



Research Article


Production and Marketing System of Flowers in the Selected Areas of Jashore District

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| ARTICLE INFO | ABSTRACT |
|---|--|
| <p>Article history Received: 24 May 2022 Accepted: 29 Jul 2022 Published: 30 Sep 2022</p> <p>Keywords Flower, Production, Marketing, Profitability, Cost and return</p> <p>Correspondence Pradip Hajong ✉: pradip.hajong@gmail.com</p> <p> OPEN ACCESS</p> | <p>The study was undertaken to assess the production and marketing system of different flower cultivated in Jashore district. Different flowers were cultivated and planted seed/seedling in different months, but their target was same as they sold it in a specific occasion. Gladiolus, rose, marigold, chrysanthemum, tuberose, gerbera, jasmine, gipsy etc. flower were cultivated commercially in Jashore. Flower was used in different national, occasional and cultural day such as happy new year, valentines day, pohela falgun, shaheed dibos, 17th march, independence day, pohela boishakh, 15th August, victory day and many more. People buy flower for celebration of national day, marriage day, birth day and so on. Among the cultivated flower gladiolus, rose, tuberose, gerbera and marigold were 57%, 41%, 69%, 17% and 71% farmer respectively. Benefit cost ratio on the total cost basis was highest in gerbera cultivation (2.67) followed by tuberose (1.88), rose (1.81), gladiolus (1.78) and marigold (1.56) respectively. Farmer, farmer cum trader, paiker, arathdar cum paiker, retailer, consumer etc. were the main market actors of flower. Flower cultivation was profitable as its BCR was more than one. But some flower required huge amount of investment. People used flower as its esthetic value and share his feeling with others, so that the consumption of flower was increased day by day. Insect pest infestation was the main problem of flower. Transportation and storage were the main problem of flower marketing as it was perishable products. Training, supply of sapling, market linkage should be developed for proper cultivation, quick transportation, proper storage and other facilities to reduce spoilage and damage of flower.</p> |
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Introduction

Bangladesh is primarily an agrarian economy. Agriculture is the single largest sector of economy. Flowers have been regarded as the icon of beauty and food for our sight. Flower boosts the visual sense of human beings and meets the requirement of heart feelings. Flowers have not only aesthetic purposes also have public, financial significance. Flower is the aesthetic plants throughout the world and it used in different social and religious ceremony and had public and financial significance. It regard as an icon of beauty and food of our sight, which boost the visual sense of human beings (Jahan et al., 2020). Civilizations has historical interest on flower gardening and culturing flowers to satisfy their aesthetic needs. But now a day it was encouraging to note that flower cultivation has emerged as a prospective sector in Bangladesh. The

country exports flowers and floral products to many countries. Floriculture is emerging cash crops for its highly competitive, commercial and economic activity and potential for earning foreign exchange (Mehraj et al., 2016a). The present-day floral industry is a dynamic, global and fast-growing industry, which has achieved significant growth rates during the past few decades. Different types of flower used in vase decoration and making bouquets, buckets, garland, button-holes or crown etc. and also fragrance oil and raw material of perfume (Amin et al., 2017). Floriculture was the most prominent cash crop farming which started mid eighteen of last decade in Jhikorgacha upazila of Jashore district. Considering the market demand and prices of flowers, commercial farming of flower was started with some enthusiastic farmers and cultivated various flowers like gladiolus, tuberose, marigold, rose, gerbera (Proadhan et al., 2017), Chrysanthemum (Jamal

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Uddin et al., 2015), orchid etc. (Haque et al., 2012). High yield, less cost of production and less reliance on imported inputs were major economic benefit for flower cultivation at Jashore (Shaibur et al., 2020). Demand for flowers is increasing significantly in the country. Different occasion such as victory day, language martyrs day, independence day, pohela boishakh, pohela falgun and valentine’s day thousands of people purchase flowers for celebrating these days. Besides that wedding ceremony, birthday, puja and

many other social occasions flowers were essential. About 80 percent of the total flowers cultivated in the Jhikorgacha upazila which was locally name as Capital of Flowers. Indigenous flowers as well as foreign flowers also cultivated in that area. Flower farming encouraging farmers to improve their socioeconomic condition, income, self employment opportunity, promotes entrepreneurship and boost foreign currency (Nusrat, 2012). It had potential tool for poverty alleviation and sustainable economic growth of Bangladesh.

Table 1. Area and production of selected flower during 2018-19

| Flower name | Area (ha) | | | Production (MT) | | |
|-------------|-----------|------------|------------|-----------------|------------|------------|
| | Jashore | Bangladesh | Percentage | Jashore | Bangladesh | Percentage |
| Marigold | 387 | 498 | 77.66 | 3522 | 3895 | 90.42 |
| Rose | 85 | 233 | 36.52 | 15301 | 16041 | 95.39 |
| Tuberose | 117 | 358 | 32.77 | 649 | 1759 | 36.90 |
| Gladiolus | 349 | 363 | 96.21 | 3890 | 3936 | 98.83 |

Source: BBS, 2019.

It was noticed that maximum flower cultivation and flower production was cultivated in the Jashore district (BBS, 2019). About six thousands farmer involved in flower cultivation commercially in Jashore and 600ha in Bangladesh (Mitra et al.,2022). So it needs to document the different flowers cultivated as well as its production and marketing system of flowers in Jashore district. In that reason the study was undertaken for following objectives (a) To find out the production technologies involved in the flower cultivation; (b) To estimate the cost and return of different flowers cultivation; (c) To analysis the marketing system of flower marketing and estimate the costs and margins at different levels and (d) To find out the problems of flowers production and marketing in the study areas.

Methodology

The present study was conducted in Jhikorgacha upazila of Jashore district during February-April, 2021. For the present study a total of 100 samples farmer and 50 traders were selected randomly for primary data collection. 100 samples farmer and 50 traders of different flower were conducted and collected by direct interview method with prepared interview schedule. Traders data were collected from different market intermediaries from local market of Jhikorgacha upazila and from Jashore town market and 50 traders data were collected for present study. The collected data were coded, edited, summarized, tabulated and analysed with descriptive statistics to fulfill the objectives of the study. The profitability was estimated using gross return, gross margin, net return and benefit cost ratio analysis. Descriptive statistics like ratio, averages and percentages were calculated and tabulated for the present study. Marketing system and

marketing margin was calculated for different market intermediaries.

The following profit equation was employed to assess the profitability of flower production.

$$\Pi = P_i \cdot Q_i - (TVC + TFC)$$

Where, π = Profit of producer per hectare (Tk.ha⁻¹)
 P_i = Per unit price of flower (Tk.stick⁻¹)
 Q_i = Quantity of flower (stickha⁻¹)
 TVC = Total variable cost of flower (Tk.ha⁻¹)
 TFC = Total fixed cost of flower (Tk.ha⁻¹)

Benefit cost ratio, BCR = Gross return/Total cost

$$\text{Interest on operating capital} = \frac{\text{Total variable cost}}{2} \times \text{interest rate}$$

Marketing margin: The marketing margin of different intermediaries were determined by the following formula,

$$MM = SP - PP$$

Where, MM = Marketing margin (Gross value addition).
 SP = Selling price.
 PP = Purchase price.
 Net margin = MM- MC.
 Where, MC = Marketing cost.

Results and Discussion

Socioeconomic profile of the respondent farmers

Demographic characteristics were the reflection of individual’s positive and negative attitude or qualities. Socioeconomic characteristics of the sample farmers like age of the farmers, level of education, family size, occupational status, social status, professional training,

land holding and distribution of land etc. About sixty three percent farmer was young age which was 31-50 years old (Table 2). In case of literacy level 34 % farmer was secondary level education completed. Average family size was 4.38. Seventy eight percent farmer main occupation was farming and they cultivated flower as well as other crops. Average farming experience was 14.79 years. Farmer get training from different GO and

NGOs organization. Most of the farmer were the member of different cooperative organization. Some farmer were the member of local cooperative society. Bangladesh Flower Society works for the development of flower farmer and gave logistic support to flower production and marketing.

Table 2. Socioeconomic profile of the respondent farmers

| Attributes | Particulars | % of farmer |
|--|---------------------|-------------|
| Age (%) | Less than 30 years | 12 |
| | 31-40 years | 40 |
| | 41-50 years | 23 |
| | Above 51 years | 25 |
| Literacy level (%) | Can sign | 25 |
| | Primary | 31 |
| | SSC | 34 |
| | HSC and above | 10 |
| Family information (%) | Male | 36 |
| | Female | 33 |
| | Children | 31 |
| | Average family size | 4.38 |
| Occupational status-main occupation | Agriculture | 78 |
| | Business | 15 |
| | Service | 7 |
| Average farming experience | | 14.79 |
| Training getting farmer (%) | | 56 |
| Member of cooperative organization (%) | | 54 |

Source: Field survey, 2021

Average flower farming area was 0.35 ha in the study area (Table 3). Among the cultivated flower farmer cultivated gladiolus, rose, tuberose, gerbera and marigold by 57%, 41%, 69%, 17% and 71% farmer

respectively. About sixty two percent farmer cultivated flower from his own source of flower seed/seedlings which was kept from previous cultivation.

Table 3. Land and flower farming information

| Attributes | Particulars | % of farmer |
|-------------------------------|--------------------|-------------|
| Land related information (ha) | Own land | 0.46 |
| | Flower cultivation | 0.35 |
| | Lease in | 0.31 |
| | Mortgage in | 0.22 |
| Flower farming (%) | Gladiolus | 57 |
| | Rose | 41 |
| | Tuberose | 69 |
| | Gerbera | 17 |
| | Marigold | 71 |
| Seed source (%) | Own seed | 62 |
| | Buy seed | 38 |

Source: Field survey, 2021

Agronomic management of different flowers

Most of the farmers were planting the gladiolus seed(corm) at July-August (74%) and rest of farmer was in September-October (26%) (Table 4). Gladiolus planting at July was better than other months (Islam and Haque, 2011). Planting on due time had significance effect on plant height, number of flower, spike, rachis, corm and cormel production of gladiolus. Gladiolus was

propagated with corm and cormel which was kept by farmer from previous year cultivation of his own or other farmer and store it in cold storage (Mahasen et al., 2015). All the farmer (100%) planting tuberose seed at April-May. Marigold seed/seedling was sowing/planting two season in the study area. Most of the farmer were sowing seed/seedling at the months of April-May (75%) and rest of farmer was September-

October (25%). Gerbera and rose seedling was planted at September-October. Rose was vegetative propagated and seedling was planting from plant materials (Shahrin et al., 2015). Among the agronomic management farmer land preparation, apply fertilizer, weeding,

irrigating, spraying, flower plucking as per requirement. Spray of pesticide was varied among different flower and it also shown in other crops that farmer spray more times then their required which affect their production cost (Hajong et al., 2020).

Table 4. Agronomic management of different flowers

| Particulars | Attributes | Gladiolus | Tuberose | Marigold | Gerbera | Rose |
|------------------------------|-------------------|-----------|----------|----------|---------|-------|
| Planting time (%) | April-May | - | 100 | 75 | | |
| | July August | 74 | - | - | | |
| | September-October | 26 | - | 25 | 100 | 100 |
| Land preparation (No.) | | 5.82 | 5.51 | 4.86 | 7.41 | 6.44 |
| Fertilizer application (No.) | | 4.91 | 6.52 | 3.69 | 9.94 | 8.71 |
| Weeding (No.) | | 3.96 | 5.70 | 3.15 | 8.24 | 6.98 |
| Irrigation (No.) | | 7.72 | 5.64 | 5.41 | 18.18 | 12.61 |
| Spraying times (No.) | | 9.33 | 10.07 | 8.23 | 19.35 | 17.54 |
| Flower plucking (No.) | | 11.19 | 13.59 | 10.54 | 15.24 | 14.76 |

Source: Field survey, 2021

Production cost of different flower

The total production cost of gladiolus was Tk.565422 ha-1 where as variable cost was Tk. 405236ha-1 (71.67%) and fixed cost was Tk. 160186ha-1 (28.33%) (Table 5). Among the cost item highest cost was seed/corm cost Tk. 118035 ha-1 (20.88%) followed by hired labor, fertilizer, insecticide and pesticide, land preparation, flower plucking, irrigation cost etc. Gladiolus corm was kept cold storage for next year cultivation. Some farmer kept his own seed and some one bought seed corm for cultivation of gladiolus. Gladiolus seed cost has much affected on the production cost of gladiolus cultivation.

Total cost of tuberose production was Tk. 369350 ha-1, where as variable cost was Tk. 220720 ha-1 (59.76%) and fixed cost was Tk. 148630 ha-1 (40.24%) (Table 5). Labor, seed and fertilizer had impact on production cost of tuberose cultivation. Farmer apply huge amount of

fertilizer and also spray of insecticide and pesticide which increase production cost of tuberose.

Total cost of marigold production was Tk. 212518 ha-1, where as variable cost was Tk. 123062 ha-1 (57.91%) and fixed cost was Tk. 89456 ha-1 (42.09%) (Table 5). Among the cost item flower plucking cost was the highest cost Tk. 33168 ha-1 (15.61%). Marigold flower as well as other flower was plucking by the contract basis and it was Tk.15.00 of thousands flower. Marigold cultivation was comparatively low cost and net return was higher than other competitive crop (Haque et al., 2013). Those farmer has less amount of investment and want to get quick profit then they can cultivate marigold. Marigold cultivation required less fund and few time. In which farmer family had their own manual labor or family labor for plucking flower then they get huge profit in marigold cultivation.

Table 5. Production cost of annual flower (Tk./ha)

| Cost item | Gladiolus | % of cost | Tuberose | % of cost | Marigold | % of cost |
|---|-----------|-----------|----------|-----------|----------|-----------|
| Variable cost | | | | | | |
| Land preparation | 13920 | 2.46 | 12212 | 3.31 | 11356 | 5.34 |
| Seed | 118035 | 20.88 | 30587 | 8.28 | 8620 | 4.06 |
| Hired labor | 97107 | 17.17 | 46849 | 12.68 | 24688 | 11.62 |
| Total fertilizer | 47813 | 8.46 | 41164 | 11.14 | 16885 | 7.95 |
| Organic manure, compost, mustard cake and coco-dust | 7346 | 1.30 | 10168 | 2.75 | 2046 | 0.96 |
| Insecticide and pesticide | 24533 | 4.34 | 28369 | 7.68 | 12199 | 5.74 |
| Irrigation | 6347 | 1.12 | 10160 | 2.75 | 5271 | 2.48 |
| Flower plucking cost | 23053 | 4.08 | 18546 | 5.02 | 33168 | 15.61 |
| Poly bag, sutli and capping material | 33622 | 5.95 | 4441 | 1.20 | 3528 | 1.66 |
| Interest on operating capital | 33460 | 5.92 | 18225 | 4.93 | 5299 | 2.49 |
| Total variable cost | 405236 | 71.67 | 220720 | 59.76 | 123062 | 57.91 |
| Fixed cost | | | | 0.00 | | |
| Family labor | 47913 | 8.47 | 36357 | 9.84 | 33320 | 15.68 |
| Land use cost | 112273 | 19.86 | 112273 | 30.40 | 56136 | 26.41 |
| Total fixed cost | 160186 | 28.33 | 148630 | 40.24 | 89456 | 42.09 |
| Total cost | 565422 | 100.00 | 369350 | 100.00 | 212518 | 100.00 |

Source: Authors calculation, Field survey, 2021

Total production cost of Gerbera was Tk. 3149259 per ha, where as variable cost was Tk. 974696 per ha (30.95%) and fixed cost Tk. 2174564 per ha (69.05%) (Table 6). In gerbera production seedling cost was highest Tk. 1110718 per ha (35.27%) which was considered as fixed cost. Gerbera cost calculation was complex, because its primary investment on mancha or shed preparation cost and seedling cost was high. Due to complexities of some assumptions were made and cost was divided on along the longevity of mancha preparation material such as bamboo, polythene, labor, seedling etc. Because seedlings was planted once during plant establishment and it plants was continue 6 to 10 years. First year establishment cost was high cause at that time garden or gerbera plant was surrounded fencing and polythene sheet on roof. For

mancha preparation it required bamboo, polythene sheet, *sutli*, concrete pillar etc. which was huge costly at initial plant establishment. So that fixed cost was higher than variable cost.

Total cost of rose production was Tk. 882193 per ha, in where total variable cost was Tk. 471310 per ha (%) and total fixed cost was Tk. 410883 per ha (46.58%) (Table 6). Among the cost item seedling cost was highest Tk. 271157 per ha (30.74%). Rose attack different insect (thrips, mite) and disease (Munmun et al., 2020) so that farmer expense huge amount of costing in insecticide and pesticide buying, which was Tk. 105479 per ha (11.96%). In the rose cultivation first year its initial cost was high and then gradually decreases its cost (Haque et al., 2013).

Table 6. Production cost of perennial flower (Tk./ha)

| Cost item | Gerbera | % of cost | Rose | % of cost |
|---|---------|-----------|--------|-----------|
| Variable cost | | | | |
| Land preparation | 11863 | 0.38 | 22006 | 2.49 |
| Hired labor | 228002 | 7.24 | 52386 | 5.94 |
| Total fertilizer | 96139 | 3.05 | 33255 | 3.77 |
| Organic manure, compost, mustard cake and coco-dust | 42646 | 1.35 | 51623 | 5.85 |
| Insecticide and pesticide | 167167 | 5.31 | 105479 | 11.96 |
| Irrigation | 35431 | 1.13 | 25374 | 2.88 |
| Flower plucking cost | 134501 | 4.27 | 115059 | 13.04 |
| Poly bag, sutli and capping material | 12158 | 0.39 | 4824 | 0.55 |
| Interest on operating capital | 246787 | 7.84 | 61305 | 6.95 |
| Total variable cost | 974696 | 30.95 | 471310 | 53.42 |
| Fixed cost | | | | |
| Seedlings | 1110718 | 35.27 | 271157 | 30.74 |
| Family labor | 48121 | 1.53 | 27454 | 3.11 |
| Bamboo | 292085 | 9.27 | | |
| Mancha preparation labor | 187785 | 5.96 | | |
| Polythene | 423582 | 13.45 | | |
| Land use cost | 112273 | 3.57 | 112273 | 12.73 |
| Total fixed cost | 2174564 | 69.05 | 410883 | 46.58 |
| Total cost | 3149259 | 100.00 | 882193 | 100.00 |

Source: Authors calculation, Field survey, 2021

Return from flower cultivation

Return from the different flowers per hectare production was counted by the value of the piece or stick of flower. Gross return of gladiolus was Tk. 1008567 per ha and net return was Tk. 443146 per ha (Table 7). Gross return of tuberose was Tk. 695467 per ha and net return was Tk. 326117 per ha. Gross return of marigold was Tk. 331680 per ha and net return was Tk. 119162 per ha which was the lowest return among the different flower. Gerbera return was highest among the cultivated flower where gross return was Tk.

8406303 per ha and net return was Tk. 5257043 per ha, but its primary investment was higher than other flower cultivation. Rose was the perennial plants in which gross return was Tk. 1598045 per ha and net return was Tk. 715851 per ha. If rose seedlings planted in once and then getting flower year and year, though earlier year it gives less amount of flower but increase flower budding after increasing time. Benefit cost ratio on the total cost basis was highest in gerbera cultivation (2.67) followed by tuberose (1.88), rose (1.81), gladiolus (1.78) and marigold (1.56) respectively.

Table 7. Return from different flower cultivation (Tk)

| Particular | Gladiolus | Tuberose | Marigold | Gerbera | Rose |
|---------------------------|-----------|----------|----------|---------|---------|
| Production (piece/ha) | 288162 | 231822 | 2211200 | 1681261 | 1278436 |
| Average price (Tk./piece) | 3.5 | 3 | 0.15 | 5 | 1.25 |
| Gross return | 1008567 | 695467 | 331680 | 8406303 | 1598045 |
| Total cost | 565422 | 369350 | 212518 | 3149259 | 882193 |
| Net return | 443146 | 326117 | 119162 | 5257043 | 715851 |
| BCR | 1.78 | 1.88 | 1.56 | 2.67 | 1.81 |

Marketing channel

In the flower marketing different actor was involved in the market such as farmer, farmer cum trader, paiker, arathdar cum paiker, retailer, consumer etc. Most promising marketing channel was farmer-arathdar cum paiker-retailer-consumer. The following marketing channel was found in the study area;

Channel-I: Farmer-Retailer-Consumer

Channel-II: Farmer cum trader-Retailer-Consumer

Channel-III: Farmer-Paiker-Retailer-Consumer

Channel-IV: Farmer-Arathdar cum Paiker-Retailer-Consumer

Actors involved in flower marketing

Farmer

Farmer is a producer of the flower and first actor of the channel. Some farmers sold the products to local traders at local market and some one at local arathdar. When farmer sold the flower at local market then he bears transportation cost and paid market toll.

Paiker cum local arathdar

Paiker was a professional wholesale trader who purchase from local market and sold it to other city wholesaler and or retailer. When traders sold flower with a fixed amount of commission then he was commission agent or local arathdar. When trader buy and sold flower to other trader from local market then he was paiker(wholesaler). In flower marketing system flower transaction was done pre familiar and personal contact basis with far city retailer (trader) to local trader. Local trader taken ordered as per far away

trader demand and term and condition such as price, commission, transportation etc. fixes then flower was transact (bought and sold).

Retailer

The retailer is the last link of marketing channel and they collect flower from arathdar and/or paiker (local trader) and then sold the flowers to consumer directly. Retailer sold flower in different forms and way. Sometimes raw flower stick and sometimes in different forms such as garland, bouquet, baskets, wraths etc. and decorates in different social, cultural and political ceremony.

Weekly flower transaction (bought and sold) was varied among wholesaler and retailer. A wholesaler sold flower to different markets of different traders. So that weekly sold amount of flower was bigger than retailer (Table 8). Retailer sold amount of flower meager but sometimes in different occasion his demand increases and sold huge amount of flower in different ways. Retailer kept flowers in his store and sold it in a few amount. In case of cut flower vase life was very important to kept flower fresh in longer time period (Mishra and Khanal, 2019; Jamal Uddin et al., 2016a; Jamal Uddin et al., 2016b; Mehraj et al., 2016b). Gladiolus had 15 days theoretical vase life but it needs to kept 7 days in a retail shop. Retailer made different types of flower product so that he added value addition flower.

Table 8. Weekly sold amount of flower at different intermediaries

| Flower name | Vase life | Weekly transaction (No.) | | Buying price (Tk.) | | Selling price (Tk.) | |
|----------------|-----------|--------------------------|----------|--------------------|----------|---------------------|----------|
| | | Paiker | Retailer | Paiker | Retailer | Paiker | Retailer |
| Gladiolus | 7 | 2597 | 733 | 3.75 | 4.61 | 5.63 | 7.17 |
| Rose | 5 | 2393 | 1250 | 2.63 | 3.50 | 4.02 | 5.56 |
| Chrysanthemum | 4 | 606 | 473 | 2.08 | 2.87 | 3.52 | 4.87 |
| Tuberose | 5 | 2652 | 635 | 2.89 | 3.97 | 3.52 | 6.18 |
| Gerbera | 4 | 1243 | 309 | 6.24 | 6.53 | 7.95 | 10.00 |
| Marigold | 5 | 9589 | 5767 | 0.22 | 0.28 | 0.31 | 0.41 |
| Jasmine | 3 | 436 | 267 | 2.71 | 4.58 | 4.86 | 7.50 |
| Gipsy (Bundle) | 2 | 67 | 21 | 45.77 | 58.75 | 65.71 | 87.50 |

Marketing cost of flower at different intermediaries

Marketing cost of flower transaction was packaging which done with jute sack, handling charge (loading and unloading), transportation which share those with retailer and or paiker, market toll (sometimes farmer paid this fee) etc. Total marketing cost of thousands flower of paiker was Tk. 319.30 and retailer was Tk. 450.00 (Table 9). Transportation in both category paiker and retailer incur maximum amount of costing of marketing of flower. Transportation mainly done by van, auto rickshaw, motorcycle, roof top of bus etc. from one place to another. Transport at long distance mainly done on roof top of bus, in which some times flower quality become de shaping and perish.

Table 9. Marketing cost and return of thousands flower

| Cost item (Variable cost) | Cost and return (Tk./1000 flower) | |
|---------------------------|-----------------------------------|----------|
| | Paiker | Retailer |
| Packaging (Bundle) | 52.34 | 151.67 |
| Handling charge | 41.88 | 40.44 |
| Transportation | 209.38 | 252.78 |
| Market toll | 15.70 | 5.06 |
| Total cost | 319.30 | 449.94 |
| Gross return | 1651.87 | 1873.24 |
| Net return | 1332.57 | 1423.30 |

Problem on flower production and marketing

Flower stakeholders were faced different problems in cultivation and marketing. The following problem find out in flower production by a group discussion with farmers at locally. Flower production and marketing problems analyzed with 5-point Likert scale (Rensis Likert), where 5 was extremely problem, 4 was very, 3 was moderately, 2 was slightly and 1 was not at all. Farmer faced different problem at flower cultivation and marketing, such as insect pest infestation, storage and marketing problem, high market toll, labor wages etc (Table 10). In other case trader also faced some marketing problem of flower, such as storage and transportation problem, credit sold of flower to far away traders etc. Due to perishable products it sold in a very short time and cold not store in longer period of time. Again its demand and price were not fixed in a year round, its demand increase in some special occasion. So its demand and price were fluctuate where as price fluctuation was maintained by improving storage facilities (Hajong et al., 2014). Storing for few days added extra value of products and get high price (Baksh et al., 2017) but due to perishable products flower price decreases because flower color become pale and discolor. All the problem enrolled by the farmer and trader were moderate problem.

Table 10. Flower production problem

| Problem faced by farmer | Mean value | Rank | Problem faced by trader | Mean value | Rank |
|------------------------------|------------|------|------------------------------|------------|------|
| Flower marketing problem | 3.65 | 1 | Storage problem | 3.12 | 1 |
| Lack of storage facilities | 3.36 | 2 | Price and demand fluctuation | 2.72 | 2 |
| High insect pest infestation | 3.33 | 3 | High transport cost | 2.68 | 3 |
| Transportation problem | 3.29 | 4 | High wages and rent of shop | 2.5 | 4 |
| High input cost | 2.64 | 5 | Credit sold of flower | 2.4 | 5 |
| High labor cost | 1.95 | 6 | | | |
| Lack of skilled labor | 1.7 | 7 | | | |

Conclusion

Flower cultivation was profitable in the study area. Some flower required less time or duration and few were required year round duration. Some flowers required huge amount of investment such as gerbera, rose, gladiolus etc. Some flowers required less investment and time such as marigold. So that small farmer eager to cultivated less investment flower. Most of the farmer cultivated more than one flower for minimize loss and gain continue return. Though in the COVID-19 situation flower couldn't sold many farmer fall in loss and dissatisfied (Mitra et al., 2022) but flower cultivation was profitable. Market actors of different level was also faced investment loss. Market actors most of the time faced transportation problem. There had no alternate medium of transportation except roof top of bus. For transportation of flower at distance

market it required cooling van system which was main demand of traders as well as Bangladesh flower society (BFS).

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