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An Economic Analysis of *Chrysanthemum* Cultivation: Costs, Returns, and Profitability in Amravati, Maharashtra

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Abstract:
The goal of the current study was to evaluate the expenses, profits, and returns associated with growing *Chrysanthemums* in Amravati, Maharashtra. utilizing in-person interviews utilizing a pre-tested interview schedule, information was gathered from 110 samples of *Chrysanthemum* growers and nearby flower shops throughout the 2022–2023 timeframe. Key conclusions include: Cost A accounted for 40.60% of the total cost, or Rs. 82671.75. Cost B was Rs. 153563.46, representing 75.42% of the total share. Cost C was Rs. 203587.43. Family labour had the highest share at 24.57%, followed by hired human labour at 9.83%. *Chrysanthemum* yield was 4049.44 kg per hectare. Gross return from *Chrysanthemum* cultivation was Rs. 364449.6. Farm business income stood at Rs. 281777.85, while family labour income was Rs. 210886.17. Net profit was Rs. 160,862.17 i.e. 79.01 percent. The output-input ratio was higher for *Chrysanthemum* cultivation, at 1.79 Profitability was higher in *Chrysanthemum* cultivation,evidenced by higher gross returns, farm business income, family labour income, net profit, and benefit-cost ratio compared to input costs. The cost of manufacture was Rs. 50.27 per kilogram. Overall, these findings highlight the Amravati city's chrysanthemum cultivation's favourable profitability and efficiency, making it a potentially profitable choice for local farmers.

Keyword: *Chrysanthemum*, gross return, net profit, benefit cost ration.

Introduction

India is widely recognized as a progressive nation with significant potential for the development of horticulture, especially in the field of floriculture. The country boasts a comparative advantage in the production of cut flowers and benefits from a favourable agro-climate, conducive to year-round flower cultivation. The *Chrysanthemum* is cultivated all over India consisting the states like Tamilnadu, Karnataka, Maharashtra and Andhra Pradesh. After liberalization, the government of India identified floriculture as a sunrise industry and accorded 100 percent export-oriented unit status (Singh, 2005). One of the most notable transformations has been the cultivation of flower crops as cash crops, driven by the increasing domestic demand for flowers. Among the various flowers, *Chrysanthemum* holds significant commercial importance due to its wide range of varieties, including variations in height, spread, colours, flower size, bloom time, and suitability for different types of displays, as well as its applications in the cut flower and perfume industries. Flowers play an indispensable role in enhancing the grandeur of social, cultural, and religious functions, and gatherings feel incomplete without their presence.

Chrysanthemum is grown in two ways for cut flowers, depending upon the market demand. Maharashtra is the leading state in floriculture, Due to the favourable climate, water, soil and available market have played crucial role in the inflation and blooming of floriculture. The land area under the *Chrysanthemum* flower crop in Maharashtra was according to data released by (Indiastatagri) in the year (2017-2018) was 0.39 ha, production was 1.65 metric tonnes and productivity is 4.33metric tonnes per ha. The cultivable area under Amravati division was 32664 ha (Dept. Of Agriculture M.S.). The objectives of this study were to assess the resource utilization patterns, determine the per-hectare costs and returns, and analyse marketing costs within the *Chrysanthemum*. This research aims to empower farmers with insights to optimize returns from *Chrysanthemum* cultivation. Amravati district is a prominent hub for *Chrysanthemum* cultivation within the Nagpur region.

Resources and Methods

A multistage sampling procedure was employed for this study. Local flower shops in Amravati city were selected as the primary sampling units. Information was collected from 110 samples of *Chrysanthemum* growers identified through these selected flower shops. Data collection was conducted via personal interviews using a pretested interview schedule. The data pertained to the agricultural year 2022-2023.

Observation and Analysis

The findings of the current study, along with the ensuing discussions, have been consolidated into the following categories:

Costs, returns, and profitability analysis of chrysanthemum farming:

Inputs required for chrysanthemum production:

The data pertaining to the physical quantities of inputs, including human labour, bullock labour, manures, fertilizers, and plant protection, which impact production, were subjected to analysis.

Typically, for cash crops such as *Chrysanthemum*, cultivators tend to apply relatively higher quantities of inputs. It would be intriguing to compare the input quantities utilized by cultivators from various holding size groups. The per-hectare utilization of physical inputs in *Chrysanthemum* cultivation was calculated and is presented in Table 1. At the aggregate level, *Chrysanthemum* cultivation required 110.10 man-days of hired human labour, while family human labour amounted to 250.12 days. This indicates that farms relied significantly more on family labour than hired labour in *Chrysanthemum* cultivation. On average, the per-hectare bullock labour requirement stood at 10.05 pair days. Additionally, for a 1-hectare *Chrysanthemum* farm, 230 kg of seedlings were necessary for planting. The machinery power required for *Chrysanthemum* cultivation was 16.20 hours per hectare. In terms of fertilizers, 156.10 kg of nitrogen (N), 100.45 kg of phosphorus (P), and 105.00 kg of potassium (K) were utilized. It was noted that the application of fertilizers was kept to a minimum compared to the recommended dosage. The application of manures is crucial, especially after transplanting *Chrysanthemums* in open fields, as it enhances the quality and quantity of flowers. For *Chrysanthemum* cultivation, 150.10 quintals of manure were applied per hectare. Irrigation was administered approximately five times, as the crop was cultivated during the rainy season, reducing the need for extensive watering during the growing period. Plant protection measures were implemented to mitigate issues such as disease and pest attacks, with approximately 6 litres of plant protection solution applied per hectare. *Chrysanthemum* cultivation requires timely irrigation to

ensure optimal growth and yield. The yield of *Chrysanthemum* flowers amounted to 4049.44 kg per hectare.

Table 1: Per hectare input employed in *Chrysanthemum* cultivation

Sr. No.	Particulars	Unit	Quantity
1	Hired human labour	Days	110.10
2	Family human labour	Days	250.12
3	Bullock labour	Days	10.05
4	Seedling	Kg	230.00
5	Machine charges	Hours	16.20
6	Manure	Q	150.10
7	Fertilizer N P K	 Kg Kg Kg	 156.10 100.45 105.00
8	Irrigation	No	5
9	Plant protection Output	Liters	6
10	Yield	Kg	4049.44

The cost of production for *Chrysanthemum* crop:

Given that the majority of *Chrysanthemums* are cultivated under rain fed conditions, planting usually takes place between June-July. The per-hectare costs and returns associated with *Chrysanthemum* cultivation, focusing on physical inputs and outputs, were calculated and are presented in Table 2. The findings indicate that Cost-C amounted to Rs.203587.43, with Cost-A accounting for 40.60 percent of it. Among the individual cost items, the rental value of land emerged as the predominant expense, constituting 29.88 percent. Following this, family labour represented the highest share at 24.57 percent, followed by hired human labour at 9.83 percent. Manure accounted for 7.46 percent, fertilizers for 5.16 percent, and interest on fixed capital for 4.93 percent of the total cost.

Table 2: Per hectare cost of cultivation of *Chrysanthemum* flower

Sr. No.	Item Of Cost	Amount	Per cent
1	Hired human labour	20020	9.83
2	Bullock labour	4025	1.97
3	Machine labour	6100	2.99
4	Manures	15200	7.46
5	Seedling	12100	5.94
6	Irrigation	2250	1.10
7	Fertilizers	10515	5.16
8	Plant Protection	1560	0.76

9	Land revenue	50.12	0.02
10	Depreciation on implements	3781.63	1.85
11	Interest on working capital Cost-A(1-11 items)	7070 82671.75	3.47 40.60
12	Rental value of land	60841.48	29.88
13	Interest on fixed capital Cost-B (CostA+12,13 items)	10050.2 153563.43	4.93 75.42
14	Family labour Cost-C (Cost-B+14)	50024 203587.43	24.57 100

Table 3: Per hectare profitability of *Chrysanthemum* cultivation

Sr. No.	Particulars	Amount (ha^{-1})
1	Gross return	364449.6
2	Cost A	82671.75
3	Cost B	153563.43
4	Cost C	203587.43
5	Farmer business income (Gross return minus Cost A)	281777.85
6	Family labour income (Gross return minus Cost B)	210886.17
7	Net income (Gross return minus Cost C)	160862.17
8	Benefit : Cost ratio	1.79
9	Per kg cost of production (Cost C minus by produce value divided by main produce)	50.27

Machine labour 2.99 per cent, seedlings 5.94 per cent, bullock labour 1.97 per cent. It was also observed that other items of expenditure i.e. irrigation 1.10 per cent, depreciation on implements 1.85 per cent, Plant protection about 0.76 per cent, interest on working capital 3.47per cent, land revenue 0.02 per cent, and showed minor proportions. Thus, an average expenditure on Cost A was 40.60 per cent in *Chrysanthemum* grower. The proportionate expenditure on Cost B was found 75.42 per cent. Cost A was worked out as Rs. 82671.75 i.e. 40.60 per cent, cost B was Rs. 153563.43 i.e. 75.42 per cent of total share, whereas the cost C was Rs 203587.43. A.S. Gawali et al. (2016). B. C. Posadas et al. (2006) Subrahmanyam (1986), Sivaramane et al. (2008) on rose flowers, Tupe et al. (2017) and Singh et al. (2013) on marigold flowers all carried out comparable research to the current investigations for *Chrysanthemum* flowers.

The per-hectare profitability of *Chrysanthemum* production was assessed, with the following results: Gross return from *Chrysanthemum* cultivation amounted to Rs. 364449.6 Farm business income was Rs. 281777.85 Family labour income totalled Rs. 210886.17 Net profit was calculated at Rs. 160862.17. The output-input ratio was higher in *Chrysanthemum* cultivation, standing at 1.79. Profitability was observed

to be higher in *Chrysanthemum* production, as evidenced by higher gross returns, farm business income, family labour income, net profit, and benefit-cost ratio compared to input costs. The per kg cost of production was determined to be Rs.50.27. These findings highlight the favourable profitability and efficiency of *Chrysanthemum* cultivation, suggesting it as a potentially lucrative option for farmers.

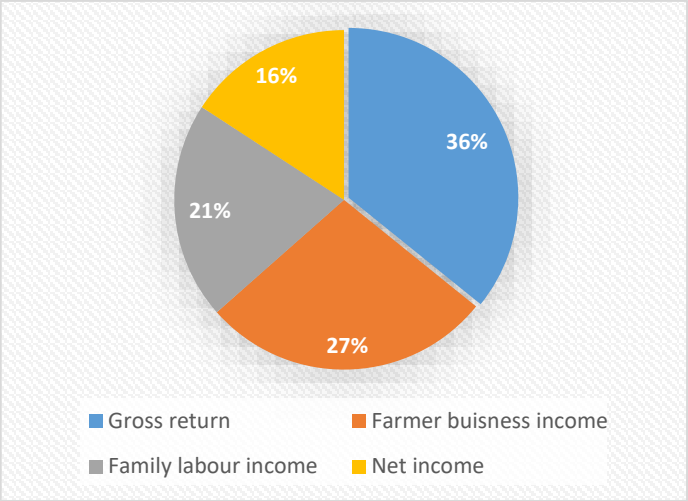


Fig: Percentage of Per-hectare profitability of *Chrysanthemum* production

Conclusion:

The total per-hectare cost of *Chrysanthemum* production, represented by cost C, amounted to Rs. 203587.43, with contributions from cost A at Rs. 82671.75 and cost B at Rs. 153563.43

Profit derived from cost A, cost B, and cost C was Rs. 281777.85Rs. 210886.17, and Rs. 160862.17, respectively. The output-input ratio stood at 1.79, indicating that *Chrysanthemum* cultivation is a highly profitable enterprise. These findings affirm the profitability and viability of *Chrysanthemum* farming, suggesting it as a promising venture for agricultural practitioners.

References:

1. Gawali, A. S., Pawar, P. P., Kamble, B. T., & Kaware, S. S. (2016). Economic Analysis of Production and Marketing of Chrysanthemum Flower Crop in Western Maharashtra. *Indian Journal of Economics and Development*, *12*(1a), 33-36.
2. Posadas, B. C., Coker, C. H., Knight, P. R., & Fain, G. (2006). Consumer survey of selected garden *Chrysanthemum* cultivars in Mississippi. HortTechnology, 16(3), 539-543.
3. Singh, Kehar (2005). Economics of wild marigold production and distillation in Himachal Pradesh, Indian J. Agric. Econ., 56 (1) : 116-128.
4. Subrahmanyam, K. V. (1986). Economics of production and marketing of *Chrysanthemum* flowers in Karnataka. Indian journal of horticulture, 43(3and4), 281-286.
5. Tupe, S.B., Perke, D.S. and Korade, V.C. (2017). Costs, returns and profitability of Chrysanthemum in Ahmednagar district of Maharashtra state. Agric. Update, 12(TECHSEAR-2): 389-392; DOI: 10. 15740/HAS/AU/12.TECHSEAR(2)2017/389-392.
6. The Chrysan the mum is cultivated all over India consisting the sta tes like Tamilnadu, Karnataka, Maharashtra and Andhra Pradesh. Chrysanthemum