Economic Aspects of Production and Constraints of Lemon Grass in Bilaspur District, Chhattisgarh, India

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ABSTRACT

The cultivation of medicinal and aromatic plants (MAPs) has the potential to provide significant economic benefits to farmers in Bilaspur district, Chhattisgarh, India. However, there are a number of constraints that limit the growth of this sector. This study investigates the economic aspects of MAP production in Bilaspur district, and identifies the major constraints that farmers face. The study finds that the area under cultivation for MAPs has been increasing in Bilaspur district, but the growth rate has been slower than in other parts of Chhattisgarh. This is due to a number of factors, including the high cost of planting material, lack of technical knowledge, and limited access to markets. The study also finds that the profitability of MAP production varies depending on the crop. Lemon grass is the most profitable MAP in Bilaspur district. However, the profitability of MAP production is still lower than that of other crops, such as rice and wheat. The study recommends a number of policy interventions to promote the growth of the MAP sector in Bilaspur district. These include providing subsidies for planting material, improving access to technical knowledge, and developing market linkages for MAPs. The study concludes that the cultivation of MAPs has the potential to provide significant economic benefits to farmers in Bilaspur district. However, the growth of this sector is constrained by a number of factors. The study recommends a number of policy interventions to promote the growth of the MAP sector in Bilaspur district.

Keywords: MAPs (Medicinal and Aromatic Plants), CAGR (Compound Annual Growth Rate), Trends, constraints
the economic aspects of production, processing and marketing of major medicinal and aromatic crops which grown in Bilaspur region with following objectives:

- To analyze trend and growth rate in area, production and productivity of major medicinal and aromatic plants in the study area.
- To identify the constraints and to suggest remedial measures to overcome them.

METHODOLOGY

The state of Chhattisgarh was purposively selected because it is a major producer of medicinal and aromatic plants (MAPs). The blocks of Kota and Masturi were purposively selected because they have the highest area under MAP cultivation in the state. The villages of Changori, Mohandi, Tilakdih, Loharsi, Masturi, and Seepat were selected using a proportionate method, with 2% of the total villages in each block being selected. A total of 45 lemon grass producers were identified in these villages, and they were stratified into three size categories: small, medium, and large. Multistage sampling method was used to select 20 small farmers, 17 medium farmers, and 8 large farmers for the study. Primary data was collected from the selected farmers through personal interviews using pre-tested questionnaires. Secondary data was collected from the Department of Horticulture, Directorate of Economics and Statistics, and other sources.

Analytical procedure

Computation of growth rate

\[ Y = a \beta^t \]

\[ \log Y = \log a + t \log \beta \]

Where,

- \( Y \) = Area/ production /productivity of MAP’s crops
- \( a \) = Constant
- \( \beta \) = Regression coefficient
- \( t \) = time in year

\[ \text{Compound growth rate (\%) = (Antilog } \beta-1)100. \]

RESULTS AND DISCUSSION

Growth rates of area, production and productivity of lemon grass

The compound and linear growth rate of area, production and productivity of lemon grass in Bilaspur district is estimated in this section.

Table 1: Area, production and productivity of Lemon Grass in Bilaspur district (2012-13 to 2021-22)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Area (in ha.)</th>
<th>Production (in MT)</th>
<th>Productivity (in Tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-13</td>
<td>304</td>
<td>3945</td>
<td>12.98</td>
</tr>
<tr>
<td>2013-14</td>
<td>306</td>
<td>4150</td>
<td>13.56</td>
</tr>
<tr>
<td>2014-15</td>
<td>311</td>
<td>4422</td>
<td>14.22</td>
</tr>
<tr>
<td>2015-16</td>
<td>318</td>
<td>4695</td>
<td>14.76</td>
</tr>
<tr>
<td>2016-17</td>
<td>320</td>
<td>4707</td>
<td>14.71</td>
</tr>
<tr>
<td>2017-18</td>
<td>350</td>
<td>5153</td>
<td>14.72</td>
</tr>
<tr>
<td>2018-19</td>
<td>377</td>
<td>5882</td>
<td>15.60</td>
</tr>
<tr>
<td>2019-20</td>
<td>382</td>
<td>5402</td>
<td>14.14</td>
</tr>
<tr>
<td>2020-21</td>
<td>321</td>
<td>4132</td>
<td>12.87</td>
</tr>
<tr>
<td>2021-22</td>
<td>356</td>
<td>5059</td>
<td>14.21</td>
</tr>
</tbody>
</table>

Source: Directorate, Land Record, Raipur, Directorate of Economics and Statistics.

The average productivity of lemon grass in Bilaspur is 14.17 tonnes per hectare. The standard deviation of productivity is 0.84 tonnes per hectare, indicating that there is a moderate amount of variation in productivity from year to year. The maximum productivity was 15.6 tonnes per hectare in 2018-19.

There is a slight upward trend in productivity over the years, with the exception of a slight decrease in 2020-21. The increase in productivity may be due to a number of factors, such as improved cultivation practices, better varieties of lemon grass, or more favorable weather conditions.

- The productivity of lemon grass in Bilaspur is higher than the national average of 12.5 tonnes per hectare.
- The productivity of lemon grass in Bilaspur is comparable to the productivity of lemon
grass in other states, such as Uttar Pradesh and Karnataka.

- The area under cultivation for lemon grass has remained relatively stable over the years, suggesting that the increase in productivity is due to factors other than increased acreage.
- There is a positive correlation between the area under cultivation and productivity, indicating that larger farms tend to have higher productivity.

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**Estimation of compound growth in area, production and productivity of lemon grass in Bilaspur district**

<table>
<thead>
<tr>
<th>Crops</th>
<th>Area (BILASPUR)</th>
<th>Production (BILASPUR)</th>
<th>Productivity (BILASPUR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lemon Grass</td>
<td>0.8947**</td>
<td>1.05048**</td>
<td>0.1551</td>
</tr>
</tbody>
</table>

** Significant at 1% level; * Significant at 5% level.

The CAGR of the area under cultivation of lemon grass is 89%, while the CAGR of the production is 105%. This means that the productivity of lemon grass is increasing at a CAGR of 16%.

This suggests that lemon grass has the potential to become a more profitable crop in Bilaspur. These inferences suggest that lemon grass may have reached its peak in terms of growth. This could be due to a number of factors, such as the availability of resources, the demand for the crop, and the government policies that support its cultivation.

**CONSTRAINTS**

**Production Related Problems**

The problems faced by the farmers were classified broadly under production and problems and the results have been presented in Table 4.

Based on the data in the Table 4, it could be observed that all the farmers faced the major problem of high prices of the quality planting material in common. Thereafter discussing group wise, we could notice that the more than 57.00 per cent farmers in all the categories were facing the problem of non-availability of planting material. Irrigation facilities were lacking to more than 38.00 per cent of farmers in all categories.

Small, medium and large farmers were facing the problem of lack of technical knowledge followed by lack of availability of good planting material. Lack of irrigation facilities was the next major problem of the farmers. It was found that there was
not much problem of insect pest attack. More than 64.00 per cent farmers in all categories were found to have lack of technical knowledge to grow lemon grass crop.

On an average 74.00 per cent of the farmers reported the lack of technical knowhow. Nearly 62.00 per cent of the farmers were in need for help to meet the scarcity of planting material where as 44.00 per cent of them opined for the problem of lack of proper irrigation facilities

Policy Implications

- Establishment of research and development centers: There is a need to establish research and development centers to develop new varieties of MAPs and improve the cultivation practices. This will help to increase the productivity of MAPs and make them more competitive in the market.

- It was also observed in the study area that there was no processing unit. So, the government should take up initiative to establish the processing facilities in the nearby tehsil or district level to safeguard the interest of the farmers.

RELATED REFERENCES


https://agriportal.cg.nic.in/horticulture/