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Abstract: The aim of the present paper is to analyze the production and export performance of major Fresh and Dry fruits in Jammu and Kashmir. This paper will also give some suggestion for increasing the production in Jammu and Kashmir. The Regression analysis has been done in order to see changes in production during the study period. Under the changing agricultural scenario, it has been realized that the horticulture sector plays a vital role in providing livelihood security to the farmers globally. Area, production, productivity and export of horticultural produces are vital for increasing farm income and overall employment in the agricultural sector. Horticulture in recent years has emerged as an important and viable option in agriculture and has transformed the subsistence level of farming into a high value commercial enterprise. Horticulture crops provide food and nutritional security, generate employment, maintain ecological balance and provide raw materials for agro-processing industries, thereby improving the economy of state. Horticulture sector in the state of Jammu and Kashmir has a large share in export earnings and employment potential in the state.

Keywords :- Horticultural Production, Export, Employment, Agricultural sector,

INTRODUCTION

Jammu and Kashmir State is predominantly an agrarian economy. Agriculture remains the backbone of the economy more than 60 percent of its population depends on agriculture and allied sectors. This sector contributes around 27 percent to the State’s income. In Jammu and Kashmir, agriculture is the key...
sector for employment and income generation, because large scale industrialization is not desirable ecologically, and due to hilly regions the infrastructure is too poor to attract industries. Therefore, agricultural sector continues to remain the important sector for socio-economic development of the people.

With serious constrains on area expansion and declining scope of other sources of growth of agriculture output, the diversification of agriculture towards non-food grains and high value cash crops including fruits and vegetables, compatible with the comparative advantage of the region is suggested as a viable solution. These crops have potential of income augmentation, employment generation, poverty alleviation and export promotion. According to a study, in the state of Jammu and Kashmir, the scope is to raise output through diversification is highest in the country as well as in the state. There is one per cent shift in area from food-grains to non-food grains entails more than 3 per cent growth rate in crop output. Over the years, horticulture emerged as an important and growing sub-sector of agriculture, offering a wide range of choices to the farmers for crop diversification. It also provides ample opportunities for sustaining large number of agro industries which generate substantial employment opportunities. With agriculture and allied sectors finding alternate ways of increasing productivity of crops, horticulture as a sub-sector, is a revelation, showing remarkable signs of progress in the state.

Jammu and Kashmir State is well known for its horticultural produce both in India and abroad. The state offers good scope for cultivation of horticultural crops, covering a variety of temperate fruits like apple, pear, peach, plum, apricot, almond, cherry and sub tropical fruits like mango, guava, citrus litchi, Phalsa and Berete. Besides, medicinal and aromatic plants, floriculture, mushroom, plantation crops and vegetables are cultivated in the state. Apart from this, well known spices like saffron and black Zeera are also cultivated in some pockets of the state. Horticulture is gaining momentum in the state as its contribution to GSDP remains around 7-8 percent over the past few years. As a result, there is a perceptible change in the concept of horticulture development in the state. There are around 7 lakh families comprising of about 33 lakh people which are directly or indirectly associated with
horticulture. Horticulture development is one of the thrust areas in agriculture and a number of programmes have been implemented in the past, resulting in the generation of higher incomes in the rural areas, thereby improving the quality of life in villages. An income of 4100 crore has been generated from fruit production during 2011-12 which includes an amount of `495 crore from dry fruits.

REVIEW OF RELATED LITERATURE

A thorough review and survey of related literature forms an important part of research. It deals with the critical examination of various published research, enables the researcher to define the frontiers of his fields. The format of a review of Literature may vary from discipline to discipline. A review may be self-contained unit … an end in itself… or a preface and rational for engaging in primary research. A review is a required part of grant and research proposals and often a chapter in theses and dissertation.

Horticulture products-vegetables, fruits, species, and aromatic plants have grown steadily to become the largest category of world agriculture trade. Horticulture has emerged to play a vital role in providing food security globally. During the past few years, demand for high value and low volume horticulture crops has been showing much faster growth than demand for food grains. The increasing share of high value commodities in the consumption basket of the households, higher income and urbanization, changing life styles, market integration and trade liberalization at global level has led to an increased domestic and international demand for horticulture products in India (Naseer, Parvez and Ajaz; 2013). Horticulture is labour intensive in nature and requires net high labour ratio from the stage of planting to stage of marketing of production. The sector requires also lot of support from family members and enables them to earn income, also provides indirect employment in packaging, grading, sorting and processing activities especially in horticulture belts. Indian agriculture is a prelude to economic development and a pre-requisite for poverty alleviation and overall economic development (Wani M.H, Baba S.H, Yousuf Shahid; 2009).

With this backdrop, diversification towards horticultural crops has been suggested as a viable option to stabilize
and raise farm income, enhance agricultural growth and increase employment opportunities (Vyas, 1996; Joshi, 2005; Birthal et al., 2007). Weinberger Katinka and Lumpkin A. Thomas (2005) have highlighted the growing importance and demand of horticulture fruits due to increasing income levels, changing life styles and urbanization and how the horticulture crops contribute the poverty alleviation and economic development via employment generation and income augmentation. The paper has presented an empirical base that how horticulture sector enabled rural poor to escape from poverty through production and exchange of non-staple crops by increasing employment, brings commercialization of rural sector.

Jammu and Kashmir is famous in horticulture produce in India and also abroad, the environmental conditions offers a wide scope for cultivation of all types of horticulture crops grown in different tropical zones temperate fruits like Apple, Pear, Plum, Apricot, Medical and Aromatic plants, Mushroom all types of vegetables, besides these world famous spices like Saffron and Black Zeera are cultivated (Masoodi, 2003).

From the above mentioned reviews, it is revealed that varied and diverse research has been done in the field in an efficient manner. It is evident that many research related to horticulture sector has been done in different angles from different variables but least research work has been done on production and export of fruits (fresh and dry) in Jammu and Kashmir. As we know that the state has varied agro-climate, which is highly favourable for growing a large number of horticultural crops. Therefore in consideration of the status of horticulture industry in the state, the current paper will highlight certain issues regarding the production and export of major fruits in the state, with following objectives to be fulfilled.

**Objectives**

1. To analyze the production of major fresh and dry fruits.
2. To find out the exports of fresh and dry fruits from the state to outside markets.
3. To give some suggestions for increasing the production of horticulture sector.

**Methodology and Data**

Keeping in view the status of the research work, the data has been collected from
both primary and the secondary sources. The present study conducted for Jammu and Kashmir State pertains to the period of 2004-05 to 2013-14. The secondary data has been collected from government official records, valid records of the state government, Directorate of Economics and Statistics Jammu and Kashmir, Department of Financial commissioner revenue Jammu and Kashmir, Department of horticulture Jammu and Kashmir, various published reports, books, journals, statistical digest and other official record from outside and within the state. The equation mentioned below was used to find out the trend value of production of fresh and dry fruits in Jammu and Kashmir.

\[ Y = \beta_0 + \beta_1 X + U_t \]

Where,
- \( Y \) - Dependent variable
- \( X \) - Independent variable
- \( \beta_0 \) - Intercept, \( \beta_1 \) - coefficient (Slope), \( U_t \) = Error term

Growth Rate = \( \left( \frac{Y_c - Y_b}{Y_b} \right) \times 100 \)

Where,
- \( Y_c \) - Quantity in current year
- \( Y_b \) - Quantity in Base year.
Table No 1.1: Production of Fruit during 2004-05 to 2013-14 (000 Mts)

<table>
<thead>
<tr>
<th>Year</th>
<th>Fresh Fruits</th>
<th></th>
<th>Dry Fruits</th>
<th></th>
<th>Total Fruits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Apple</td>
<td>Pear</td>
<td>Others</td>
<td>Total</td>
<td>Walnuts</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004-05</td>
<td>1093.33</td>
<td>40.25</td>
<td>84.02</td>
<td>1217.6</td>
<td>100.60</td>
</tr>
<tr>
<td>2005-06</td>
<td>1151.34</td>
<td>42.36</td>
<td>86.73</td>
<td>1280.43</td>
<td>108.27</td>
</tr>
<tr>
<td>2006-07</td>
<td>1222.18</td>
<td>43.09</td>
<td>108.41</td>
<td>1373.68</td>
<td>114.93</td>
</tr>
<tr>
<td>2007-08</td>
<td>1311.85</td>
<td>45.86</td>
<td>120.31</td>
<td>1478.02</td>
<td>146.78</td>
</tr>
<tr>
<td>2008-09</td>
<td>1332.81</td>
<td>47.38</td>
<td>150.74</td>
<td>1530.93</td>
<td>147.64</td>
</tr>
<tr>
<td>2009-10</td>
<td>1373.00</td>
<td>47.98</td>
<td>113.73</td>
<td>1534.71</td>
<td>165.02</td>
</tr>
<tr>
<td>2010-11</td>
<td>1852.41</td>
<td>62.50</td>
<td>130.64</td>
<td>2045.55</td>
<td>163.74</td>
</tr>
<tr>
<td>2011-12</td>
<td>1747.22</td>
<td>58.21</td>
<td>127.00</td>
<td>1932.43</td>
<td>224.59</td>
</tr>
<tr>
<td>2012-13</td>
<td>1500.25</td>
<td>48.31</td>
<td>61.41</td>
<td>1609.97</td>
<td>227.00</td>
</tr>
<tr>
<td>2013-14</td>
<td>1662.36</td>
<td>72.65</td>
<td>120.4</td>
<td>1855.41</td>
<td>251.93</td>
</tr>
</tbody>
</table>

Source: Directorate of Horticulture (P&M), J&K

During the survey of research work data was obtained which shows the production of fruits (fresh and dry) in Jammu and Kashmir from 2004-05 to 2013-14 given in the above mentioned table 1.1.
The overall production of fruits in Jammu and Kashmir has shown an increasing trend, especially the production of apple and walnut. Total fruit production in the state is dominated by production of apple and walnut.

Table 2.1: Production and Export of fruit outside the state during 2004-05 -2013-14.

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th></th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fresh</td>
<td>Dry</td>
<td>Total</td>
</tr>
<tr>
<td>2004-05</td>
<td>12.18</td>
<td>1.14</td>
<td>13.32</td>
</tr>
<tr>
<td>2005-06</td>
<td>12.80</td>
<td>1.23</td>
<td>14.03</td>
</tr>
<tr>
<td>2006-07</td>
<td>13.74</td>
<td>1.30</td>
<td>15.04</td>
</tr>
<tr>
<td>2007-08</td>
<td>14.78</td>
<td>1.58</td>
<td>16.36</td>
</tr>
<tr>
<td>2008-09</td>
<td>15.30</td>
<td>1.65</td>
<td>16.95</td>
</tr>
<tr>
<td>2009-10</td>
<td>15.35</td>
<td>1.77</td>
<td>17.12</td>
</tr>
<tr>
<td>2010-11</td>
<td>20.46</td>
<td>1.76</td>
<td>22.22</td>
</tr>
<tr>
<td>2011-12</td>
<td>19.32</td>
<td>2.29</td>
<td>21.61</td>
</tr>
<tr>
<td>2012-13</td>
<td>16.10</td>
<td>2.41</td>
<td>18.51</td>
</tr>
<tr>
<td>2013-14</td>
<td>18.55</td>
<td>2.70</td>
<td>21.25</td>
</tr>
</tbody>
</table>


During the tenure of research work data was obtained which shows the export of fresh and dry fruits in Jammu and Kashmir given in the above mentioned table 2.1. It
is clear from the Table that Growth rate is highest in 2008-09 and then in 2013-14 during the study period. In 2007-08, it is zero and in 2009-10, growth rate is -14.32 due to severe drought experienced in various parts of the state.

The figure mentioned above shows the actual value of production of total fruits. It is clear from the figure that actual value has not shown much deviation. Upward increasing trend of production clearly indicates that in absolute terms the production of fruits has increased and there is a positive relation between total fruit production and number of years. The coefficient of determination $R^2 = 0.779753$, indicates that fruit production in Jammu and Kashmir has shown significant increase during the study period.
The figure mentioned above shows that during 2004-05, the total export of fresh and dry fruits outside the state was 8.34 lakh metric tonnes in which the relative share of fresh fruits was 8.20 lakh metric tonnes and relative share of dry fruit was 0.14 lakh metric tonnes however, this figure has been reached to 10.10 lakh metric tonnes during 2013-14, in which the relative share of fresh fruit was 9.92 lakh metric tonnes while, as relative share of dry fruit was 0.18 lakh metric tonnes. In absolute terms the share of fresh fruits in total export of state has shown a considerable progress as compared to export of dry fruits.

RESULTS AND DISCUSSION

In Jammu and Kashmir State especially in Kashmir Division, horticulture plays a significant role in contributing to the economy of the state. As per estimates, over 7 lakh families are actively involved in horticulture sector. This sector is one of the most important employment
generating sectors in the state. Year after year, there is a significant increase in area and production of horticulture crops in the state of Jammu and Kashmir. This continuous increase in production and productivity can be attributed to modal factors like commitment of the farmers/orchardists towards this sector, and with the continuous efforts of the Department of Horticulture and Research Organization and above all the conducive agro-climatic conditions of the State. From Table 1.1, If we look at the data of production for the last ten years, it would be observed that there has been a continuous increase in production.

The production was maximum during the year 2010-11 with (2221.98 thousand metric tonnes) while it was minimum in 2004-05 with (1331.86 thousand metric tonnes). The Production of Dry fruits also increased during the period 2013-14 with 271.84 which is maximum in comparison to last few years and minimum during the year 2004-05 with 114.26 thousand metric tonnes. The overall production of fruits for the year 2014-15 was estimated at 13.54 Lac MTs, as there has been some loss to the Horticulture crop due to low temperature, bad climatic conditions and unexpected rains followed by flood in some areas of the State. During Eleventh Plan Period, food-grains production in the whole country recorded an increasing trend, except in 2009-10, when total food - grains production declined to 218.1 million tonnes due to severe drought experienced in various parts of country.

In Jammu and Kashmir state export of fruits outside has occupied a prominent place in the trade matters. Export of fruits has shown considerable progress. The total quantity exported during 2009-10, was 9.57 lakh metric tonnes which is 55.9 percent of the production figure of the same year, during 2010-11, total quantity exported was 11.12 lakh metric tonnes which is 50.04 percent of the production figure of the same year and during 2013-14, total quantity exported was 10.10 lakh metric tonnes which is 47.52 percent of the production figure of the same year. The total production of fruits under horticulture is increasing every year particularly production of apple and walnut as these two industries of Kashmir are major revenue generator and Job provider, constitutes to lead fruit production in the State. However, there is no significant growth in the export of outside the state. The decline in the export of fruits outside
the state is due to the introduction of market intervention scheme (MIS). In Jammu and Kashmir fruits especially dry fruits, go also to other countries and earn substantial foreign exchange. The export of dry fruits viz, almond and walnut during 2007-08, was 688.11 metric tonnes comprising of 197.11 metric tonnes of almond, 6692 metric tonnes of walnuts.

SUGGESTIONS

- Marketing is the main problem faced by farmers in Jammu and Kashmir. To be able to sell at a proper rate, the proper needs to be graded and packed appropriately. For small farmers, this is not a very easy Job.
- There is need to implement properly the Market Intervention Scheme to help and facilitate growers to sell their produce with improved returns.
- The Govt. should take measures to Control the spurious fungicides/pesticides prevailing in the market, and should open tiny research centers at district level so that proper care can be taken of pre-mature leaf fall and infestation of red spider mite by organizing class room training programs and giving suggestion, guidelines to the Fruit cultivators so that problems can be tracked.
- There is total lack of infrastructure. There should be full-fledged Mandies, dumping facilities, and processing and packaging units in most of the fruit producing districts of the Valley. Government should initiate programmes/schemes for all these problems.
- The state government should revive the fruit growers Cooperative marketing societies and activate the Horticulture department as well as JKHPMC in order to provide better marketing facilities and also to eliminate the role of middle man.
- High Yielding Variety of seeds should be used for better produce.
- Diseases and frequent hailstorms are badly affecting the quality, colour and production of the fruits as a result of which "the export of major fruits is facing severe
threat”. So, there should be control on these diseases in order to increase production.

- There is lack of good transport facilities as Srinagar-Jammu highway, the life-line of Kashmir, gets blocked due to landslides or snowfall in the peak season. Therefore, there should be good transport facilities.

CONCLUSION

Jammu and Kashmir, northern most state of India have different topographical and environmental conditions, possesses comparative advantage in the production of various horticultural products. In some cases it enjoys monopoly in the production of (Saffron), Black Zeera and some fresh fruits and dry fruits (Delicious Apple, Almonds, etc). Economic growth, urbanization and globalization, etc. have fuelled the higher demand for the horticulture commodities in the state which increases the economic benefits from horticulture sector. The horticulture sector has also higher returns and labour absorption over the staple agriculture crops. Horticulture sector in the state of Jammu and Kashmir has a large share in export earnings and employment potential in the state. Horticulture related activities in the state presents wide source of income and livelihood security to large number of people and with the help of multiple backward and forward linkages, horticulture augments the income and economic prospectus of huge chunk of population like Sprycide, Fungicide and fertilizer dealers and sellers, transporters, small scale industrial workers (box preparation and processing). Horticulture sector provides security and self-employment opportunities for labour of
informal sector like women labour working in grading, sorting and packaging and apple carrying; Streetwalkers’ selling the pre-harvest dropped Apples are other examples.

References


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