Analysis of Production and Productivity of Saffron Cultivation in Jammu and Kashmir

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Abstract

Saffron is a very important cash crop of Kashmir and has been in cultivation for a long time on small farms. Over than three decades from now the land under cultivation of saffron in Pampore (Kashmir) region is shrinking rapidly due to encroachment of local people. The present study was conducted in Kashmir Valley to know the production of saffron by different districts. It was found that Pulwama dominant in cultivation of saffron.

Introduction

The history of saffron cultivation goes back more than 3000 years. Experts believe that saffron was first documented in 7th century BC and has been used as a spice and medicine in the Mediterranean region since then, with usage and cultivation spreading to other parts Eurasia as well as North America and North Africa. In the last decade saffron cultivation has spread to Oceania.

Saffron was later established a minor but expensive crop in the old world from Indian to Britain. In India saffron is exclusively cultivated in Jammu and Kashmir with new reports from Himachal Pradesh and Uttaranchal. Saffron cultivation around Padampore (now Pampore) in the Kashmir valley dates back to around 500BC[1].

Some of the studies shows that saffron was introduced in Kashmir is not prey known, although evidence from 'Rajatarangini' written by 12th century by Kalhana, indicates its presence in Kashmir even before the reign King Lalitaditya in 750 AD. This was 'golden' spice is known as '*Kum Kum*' and '*Kasar*' in Sanskrit and '*Koung*' in Kashmiri language[2]. In Kashmir saffron is grown on uplands, which are lacustrine deposits located at an altitude of 1585 to 1677 m above the sea level under temperate climatic conditions[3].

In order to obtain high economy from the saffron parts grown in Kashmir new areas should be covered under cultivation. Analysis of different constituents and their probable applications in the healthcare using cutting edge techniques, in a sustainable way, is promoted from all corners. Looking for procedures and their amplifications should be increased, which directly or indirectly enhance the genetic diversity among the cultivars of saffron. Encroachment in the field of saffron cultivated belt, either for domestic life or for commercial purposes, should totally banned.

Saffron is a very important cash crop of Kashmir and has been in cultivation for a long time on small farms. Over than three decades from now the land under cultivation of saffron in Pampore (Kashmir) region is shrinking rapidly due to encroachment of local people. Increase in urbanization and presence of anthropogenic pressures are other problems[17]. The total area under this crop in Jammu and Kashmir

in 2011-12 was 3800 hectares with an annual production of 11.40 MT and productivity of 3.00 kg/Ha, while almost a decade back in 1996-97 the area recorded was 5707 Ha with an annual production of 15.95 MT and productivity of saffron 2.79 kg/ha. This shows a decrease of 83% in area, 215% in production and 72% in productivity of saffron in one decade in Kashmir.

Objectives

- To know the production and productivity status of saffron in Jammu and Kashmir.
- To know the district wise production of saffron in Kashmir valley.

Material and Methods

The present study was conducted in Jammu and Kashmir state, the data was collected from directorate of economics and statistics Srinagar, Spice board of India, research papers, books and internet. The time duration of the study was 12 years from 1996-97 to 2011-12. Simple statistic tools were used to know the growth and productivity of saffron.

Result and Discussion

The Valley of Kashmir is famous for its saffron fields world over, located on both sides of the national highway on the "Karewas" (elevated dry table lands of alluvial origin) of Pampore (alt. 1,700 ms), about 15 km southeast of Srinagar Kashmir India. The Karewas are reported to be of lacustrine origin of Pleistocene and Post Pleistocene. The soil colour varies from brown to yellowish brown besides being slightly alkaline in nature. The organic carbon, available nitrogen and phosphorous of these soils are low to medium to high.

In Kashmir, farmers growing saffron face economic losses as the production per hectare is decreasing year by year mainly due drought, diseases and weed infestation. Being a perennial crop, saffron is infested by different kinds of annual, biennial and perennial weeds. The weeds compete with the crop for space, light, water and the nutrients. Being quick growing compared to the saffron crop, they cover the space and spread faster and suppress the crop. The problem of weeds in saffron is further aggravated because of the fact that the crop is grown in irregular furrows and there is enough inter-space between them to be covered by weeds. Saffron plants after emerging out of the soil in October remain in active growth and vegetative phase up to April. There after fields are devoid of any vegetation till late September. The large period from May to September provide open space for weeds which get monopoly to spread over the entire fields without any resistance that would otherwise be encountered in presence of the crop. The saffron plant being short with narrow upright foliage with little lateral spread has a canopy that offers very little competition to the weeds facilitating them to cover the gaps easily and promptly.

Present Position of Saffron in Kashmir

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Table 1.1: Area, Production and Productivity of Saffron in J&K

Year	Area (ha)	Growth rate	Production (Mt)	Growth rate	Yield (Kg/ha)
1996-97	5707	-	15.95	-	2.80
1998-99	4116	-27.87	12.88	-19.25	3.13
1999-00	3997	-2.89	7.65	-40.61	1.89
2000-01	2831	-29.17	3.79	-53.07	1.27
2001-02	2713	-4.17	0.30	-91.64	0.095
2002-03	2825	-4.13	6.50	2066.67	2.28
2003-04	2742	-2.98	5.15	-20.77	1.88
2004-05	3143	14.62	6.86	33.20	2.23
2006-07	3010	-4.23	6.50	-5.24	2.15

2007-08	3280	8.97	8.20	9.53	2.50
2008-09	3280	0	7.70	-6.09	2.34
2009-10	3785	15.40	9.46	22.89	2.50
2010-11	3800	0.39	9.50	0.40	2.50
2011-12	3800	0	11.40	20	3.00

Source: department of agricultural J&K

Figure 1.1: Area Under Saffron in J&K

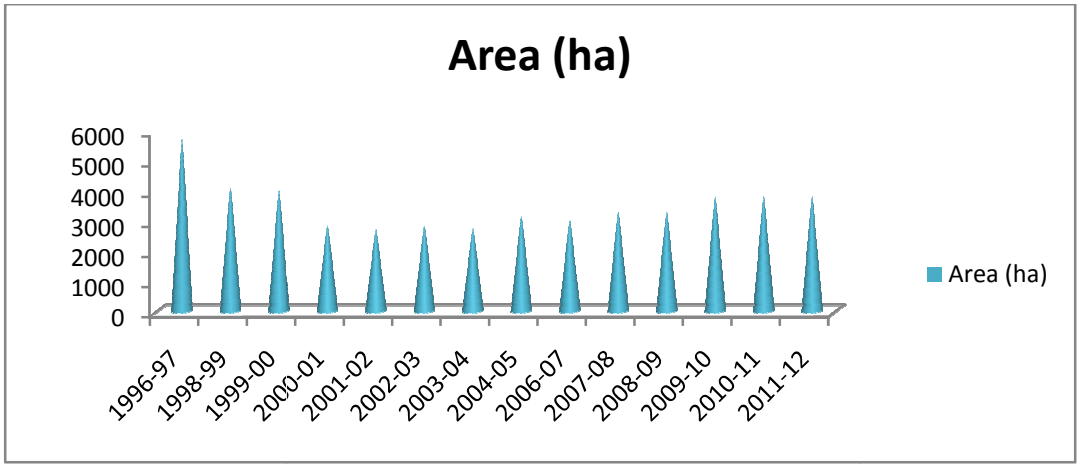


Figure 1.2: Production of Saffron in J&K

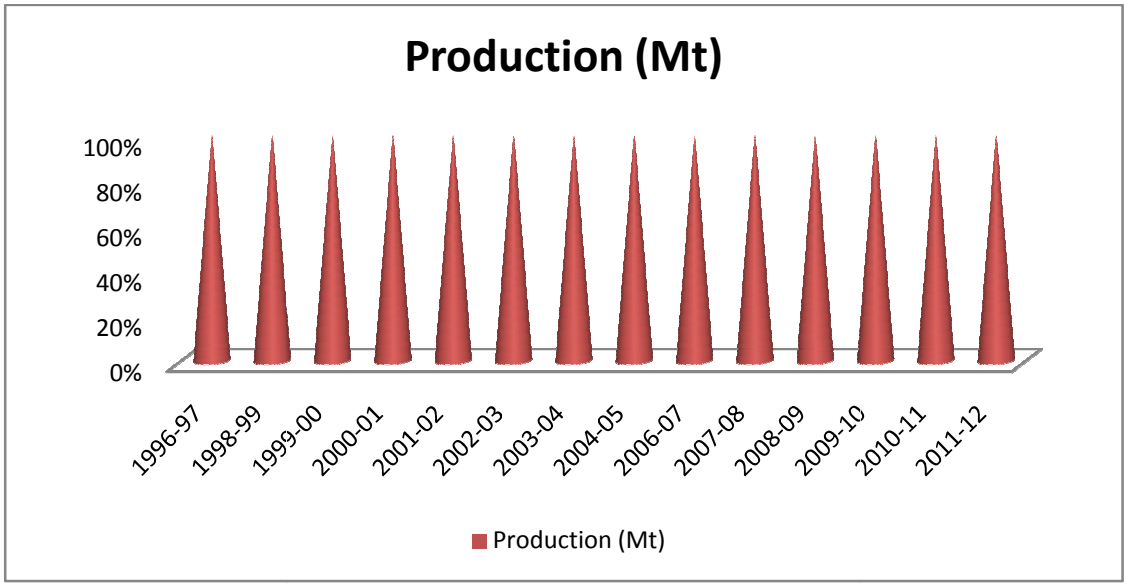
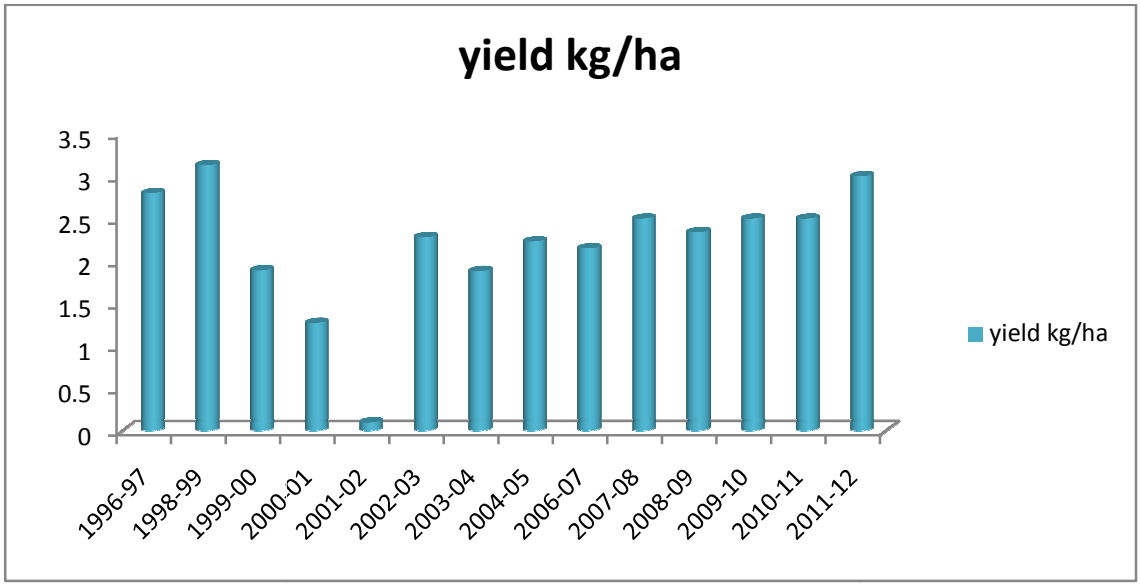


Figure 1.3: Productivity of Saffron in J&K



The analysis of the figure showed that area under cultivation of saffron decreases from 5707 hectares in 1996-97 to 2742 hectares in 2003-04 and then increases to 3800 hectares in 2011-12 as shown in figure 1.1. The production of the saffron in J&K decreases from 15.95 Mt in 1996-97 to 0.30 in 2001-02 and then increase to 11.40 Mt in 2011-12 as shown in figure 1.2. The productivity of the crop decreases from 2.80 kg/ha in 1996-97 to 0.096 in 2001-02 and thereafter increases to 3.00 kg/ha in 2011-12 as shown in figure 1.3.

District Pulwama commonly known as saffron bowl of Kashmir is the main contributor to saffron production 4.41 Mt under the area of 3200 Ha followed by district Budgam 1.27Mt district Srinagar 0.38 and Doda district of Jammu province as shown in Table 1.2.

Table 1.2: District wise area under saffron under in J&K 2009-10

S.No	District	Area(Ha)	Production Mt
1	Pulwama	3200	4.41
2	Budgam	300	1.27
3	Srinagar	165	0.38
4	Doda	120	0.20
5	Others	15	0.10
Total		**3800**	**6.36**

Source: national saffron mission

Export of saffron from India in small quantities has been a regular feature of international trade. As shown in the table 1.3 in 2005-06 saffron is exported from India was 6.06 Mts reduces to 1.59 Mt in 2009-10 and total value of 201.16 lakh in 2005-06 increases to 342.71 lakh. This indicates that there has been decline in total quantity but the value has increases mainly due to reduction in value of money or inflation.

Table 1.3: Export of saffron from India

Year	Quantity Mt	Value (lakhs)
2005-06	6.06	201.16
2006-07	7.18	389.10
2007-08	2.03	164.38
2008-09	4.06	372.78
2009-10	1.59	342.71

Source: Spice Board of India

India imports saffron mainly from Iran. The quantity imported through legal channels was worth of 0.298 lakh in 2005-06, which increases to Rs1,745 in 2010-11 as shown in the table 1.4.

Table 1.4: Import of Saffron into India

Year	Average price (lakhs)
2005-06	0.298
2006-07	0.438
2007-08	1.123
2008-09	1.891
2009-10	2.701
2010-11	1.745

Source: Spice Board of India

In order to get full benefit from the extracts of the saffron plant of Kashmir cultivated one, various techniques and sustainable approached has to be introduced. Techniques like induced mutagenesis and tissue culture has to be implemented and reserving the land for its cultivation has to be promoted. Cultivation in indoor pots and promotion of its cultivation in kitchen gardens has to be enhanced

Conclusion

Saffron is a high value commercial crop. It is cultivated in many parts of the Jammu and Kashmir but about 77% cultivation is confined in Pampore tehsil of district Pulwama. The demand of saffron in the national and international market is increasing and is fetching high price for its producers. The saffron has been exported since long times to a few countries. But even after its high prices it production has decreased during the last decade of high price and decrease in production is because of the drastic decrease in production, productivity, poor marketing structure and area under cultivation. The basic growth retarding factors of the crop are its weak research base, unscientific in all respects, discouraging market mechanism and non interference of the government. Keeping in view the increasing demand and relatively low production cost of saffron the need of time is to make sufficient investment in the cultivation of this commercial crop so that production will increase in a manner which will meet the domestic demand fully and also the international demand to some extent.

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