PRODUCTION AND MARKETING PRACTICES OF CAULIFLOWER CROP IN CHANGUNARAYAN MUNICIPALITY, BHAKTAPUR DISTRICT, NEPAL

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ABSTRACT

A study was conducted to analyse the production and marketing practices of cauliflower crop in Changunarayan municipality of Bhaktapur district, during February to March, 2021 AD to assess the existing production practices of main season cauliflower, to delineate its marketing activities and to identify the major problems that had been causing a barrier among the farmers. A total of 60 respondent farmers were purposely selected and interviewed by using a semi-structured questionnaire. The study revealed that 61.67 percent of the respondents were dependent on agro vet for the seed. 48% percent were using Snow Mystique (hybrid) variety. September to October was the main sowing season for cauliflower production. Tube well and river water was the major source of irrigation and manual weeding was carried out by all the respondents. The infestation of disease and pest was the major problem in the survey site. The respondents were found deficient in the skill of cultivation and the knowledge about correct dose, frequency and time of pesticides application. They had been selling their cauliflower produce to middle man and also to consumer directly. The average benefit cost ratio of the cauliflower farming in the observed location was 1.83 at a mean rate of Rs.25-35 consistent with kg cauliflower.

KEYWORDS

Cauliflower, Marketing, Problems, Production

1. INTRODUCTION

Cauliflower is one of the main cruciferous vegetable crops belonging to the family Brassicaceae. Cauliflower is herbaceous annual for vegetable production and biennial for seed production. Cauliflower is an excellent source of carbohydrate, protein, fat, minerals (Ca, Mg, P and K) and vitamins. Consuming cauliflower significantly reduces risk of coronary heart disease, cancer, stroke, hypertension, and gastrointestinal disease (Petruzello, 2002). Cauliflower is one of the maximum crucial cool season vegetable vegetation throughout the country. The diverse climatic and geographical function of Nepal offers incredible manufacturing ability of cauliflower all 12 months spherical, in one of a kind seasons. In the context of Nepal, cauliflower is grown as both seasonal and off-seasonal vegetable. Despite the great potential of production in the country, the major constraints faced by farmers observed in cauliflower cultivation are poor production practices and other marketing problems (MoALED, 2020). Vegetable production is gradually emerging as an important sub sector contributing to GDP in Nepal. However, studies on vegetable production, marketing and economic relation between farmers’ problems are generally ignored during policy formulation due to lack of farm level information. Thus, studying farm performance of vegetable production and marketing from system perspective is very important to know how different components in the system affected it (Maharatha et al., 2019). Thus it is important to understand the existing scenario of the cauliflower growers, the methods and inputs they use for cauliflower production, productivity and profitability of cauliflower production in the study area. Which will be beneficial to the cauliflower growers of Changunarayan municipality, policy maker, students, and researchers involved in cauliflower production (Poudel et al., 2019).

2. MATERIALS AND METHODS

2.1 Research Design

The study was conducted in Changunarayn municipality, in the Bagmati province in central Nepal, which is home to one of major city in Nepal i.e. Bhaktapur. Ward 1 and 2 of Changunarayan municipality were purposely chosen for the study because of presence of high concentration of farmers growing cauliflower. In the selected area, the farmers mainly cultivated cauliflower during the cool season. Farmers were selected purposely applying simple random sampling method. Altogether 60 respondents were randomly selected from the site for interviews and other related formal/informal discussions and group meetings. For the research both primary and secondary information had been collected. The Primary data collection was done through personal interviews with cauliflower growers in the research site, on the basis of pre-tested semi structural questionnaires. The secondary data used in this work was from several literature such as books, journals, annual reports available at different academic institutes.

2.2 Study Area and Sampling Technique

The study was conducted in Changunarayan municipality, in the Bagmati province in central Nepal, which is home to one of major city in Nepal i.e. Bhaktapur. Ward 1 and 2 of Changunarayan municipality were purposely chosen for the study because of presence of high concentration of farmers growing cauliflower. In the selected area, the farmers mainly cultivated cauliflower during the cool season. Farmers were selected purposely applying simple random sampling method. Altogether 60 respondents were randomly selected from the site for interviews and other related formal/informal discussions and group meetings. For the research both primary and secondary information had been collected. The Primary data collection was done through personal interviews with cauliflower growers in the research site, on the basis of pre-tested semi structural questionnaires. The secondary data used in this work was from several literature such as books, journals, annual reports available at different academic institutes.

2.3 Tools and Technique of data analysis

The collected data were tabulated and analyzed by using Microsoft Excel. Both quantitative and qualitative analysis were done.

2.4 Field observation

Direct field observation were done at the time of field survey to know the cultivation practices of cauliflower, its marketing and other management practices adopted by the growers.

2.5 Benefit-Cost Ratio analysis

The benefit-cost ratio was calculated by using formula as in (Paudel & Paudel &
Adhikari, Economic analysis of tomato farming under different production system in Dhading district of Nepal, 2018).

**Benefit-Cost Ratio = \frac{\text{Total Return}}{\text{Total Cost}}**

### 2.6 Problem Ranking

The intensity of problems faced by farmers was also analyzed by Scaling Technique giving 5 scale values. The index of problem was calculated by using the formula as in (Khadka et al., 2021).

\[ I_{\text{prob}} = \frac{\sum S_i F_i}{N} \]

Where,
- \( I \) = index value for intensity of problem (0 to 1)
- \( S_i \) = scale value at \( i \)th severity
- \( F_i \) = frequency of the \( i \)th severity
- \( N \) = total number of respondents
- \( \sum = \) Summation

### 3. RESULTS AND DISCUSSION

#### 3.1 Socio-Demographic characteristics

The socio-economic study regarding cauliflower production shows that both male (62%) and female (38%) were involved in cauliflower production. Maximum age of the farmers involved in cauliflower production was found to be ranging in between 35-45 years. The literate population was 72%, majority belonging to primary level education (32%). Agriculture was the major source of income for 62% of the respondents. The survey revealed that they chose cauliflower farming because the income from this enterprise was quite good and due to climatic suitability. Also, they have been cultivating cauliflower since long time passing this enterprise from generation to generation. Only 10% of the farmers had taken loan for cauliflower farming.

#### 3.2 Practices adopted by the respondent farmers for cauliflower production

Majority of the respondents (47%) owned 2-3 ropani of land. 48% of them had grown Snow Mystique (hybrid) variety in the study area followed by few respondents with local variety and snow moon variety and 61.67% purchased seeds from the local agro vets. September to October was the main season for growing cauliflower. The major disease prevailing in the area was clubroot and pest damaging the crop was aphids and cabbage looper. 95% of the respondents used chemical method for controlling the pests and diseases. Insecticides such as Metacid, Nuvan, Bullet and fungicides such as Dithane M-45, Uthane M-45 etc. were used by the growers.

#### 3.3 Benefit cost ratio of cauliflower farming

The average price obtained by the farmers for main season cauliflower was 29.17 NRS/kg with maximum price of 35 NRS/kg and minimum price of 25 NRS/kg. From the analysis, it was found that maximum benefit cost ratio was 2.48 whereas the minimum was 1.14 with average benefit ratio of 1.83. Gross margin is positive and BCR is greater than 1 so it reveals that Rs.1.83 benefit may be acquired by way of making an investment one rupee in cauliflower farming in the observed area.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Cost (Rs./ropani)</th>
<th>Yield (Kg/ropani)</th>
<th>Price (Rs./kg)</th>
<th>Gross Income (Rs./ropani)</th>
<th>Net Profit (Rs./ropani)</th>
<th>B.C Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum</td>
<td>20930</td>
<td>1450</td>
<td>35</td>
<td>45500</td>
<td>27170</td>
<td>2.48</td>
</tr>
<tr>
<td>Minimum</td>
<td>12740</td>
<td>700</td>
<td>25</td>
<td>18750</td>
<td>2405</td>
<td>1.14</td>
</tr>
<tr>
<td>Mean</td>
<td>17422.45</td>
<td>1096.33</td>
<td>29.15</td>
<td>32083.75</td>
<td>14661.30</td>
<td>1.83</td>
</tr>
</tbody>
</table>

### 3.4 Marketing situation

Generally, the farmers had been selling the harvested cauliflower to the market of close proximity and those who were devoid of roads/transportation sold them to middle man. The major markets for selling of cauliflower in the study area were Kalimati, Balkhu, Lagan, Thimi, Baneshwor, and Bhaktapur.

Mainly 4 types of marketing channel were observed through which the harvested cauliflower reached the consumers. The study revealed that the most practiced channel in the study site was IV.

**Table 1**: Benefit cost ratio of cauliflower farming

<table>
<thead>
<tr>
<th>Problems faced by the farmers</th>
<th>Level of problems</th>
<th>0.8</th>
<th>0.6</th>
<th>0.4</th>
<th>0.2</th>
<th>Index value for intensity of problem</th>
<th>Overall Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease and pest infestation</td>
<td>22</td>
<td>17</td>
<td>11</td>
<td>6</td>
<td>4</td>
<td>0.76</td>
<td>I</td>
</tr>
<tr>
<td>Irrigation facility</td>
<td>15</td>
<td>17</td>
<td>18</td>
<td>6</td>
<td>4</td>
<td>0.71</td>
<td>II</td>
</tr>
<tr>
<td>Marketing</td>
<td>12</td>
<td>11</td>
<td>21</td>
<td>11</td>
<td>5</td>
<td>0.65</td>
<td>III</td>
</tr>
<tr>
<td>Shortage of labor</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>15</td>
<td>21</td>
<td>0.48</td>
<td>IV</td>
</tr>
<tr>
<td>Unavailability of fertilizers and seed</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>22</td>
<td>26</td>
<td>0.40</td>
<td>V</td>
</tr>
</tbody>
</table>

**Table 2**: Problem ranking

REFERENCES


Mahmood, A. (2013). Evaluation of the degree to which employee satisfaction is related to internal marketing within Pakistani universities. (Unpublished doctoral thesis), University of Salford, Salford.


