Profitability and Production of Marigold Flowers in Faridabad District of Haryana

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ABSTRACT

Horticultural based farming system may contribute in doubling the farmers' income. In India among flower cultivation, Marigold flower is an important and popular flower which is grown for its highly aesthetic, democratic and long lasting flowering qualities. Hence, the present study was conducted in Faridabad district of Haryana purposively. The marigold flower production base farmers of the selected villages were classified in two groups i.e. lower strata (up to one ha.) and upper strata (above one ha area). The per hectare cost of cultivation of marigold was reported about Rs. 142900.16 for lower strata and Rs. 149651.7 for upper strata size of farm of marigold farmers. On an average Rs 146275.93 of which 39.39 per cent (20.59 % hired labour and 18.80 % family labour) cost contributes human labour. Second major item was rental value of land 17.99 per cent followed by machinery charges 15.03 per cent, manures and fertilizers 8.08 per cent (2.94 % + 5.14 %), irrigation charges 7.55 per cent, expenditure on nursery raising and insecticide and pesticide was reported 5.35 per cent and 15.22 per cent respectively. Whereas the interest on working capital was 1.39 per cent. The contribution of net cost on family labour was 18.80 per cent. It was observed that the Benefit Cost ratio of marigold cultivation was Rs.1:2.46 whereas it was Rs. 1:4.02, Rs. 1:3.05 and Rs.1:2.46 under cost- A, cost- B and cost- C level, respectively. At cost of production level, the Benefit Cost Ratio found to be more in lower strata (Rs. 1:2.49) followed by (Rs 1:2.43) in upper strata. It was concluded from the study that the marigold cultivation is a profitable venture.

Key words: *Marigold flower; Cost of cultivation; Profitability; Break even analysis;*

Agriculture plays a key role in the growth of Indian economy. Diversification in agriculture through horticulture / hort. based farming system must be encouraged for rapid economic development and employment in the economy and also for doubling the farmers' income. Plantation of horticultural crops specially flower cultivation may contribute a lot in the upliftment of farming families. India has a long tradition of floriculture and has a potential of commercial floriculture for a viable agri-business option. India has a long tradition of floriculture and the potential of commercial floriculture has resulted in the blossoming of this field into a viable agri-business option. Flower cultivation is done in area near cities. There is an increasing demand of flowers all over the world for various purposes. The flowers are extensively used for decoration, making essential oils, perfumes and medicines etc. Floriculture is increasing as a viable diversification from the traditional field crops because of higher returns per unit area. Marigold is an annual flower plant cultivated all over India. It is an important and popular flower of India, and ranks third in number after roses and chrysanthemum. It is useful for garland making, garden display and as loose flowers. The golden colour marigold varieties are grown in a field on a large scale in peninsular India. Marigold is not only grown as ornamental, loose flower and landscape plant but also as a source of natural carotenoid pigment for poultry feed. It is also used as the trap crop on the borders to attract nematode attacking the main crop. The main demand for marigold today

comes from the recent trend towards the use of natural dyes throughout the world. Marigold dye is also used in textile industries for dying the fabrics. Marigold is a source of income and employment to marginal farmers and large farmers. Its cultivation may contribute in doubling the farmers' income. In India, the area under flower crops was 278000 hectares with the production of 2184000 metric tonnes during 2015-16. Under marigold flower production area was 66130 hectares and production was 603180 metric tonnes. Despite recent industrial development, Haryana is primarily an agricultural state. About 70% of residents are engaged in agriculture. Haryana is at Second position in food grain production in the country. Haryana contributed significantly to the Green Revolution in India in the 1970s that made the country self-sufficient in food production. In Haryana, the flower cultivation covers the area about 4936.20 hectare and produces 54933.50 MT flowers during the year 2016-17. Faridabad being a district falls under the jurisdiction of GNCTD, Delhi has a great potential for flower cultivation. Most of the farming families employed in flower cultivation in this district for their family income generation. Faridabad district marigold production during 2016-17 was 1230 MT with an area of 93 hectare. Keeping in view the importance of flower cultivation, the present study entitled "Profitability and production of marigold flowers in Faridabad district of Haryana" was undertaken with the objectives (1) to analyse the cost of cultivation of marigold flowers, (2) to study the Profitability of marigold flowers, (3) to study the break-even analysis of marigold flowers.

METHODOLOGY

The present study was conducted in Faridabad district of Haryana. The Faridabad block was selected for this purpose. The farmers from five villages, namely, Kheri Kalan, Bhopani, Mahavatpur, Badarpur said and Nacholi who were engaged in cultivation of marigold crop were selected purposively. The selection of ultimate unit of the sample was selected purposely for collection of data. The marigold flower producer base farmers of the selected villages were stratified in two groups i.e. lower strata (up to 1 ha.) and upper strata (above 1 ha.). From the villages, hundred marigold cultivators were selected through simple random sampling without replacement each category. The primary data on various aspects of marigold farming was collected from selected respondents with the help of well constructed and pre-tested interview schedule from the marigold producing households.

Tools: For calculating the break-even point and profitability of marigold flowers, the following formula was used:

$$\text{BEP} = \frac{\text{Total cost of production}}{\text{Price per unit of yield}}$$

BEP = Break Even point

The percentage share of the break-even point of the average marigold flowers yield was calculated

$$\text{\% share of the BEP} = \frac{\text{BEP}}{\text{Per unit of yield}} \times 100$$

RESULTS AND DISCUSSION

Cost of Production of Marigold flowers: The cost incurred on the various input factors and the cost of production of marigold per hectare was worked out and presented in Table 1. The cost of cultivation of marigold was found Rs. 146275.93 per hectare, and cost of cultivation was higher on upper strata Rs.149651.70 than the lower strata (Rs. 142900.16) as they were using more manure and fertilizer, total human labour, seed cost, machinery charges, irrigation charges, plant protection as compared to lower strata, resulting the higher cost of cultivation. On an average the human labour is 39.39 per cent (20.59 % hired labour and 18.80 % family labour). Second major item was rental value of land 17.99 per cent followed by machinery charges 15.03 per cent, manure and fertilizer 8.08 per cent, irrigation charges 7.55 per cent, nursery raising 5.35 per cent, plant protection 5.22 per cent and interest on working capital 1.39 per cent, respectively. The results of this study in line with the findings given by *Kolambkar et. al. (2014), Kumar et. al. (2013), Mou N. H. (2012), Sai et. al. (2018)* and *Singh et. al. (2013).*

Profitability of marigold flowers: The return per hectare from production of marigold on different categories of farmers, were worked out and presented in Table 2. On an average cost A1/A2 came to Rs. 90430.14 which was Rs. 79970.27 on lower strata and Rs. 100890.01 on upper strata, whereas on an average cost-B came to Rs. 118775.93 which was Rs. 107400.16 on lower strata and Rs. 130151.70 on upper strata. Further on an average cost-C came to Rs. 146275.93 which was Rs. 142900.16 on lower strata and Rs. 149651.70 on upper strata. Cost A1/A2, cost –B and cost- C on upper strata was higher

Table 1. Per hectare cost of different inputs in marigold flowers production (Rs.)

Items	Lower Strata	Upper Strata	Overall
Family labour	35500.00 (24.84)	19500.00 (13.03)	27500.00 (18.80)
Hired labour	21500.00 (15.05)	38750.00 (25.89)	30125.00 (20.59)
Machinery charges	21688.89 (15.18)	22279.17 (14.89)	21984.03 (15.03)
Nursery raising	7683.33 (5.38)	7954.17 (5.31)	7818.75 (5.35)
Manures	3397.22 (2.38)	5216.67 (3.48)	4306.95 (2.94)
Fertilizers	7450.83 (5.21)	7595.83 (5.08)	7523.33 (5.14)
Irrigation charges	10663.89 (7.46)	11416.67 (7. 63)	11040.28 (7.55)
Plant protection	7586.11 (5.31)	7677.50 (5.13)	7631.81 (5.22)
Interest on working capital	1799.33 (1.26)	2270.03 (1.52)	2034.68 (1.39)
Rental value of land	25630.56 (17.93)	26991.67 (18.04)	26311.12 (17.99)
Total Cost	142900.16 (100.00)	149651.70 (100.00)	146275.93 (100.00)

Figure in parentheses indicate percentage to the total cost.

than the lower strata, because of more use of hired labour on the upper strata. Average net income per hectare from production of marigold was worked out which came to Rs. 212859.07. Net income was higher on upper strata (Rs. 213268.30) as compared to lower strata (Rs. 212449.84). On an average family labour income was worked out Rs. 240359.07, it was higher on lower strata (Rs.247949.84) as compared to upper strata (Rs. 232768.30). On an average farm investment income was worked out Rs. 239170.18, it was higher on upper strata (Rs.240259.97) as compared to lower strata (Rs. 238080.40). On an average farm business income was worked out Rs. 268704.86, it was higher on lower strata (Rs. 275379.73) as compared to upper strata (Rs. 262029.99). On an average return to human labour and management was worked out Rs. 57625, it was higher on upper strata (Rs.58250) as compared to lower strata (Rs. 57000). It is observed that marigold cultivation is very much profitable in Faridabad district of Haryana. These findings are in line with the findings given by *Ghadge, H. L. and Deshmukh (2004), Mou N. H. (2012),*

Table 2. Profitability of marigold flowers (Rs.)

Items	Lower Strata	Upper Strata	Overall
Cost- A1/A2	79970.27	100890.01	90430.14
Cost- B	107400.16	130151.70	118775.93
Cost- C	142900.16	149651.70	146275.93
Gross income	355350.00	362920.00	359135.00
Net Income	212449.84	213268.30	212859.07
Family labour income	247949.84	232768.30	240359.07
Farm investment income	238080.40	240259.97	239170.18
Farm business income	275379.73	262029.99	268704.86
Return to human labour & mgt.	57000	58250	57625
Cost production/q.	1387.38	1418.50	1402.94
Yield (qt. /ha.)	103.00	105.50	104.25
Cost Benefit ratio			
On Cost- C	2.49	2.43	2.46
On Cost- B	3.31	2.79	3.05
On Cost- A	4.44	3.60	4.02

Sai et al. (2018) and *Singh et al. (2013).*

Analysis of Profitability of marigold flowers revealed inverse relationship of family labour income, and farm business income with increase in size groups of farms. On an average, cost of production per quintal of marigold flowers was worked out and it came to Rs. 1402.94, it was higher on upper strata (Rs. 1418.50) as compared to lower strata (Rs.1387.38). The input-output relationship was worked and on an average, it was 2.46, 3.05 and 4.02 on Cost-C, Cost-B and Cost – A basis, respectively. The input-output ratio was higher on lower strata on Cost-B and Cost –A basis and vice versa on cost-C basis as compared to upper strata.

Break-even analysis of Marigold flowers production: The break-even analysis was done to estimate the minimum quantity of marigold flowers to be produce to cover the total cost on all the farmers size (Table 3). It is calculated that the total cost of production per hectare Rs. 142900.16 on lower strata and Rs. 149651.70 upper strata. The price of marigold flowers Rs 3450 per quintal on lower strata and Rs 3440 per quintal on upper strata. The Table 3 further indicates that the total marigold flower production per hectare on lower strata 103.0 quintal and 105.50 quintal on upper strata. The break-even output came out to be 48.70 q. and 50.98 q. on

Table 3. Break even analysis in marigold flowers production

Items	Lower Strata	Upper Strata	Overall
Cost of cultivation (in Rs.)	142900.16	149651.70	146275.93
Management charges (in Rs.)	14290.02	14965.17	14627.59
Cost of marketing (in Rs.)	10815.00	10761.00	10788.00
Cost of Prod.(in Rs.)	168005.18	175377.87	171691.25
Price/qt. (in Rs.)	3450	3440	3445
Out-put/ha. (in qt.)	103.00	105.50	104.25
Break even out-put (in qt.)	48.70	50.98	49.84
% of breakeven point to total out-put	47.28	48.32	47.81
Marginal safety (in qt.)	54.30	54.52	54.41

lower and upper strata. Thus it is clear that the flower production per hectare was higher than its break-even output to cover the total cost of production of all the farm size. The percentage break-even point was worked out to 47.28 and 48.32 per cent of the total flower production on lower and upper strata, respectively. On an average, the break-even point was worked out to be 49.84 q. and 47.81 per cent of the total flower production. Thus, it can be concluded that the breakeven output was achieved earlier on upper size farmer than lower size farmers. These findings are in conformity with the findings given by *Shilpa et al. (2017)*.

CONCLUSION

Marigold flowers cultivation in district Faridabad has been found a profitable venture and therefore, this can be practiced by the other fellow farmers for family income and employment generation. The marigold production may also contribute for doubling the farmers' income. The study may be further concluded that the production of marigold flowers is more profitable than other field crops grown by farmers in the district of Faridabad. The study also highlighted that per hectare profit at cost- C in lower strata and upper strata was found Rs. 212449.84 and 213268.30, respectively. The benefit cost ratio at lower strata and upper strata were 1: 2.49 and 1: 2.43, respectively. The average benefit cost ratio of marigold flowers 1: 2.46.

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