Blackgram can be grown throughout the year and adjust well into many cropping systems. It is mostly cultivated as a fallow crop after rice cultivation in India. Both local and international requirements for blackgram are exalted. This crop also plays a vital role in harbouring soil fertility by ameliorating soil physical properties and fixing atmospheric nitrogen. Being a drought resistant crop, suitable for dry land farming and principally used as an inter-crop with other crops (Gomathi *et al.* 2020).

India is the largest producer of black gram with 70 per cent of the world's production. It is the fourth most important pulse crop in India covering an area of about 35.36lakh ha, but producing only 23.19 lakh tonnes and thus, productivity was only 656 kg/ha during 2023-24 (Directorate of Economics & Statistics, DAC&FW, 2023-24). More than 90 per cent of blackgram production comes from states *viz*., Madhya Pradesh, Andhra Pradesh, Uttar Pradesh, Maharashtra, Tamil Nadu, Rajasthan, Jharkhand, Gujarat and Karnataka (Directorate of Economics & Statistics, DAC&FW, 2023-24). In Rajasthan, blackgram crop accounts 2.96 lakh ha area with 1.49 lakh tonnes production with productivity of 505 kg/ha during 2023-24. In Bundi district of Rajasthan, blackgram crop accounts 0.81 lakh ha area with 0.39 lakh tonnesof production and productivity of 478 kg/ha during 2022-23. It is mainly grown in Bundi, Tonk, Sawai Madhopur, Bhilwara, Baran, Kota, Ajmer and Jhalawar districts of Rajasthan (Rajasthan Agricultural Statistics at a Glance, 2022-23).

## METHODS

Bundi district of Rajasthan was selected purposively due to its first position in area under blackgram in the state. Out of six tehsils of Bundi District, two tehsils namely Nainwa and Keshoraipatan were selected purposively based on highest area under blackgram in Bundi district. Separate lists of all the blackgram growing villages from each selected tehsil were obtained from respective tehsil head quarter. Four villages namely Kanakpura and Bamangaon from the Nainwa tehsil and Notara and Utaranafrom the Keshoraipatan tehsil were selected randomly for the study. A sample of 100 black gram growers was taken randomly from each size group in proportion to the total number of growers in each size group i.e. small, semi-medium, medium and large size group. Primary data were used for the study as these were collected from the selected black gram cultivators using personal interview method with the help of pre-structured interview schedule. Primary data in respect of inputs used (human labour, machinery power, seed, fertilizer, irrigation charges, plant protection measures etc.) and output of black gram in monetary terms were collected for the *kharif* season 2023.

**Analytical tools:**

- The cost of cultivation of blackgram worked out using following CACP cost concepts:

  Cost $A_1$ : It includes all real expenditures in production

  Cost $A_2$ : Cost $A_1$ + Rent paid for leased in land

  Cost $B_1$ : Cost $A_1$ + Interest on fixed capital

  Cost $B_2$ : Cost $B_1$ + rental value of owned land + rent paid for leased in land

  Cost $C_1$ : Cost $B_1$ + Imputed value of family labour

  Cost $C_2$ : Cost $B_2$ + Imputed value of family labour

  Cost $C_3$ : Cost $C_2$ + 10 per cent of cost $C_2$ as management cost.

Gross income includes value of main product as well as by product.

Net income: Gross income-total costs (Cost C2)

Benefit-cost ration found out by using formula: BC ratio = Total cash inflow/total cash outflow.

Family business income (F.B.I.) = F.B.I = Gross income – Cost $A_2$

Family labour income (F.L.I.) = F.L.I. = Gross income – Cost $B_2$

$$\text{Returns per rupees: RPR} = \frac{\text{Gross returns (GR)}}{\text{Total costs (TC)}}$$

Cost of production per quintal (rupees) =

$$\frac{\text{Total cost of cultivation (rupees)}}{\text{Quantity of main product (quintal)}}$$

Operational Costs (O.C.) ratio = Variable cost/gross income

Overhead cost ratio = Fixed cost/gross income

Gross cost ratio = Total costs/gross income

## RESULTS AND DISCUSSION

### Economics of blackgram cultivation

Table 1 reveals that total costs of cultivation per hectare was ₹ 29646.25, ₹ 29187.56, ₹ 28706.53 and ₹ 28343.84 for small, semi-medium, medium and large farms, respectively and ₹ 28971.05 for overall farm size. As the farm size increases, total inputs costs were decreased because of efficient utilization of inputs. Operational cost was 59.04% (₹ 17501.90), 58.26% (₹ 17004.78), 57.43% (₹ 16485.42), 56.76% (₹ 16088.79) and 57.26% (₹ 16770.13) for small, semi-medium, medium, large and overall average farm size group, respectively (Singh *et al.* 2015). Total fixed cost was 40.96% (₹ 12144.35), 41.74% (₹ 12182.78), 42.57% (₹ 12221.11), 43.24% (₹ 12255.05) and 42.74% (₹ 12200.83) for small, semi-medium, medium, large and overall average farm size group, respectively. Maximum share was contributed towards machine labour which was 20.11% (₹ 5742.65) for overall farm size and 18.62% (₹ 5514.88), 19.25% (₹ 5615.72), 20.22% (₹ 5806.68) and 21.28% (₹ 6033.33) for small, semi-medium, medium and large farms, respectively (Kanade *et al.* 2017). Among fixed costs, maximum was contributed towards rental value of owned land and it was 33.73% (₹ 10000.00), 34.27% (₹ 10000.00), 33.84% (₹ 10000.00) and 35.28% (₹ 10000.00) for small, semi-medium, medium and large farms, respectively. On an average, rental value of owned land was ₹ 10000.00 per hectare and it accounted maximum share of 35.04 per cent in the total cost of cultivation. Minimum cost was of interest on working capital i.e. 0.76% (₹ 224.79 per hectare), 0.80% (₹ 235.32 per ha), 0.83% (₹ 239.38 per ha) and 0.86% (₹ 244.02 per ha) for small, semi-medium, medium and large farms, respectively with an overall average of 0.85% (₹ 235.88 per hectare) of the total cost of cultivation. Land revenue was not paid by the farmers as it is not applicable.

**Table 1:** Component wise costs incurred in blackgram cultivation on different farm size groups (In ₹/Ha)

| Inputs \ Farms size | Small | Semi-medium | Medium | Large | Overall |
|---|---|---|---|---|---|
| Total machine labour | 5514.88 (18.62) | 5615.72 (19.25) | 5806.68 (20.22) | 6033.33 (21.28) | 5742.65 (20.11) |
| Total human labour | 5172.15 (17.45) | 4630.42 (15.86) | 4260.85 (14.84) | 3845.10 (13.56) | 4477.12 (15.45) |
| Seed | 1722.28 (5.81) | 1765.68 (6.05) | 1823.98 (6.35) | 1852.25 (6.53) | 1791.05 (6.27) |
| Total fertilizer | 701.50 (2.37) | 718.91 (2.47) | 740.87 (2.58) | 779.33 (2.74) | 735.15 (2.72) |
| Manure | 3140.98 (10.54) | 2974.46 (10.19) | 2519.70 (8.77) | 2190.90 (7.72) | 2706.51 (9.47) |
| Plant Protection Chemicals | 380.00 (1.29) | 396.82 (1.36) | 413.72 (1.44) | 448.06 (1.58) | 409.65 (1.56) |
| Interest on working capital | 224.79 (0.76) | 235.32 (0.80) | 239.38 (0.83) | 244.02 (0.86) | 235.88 (0.85) |
| Miscellaneous charges | 645.32 (2.18) | 667.45 (2.28) | 680.24 (2.36) | 695.8 (2.45) | 672.20 (2.43) |
| Operational Costs | 17501.90 (59.04) | 17004.78 (58.26) | 16485.42 (57.43) | 16088.79 (56.76) | 16770.13 (57.26) |
| Rental value of owned land | 10000 (33.73) | 10000 (34.27) | 10000 (33.84) | 10000 (35.28) | 10000 (35.04) |
| Depreciation | 1040.35 (3.51) | 1075.25 (3.68) | 1110.10 (3.87) | 1140.95 (4.03) | 1091.66 (3.82) |
| Interest on fixed capital | 1104.00 (3.72) | 1107.53 (3.79) | 1111.01 (3.87) | 1114.10 (3.93) | 1109.17 (3.88) |
| Fixed costs | 12144.35 (40.96) | 12182.78 (41.74) | 12221.11 (42.57) | 12255.05 (43.24) | 12200.83 (42.74) |
| Total costs | 29646.25 (100) | 29187.56 (100) | 28706.53 (100) | 28343.84 (100) | 28971.05 (100) |

*Figures in the parentheses are percentages of total costs.*

**Cost concepts for blackgram cultivation:**

The table 2 shows that the cost $A_1$ for overall farm size was worked out as ₹ 15478.34 per hectare and ₹ 14755.49, ₹ 15424.96, ₹ 15708.32 and ₹ 16024.59 per hectare for small, semi-medium, medium and large farms, respectively. The cost $A_1$ was increased with the increase in farm size. Cost $A_2$ was same as cost$A_1$ which indicated that no leased land operated by selected farmers for cultivation of blackgram in the study area. Cost $B_1$ for overall farm size, small, semi-medium, medium and large farms worked out as ₹ 16587.51, ₹ 15859.49, ₹ 16532.49, ₹ 16819.33 and ₹ 17138.69 per hectare, respectively. This cost was also increased with the increase in size of farm holding. Cost $B_2$ for overall farms size worked out as ₹ 26587.51 per hectare and for small, semi-medium, medium and large farms, it was ₹ 25859.49, ₹ 26532.49, ₹ 26819.33 and ₹ 27138.69 per hectare, respectively. Cost $C_1$ was ₹ 18970.97, ₹ 19646.25, ₹ 19187.56, ₹ 18706.53 and ₹ 18343.84 per hectare on overall average farm, small, semi-medium, medium and large farms, respectively. Total costs of cultivation i.e. Cost $C_2$ for overall farm size worked out as ₹ 28971.05 per hectare and for other farms i.e. small, semi-medium, medium and large farms, it was ₹ 29646.25, ₹ 29187.56, ₹ 28706.53 and ₹ 28343.84 per hectare, respectively (Hazari *et al.* 2015; Khorne *et al.* 2014; Kumar and Dey 2017). The cost $C_3$ for overall farms size was estimated as ₹ 31868.14 per hectare and ₹ 32610.88, ₹ 32106.31, ₹ 31577.18 and ₹ 31178.22 per hectare on small, semi-medium, medium and large farms, respectively (Mistry *et al.* 2011; Tawale and Pawar, 2011; Sengar *et al.* 2020).

**Returns from the blackgram cultivation**

The table 3 reveals that farm business income for overall farm size estimated as ₹ 42942.91 per hectare and ₹ 38419.51, ₹ 40860.04, ₹ 44441.68 and ₹ 48050.41 per hectare towards small, semi-medium, medium and large farms, respectively. Farm business income was lowest to small farms and highest on large farm size group. Family labour income was found as ₹ 27315.47, ₹ 29752.50, ₹ 33330.67, ₹ 36936.31 and ₹ 31833.74 per hectare on small, semi-medium, medium, large and overall average farm size group, respectively. Family labour income was lowest on small farms and highest on large farms. It also shows that returns per rupee estimated to be 1.79, 1.93, 2.10 and 2.26 on small, semi-medium, medium and large farms, respectively and for overall farm size, it was worked out as 2.02. Gross returns for overall farm size estimated as ₹ 58421.25 per hectare and ₹ 53175, ₹ 56285, ₹ 60150 and ₹ 64075 per hectare for small, semi-medium, medium and large farms, respectively (Agarwal and Singh, 2015). The gross returns were low on small farms because of no timely hoeing, weeding, harvesting, low quality seed and unavailability of machinery and capital. Net returns for overall farm size worked out as

**Table 2:** Cost groups of blackgram cultivation on different farm size groups (in ₹/ha)

| Sl. No. | Cost groups | Small | Semi-medium | Medium | Large | Overall |
|---|---|---|---|---|---|---|
| 1 | Cost A1 | 14755.49 | 15424.96 | 15708.32 | 16024.59 | 15478.34 |
| 2 | Cost A2 | 14755.49 | 15424.96 | 15708.32 | 16024.59 | 15478.34 |
| 3 | Cost B1 | 15859.49 | 16532.49 | 16819.33 | 17138.69 | 16587.51 |
| 4 | Cost B2 | 25859.49 | 26532.49 | 26819.33 | 27138.69 | 26587.51 |
| 5 | Cost C1 | 19646.25 | 19187.56 | 18706.53 | 18343.84 | 18970.97 |
| 6 | Cost C2 | 29646.25 | 29187.56 | 28706.53 | 28343.84 | 28971.05 |
| 7 | Cost C3 | 32610.88 | 32106.31 | 31577.18 | 31178.22 | 31868.14 |

**Table 3:** Returns from blackgram cultivation on different farm size groups (in ₹/ha)

| Incomes | Small | Semi-medium | Medium | Large | Overall |
|---|---|---|---|---|---|
| Farm business income | 38419.51 | 40860.04 | 44441.68 | 48050.41 | 42942.91 |
| Family labour income | 27315.47 | 29752.50 | 33330.67 | 36936.31 | 31833.74 |
| Gross returns | 53175.00 | 56285.00 | 60150.00 | 64075.00 | 58421.25 |
| Net returns | 23528.75 | 27097.44 | 31443.47 | 35731.16 | 29450.20 |
| Returns per rupee | 1.79 | 1.93 | 2.10 | 2.26 | 2.02 |

₹ 29450.20. Net returns was highest with ₹ 35731.16 per hectare on large farms followed by ₹ 31443.47, ₹ 27097.44 and ₹ 23528.75 per hectare on medium, semi-medium and small farms, respectively and for overall average farm size, it was ₹ 29450.20 (Singh *et al.* 2015).

## Cost of cultivation per ha/production per quintal

The table 4 reveals that total costs for overall farms size, small, semi-medium, medium and large farms was worked out as ₹ 28971.05, ₹ 29646.25, ₹ 29187.56, ₹ 28706.53 and ₹ 28343.84 per hectare, respectively in cultivation of blackgram.

**Table 4:** Cost of cultivation per ha/production per quintal

| Cost Groups | Small | Semi-medium | Medium | Large | Overall |
|---|---|---|---|---|---|
| Total cost (₹/ha) | 29646.25 | 29187.56 | 28706.53 | 28343.84 | 28971.05 |
| Operational costs (₹/ha) | 17501.90 | 17004.78 | 16485.42 | 16088.79 | 16770.13 |
| Overhead costs (₹/ha) | 12144.35 | 12182.78 | 12221.11 | 12255.05 | 12200.83 |
| Cost of production (₹/qtl.) | 4296.56 | 3998.28 | 3680.32 | 3414.92 | 3847.52 |

The operational cost for overall farms size worked out as ₹ 16770.13 per hectare and it were ₹ 17501.90, ₹ 17004.78, ₹ 16485.42 and ₹ 16088.79 per hectare for small, semi-medium, medium and large farms, respectively. The overhead costs for overall farms size was ₹ 12200.83 per hectare and ₹ 12144.35, ₹ 12182.78, ₹ 12221.11 and ₹ 12255.05 per hectare for small, semi-medium, medium and large farms, respectively. Cost of production for overall farms size, small, semi-medium, medium and large farms worked out as ₹ 3847.52, ₹ 4296.56, ₹ 3998.28, ₹ 3680.32 and ₹ 3414.92 per quintal, respectively.

## Analysis of variance for cost of cultivation of chickpea on size of land holding of farmers

| Source of Variation | SS | df | MS | F |
|---|---|---|---|---|
| Cost Groups | 1318945260 | 3 | 439648419.91 | 4820.09** |
| Size of holding of farmers | 1727393 | 3 | 575797.50 | 6.31* |
| Error | 820905 | 9 | 91211.69 | |
| Total | 1321493557 | 15 | | |

** Value indicating that significant at 5% level of significance;*

*** Value indicating that significant at 1% level of significance;*

*F value showing for cost groups.*

## Cost-benefit ratio of blackgram cultivation

It was observed from the table 5 that, the operational cost ratio decreases as farm size increases and found highest to be 34.87 per cent for marginal farm size followed by 32.48 per cent for small, 31.72 per cent for semi-medium, 30.90 per cent for medium farm size and 32.35 per cent for was found for overall farm size. Fixed cost ratio was found to be 23.30 per cent for overall farm size. The input-output ratio was found highest at 183.59 per cent for medium size farm, followed by 181.77 per cent for semi-medium farm size, 179.93 for small farm size and lowest 175.80 per cent for marginal farm size and 180.58 per cent was found for overall farm size. Gross cost ratio was found to be highest at 56.88 per cent on marginal farm, followed by 55.57 per cent for small, 55.01 per cent for semi-medium farm size and lowest at 54.47 per cent for medium farm size and 55.38 per cent for overall farm size.

**Table 5:** Cost-Benefit ratio of blackgram cultivation (In percent)

| Sl. No. | Particular | Small | Semi-medium | Medium | Large | Overall |
|---|---|---|---|---|---|---|
| 1 | Operational cost ratio | 32.91 | 30.21 | 27.41 | 25.11 | 28.71 |
| 2 | Fixed cost ratio | 22.84 | 21.64 | 20.32 | 19.13 | 20.88 |
| 3 | Gross cost ratio | 55.75 | 51.86 | 47.72 | 44.24 | 49.59 |
| 4 | Output-input ratio | 179.37 | 192.84 | 209.53 | 226.06 | 201.65 |

## CONCLUSION

Agriculture plays an important role in economic development among several important sectors which contribute to total national product. From the results, as the farm size increases, total inputs costs decreased because of efficient utilization of inputs. Maximum share towards operation costs was machine labour. Among fixed costs, maximum was contributed towards rental value of owned land. Total cost of cultivation of blackgram was ₹ 28971.05 per hectare. It was highest (₹ 29646.25 per hectare) on small farm and lowest (₹ 28343.84 per hectare) on large farm. Farm business income was lowest to small farms and highest on large farm size group. Family labour income was lowest to small farms and highest on large farms.

## REFERENCES


Agarwal, P.K. and Singh, O.P. 2015. An economic analysis of soyabean cultivation in Ratlam district of Madhya Pradesh, India. *Indian Journal of Agricultural Res*earch, **49**(4): 308-314.

Gomathi, A.C., Rajarathinam Xavier, S.R., Sadiq, A.M. and Kumar, S.R. 2020. Anti-cancer activity of silver nano particles synthesized using aqueous fruit shell extract of *Tamarindus indica* on MCF-7 human breast cancer cell line. *Journal of Drug Delivery Science and Technology*, **55**: 1-8.

Hazari, S. and Khobarkar, V. 2015. Production and Marketing of Soybean in Akola District of Maharashtra: An Economic Analysis. *Soybean Research*, **13**(1): 48-56.

Kanade, A.U., Deshmukhana, K.V. and Shelke, R.D. 2017. Economic analysis of greengram production in Marathwada region of Maharashtra. *Trends in Biosciences,* **10**(6): 1434-1436.

Khorne, G.W., Ulemale, D.H. and Tale, S.G. 2014. Economics of groundnut production in Amravati. *International Research Journal of Agricultural Economics & Statistics*, **5**(2): 201-204.

Kumar, N. and Dey, G. 2017. Cost and return analysis of blackgram in Lalitpur district of Uttar Pradesh. *International Journal of Agricultural Sciences*, **7**(5): 1317-1322.

Mistry, H.H., Khatri, R.T. and Patel, K.S. 2011. Economic analysis of pigeon pea in Baruch taluka of South Gujarat. *International Research Journal of Agricultural Economics and Statistics,* **2**(1): 117-121.

Sarvani, H.S., Suvarna, V.C., Kumar, H., Ranadev, P. and Girisha, H.C. 2020. Effect of processing and fermentation on functional properties and anti-nutritional factors in horse gram. *Current Journal of Applied Science and Technology,* **39**(37): 38-45.

Sengar, V.S., Verma, R.R., Ahmad, R. and Singh, K.K. 2020. Costs and returns analysis of chickpea production in Auraiya district of Uttar Pradesh. *International Journal of Chemical Studies,* **8**(3): 80-82.

Singh, G., Sharma, V.K. and Singh, S. 2015. Production and marketing of green pea in Punjab. *International Journal of Agriculture Marketing,* **29**(1): 71-80.

Singh, P.K., Singh, O.P. and Mohkar, M.K. 2019. Marketing cost and efficiency of arhar in Chhindwara district of Madhya Pradesh, India. *The Pharma Innovationm,* **8**(4): 197-201.

Tawale, J.B. and Pawar, B.R. 2011. Costs, returns and profitability of soyabean production in Maharashtra. *International Research Journal of Agricultural Economics and Statistics,* **2**(2): 174-176.