

Economic Analysis of Black Pepper Cultivation in Kerala

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Abstract: Kerala, the southernmost state of India is renowned for high quality black pepper. However, in recent years the area, production and productivity of the crop in the state show a declining trend. The presence of old and senile plants, lack of proper care and management, difficulty in harvests are the major reasons for the decline in acreage and production. Share of pepper as a percentage of total exports has also halved from 5.37 per cent to 2.11 per cent during the period from 2008 to 2012, while the value has also declined from 7.81 per cent to 5.27 per cent. Concerted efforts at replanting the old vines with new high yielding varieties and educating the farmers on proper care and management of the vines will help in reversal of the trends.

Keywords: black pepper, area, production, high yielding varieties

1. Introduction

Black pepper, the most traded spice in the world is native to South India. Till the 1990's India reigned supreme in production and export of the crop, however, now it stands second to Vietnam in production and exports⁽¹⁾. Supply shortages in the major producing centres of the world have caused unprecedented rise in the domestic as well as international prices of pepper^(2, 3). With the domestic prices of both garbled and ungarbled pepper moving around Rs 700/ kg, farmers have started showing keen interest in the crop. The demand for rooted pepper cuttings and layers has increased several folds this year, most of which remain in satiated. This trend may result in an increase in area under the crop, but, for a corresponding increase in production, concerted effort at proper maintenance, care and pest and disease management need to be done. At this juncture when pepper is assuming a new found status among the farmers of Kerala, this paper analyses the trends in the area, production and productivity of the crop in the State.

2. Methodology

The paper uses mainly secondary data on area, production and exports published by different Government departments for the analysis.

Black Pepper Cultivation in India

India, with an annual production of about 0.46 lakh tons is the second largest producer of black pepper, the most traded spice in the world. Kerala and Karnataka are the major pepper growing states in India (Table 1). In recent years, other states like Andhra Pradesh, Orissa, West Bengal, Assam, Tamil Nadu, Tripura, Meghalaya, etc. have also started the cultivation of pepper.

The state wise area, production and productivity of the crop are given in Tables 1, 2 and 3 respectively. Table 1 shows a steady increase in the area under pepper in Karnataka while in Kerala the area remains almost static at around 1.7 lakh hectares upto 2011-12 and starts declining thereafter. The production and productivity of the crop in Kerala also exhibit a marked downward trend while Karnataka as well

as Tamil Nadu have shown steady increase over the period 2007 to 2012 as can be seen from Tables 2 and 3.

Table 1: State wise area of pepper – 2007-08 to 2011-12 (hectares)

State	2007-08	2008-09	2009-10	2010-11	2011-12
Karnataka	16320	18847	19706	21061	21061
Kerala	175679	153711	171489	172182	172182
Tamil Nadu	3124	3117	2786	3009	3009
Other states	3833	5624	5005	5129	5129
	198956	181299	198986	201381	201381

Source: <http://www.spicesboard.in>

Table 2: State wise production of pepper – 2007-08 to 2011-12 (tons)

State	2007-08	2008-09	2009-10	2010-11	2011-12
Karnataka	3624	6236	15000	18240	16000
Kerala	41952	33991	27500	20640	16500
Tamil Nadu	719	716	7500	9120	10500
Total	46295	40943	50000	48000	43000

Source: <http://www.spicesboard.in/>

Table 3: State wise productivity of pepper – 2007-08 to 2011-12 (tons/ha)

State	2007-08	2008-09	2009-10	2010-11	2011-12
Karnataka	0.22	0.33	0.76	0.86	0.76
Kerala	0.24	0.22	0.16	0.12	0.1
Tamil Nadu	0.23	0.23	2.69	3.03	3.48

Source: <http://www.spicesboard.in/>

In line with the declining trends in area and production the productivity of black pepper is also drastically declining in Kerala. However the productivity in Tamil Nadu moves in an unbelievably fast track from 0.23 to 3.48 tonnes/ha over the period 2007-08 to 2011-12 with the area remaining almost static at around 3000 ha. This much productivity is not achieved in Kerala even under best management practices.

Black pepper cultivation in Kerala

District wise area, production and productivity of the crop in Kerala are shown in Table 4. Idukki has the maximum area, production and productivity among the districts of Kerala

and she is the single major contributor (as much as 65.71 per cent) to total production of the State with 51.65 per cent of area under the crop ⁽⁴⁾. However, even Idukki's productivity is lower than that of Karnataka and Tamil Nadu which is really worth consideration for formulation of strategies for improvement of the performance of the crop in the State. Even though Idukki is the major producing district, the crop is raised in almost all the homesteads of the State as an intercrop.

Table 4: District wise Area, Production and productivity of black pepper in Kerala (2012-13)

Sl No	Name of district	Area (ha)	Production (tonnes)	Productivity (t/ha)
1	Thiruvananthapuram	2441	873	0.358
2	Kollam	3745	1486	0.397
3	Pathanamthitta	1692	753	0.445
4	Alappuzha	639	148	0.232
5	Kottayam	3192	1179	0.369
6	Idukki	43755	30424	0.695
7	Ernakulam	2113	631	0.299
8	Thrissur	1888	582	0.308
9	Palakkad	2723	914	0.336
10	Malappuram	2517	542	0.215
11	Kozhikode	3332	1098	0.329
12	Wayanad	8945	3706	0.414
13	Kannur	5018	2366	0.471
14	Kasargod	2707	1596	0.589
	State total	84707	46298	0.547

Source: www.ecostat.kerala.gov.in

Table 5: Trends in Area, production and productivity of black pepper in Kerala

Year	Area (lakh ha)	Production ('000 t)	Productivity (t/ha)
70-71	1.175	25.03	0.213
74-75	1.184	27	0.230
80-81	1.081	28.52	0.264
84-85	1.058	17.35	0.164
90-91	1.685	46.8	0.277
94-95	1.867	59.26	0.317
00-01	2.021	60.93	0.301
04-05	2.376	74.98	0.315
09-10	1.715	42.46	0.248
14-15	0.854	40.69	0.263

Source: Farm Guide 2012, 2013, www.ecostat.kerala.gov.in

There is a steady decline in area under pepper in the State ever since 2001-02(4). The area fell from 2.02 lakh ha in 2000-01 to 1.72 lakh ha in 2009-10, a decline of 14.85 per cent and further to 0.85 ha in 2014-15 recording a decline of 50.58 per cent in the five year period from 2009-10 to 2014-15. Production also has recorded a decline from 60.93 lakh tonnes to 46.30 lakh tonnes ⁽⁵⁾ during the period, a decline of 24 per cent. The downward trend in production contributed by a decline in area and productivity is really alarming and has serious implications on the economy of Kerala since pepper is a most traded spice of Kerala and a foreign exchange earner to the State exchequer.

Pepper exports from India

USA is the major destination of our exports in terms of both quantity and value followed by UK. The total exports of pepper decreased from 19750 kg in 2009-10 to 15303 kg in 2012-13 ⁽⁶⁾, however the value has almost doubled during the same period (Table 8), thanks to the rise in prices. India is also a major consumer of pepper and as production falls, the surplus available for export also diminishes which may result in a fall in the quantum as well as value of exports. Increase in value of exports consequent to a price rise is not a very favourable indication, since the prices of internationally traded commodities are subject to fluctuations, though in the case of black pepper there has been a steady upward trend since 2008-09, triggered mainly by supply constraints (Table 9).

Table 6: Share of pepper in total spice exports (Quantity in tonnes and value in Rs lakhs)

	2008-09		2009-10		2010-11		2011-12		2012-13	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value	Qty	Value
Pepper	25250	41373	19750	31392	18850	38318	26700	87813	15363	63810
Total	470520	530025	502750	556050	525750	684070	575270	978342	726613	1211275
% share	5.37	7.81	3.93	5.65	3.59	5.6	4.64	8.98	2.11	5.27

Source: <http://www.spicesboard.in/>

Table 7: Country wise Pepper exports from India

Country	2009-10		2010-11		2011-12		2012-13	
	Qty	Value	Qty	Value	Qty	Value	Qty	Value
USA	8638	13149	6921	13883	9383	30979	7178	29590
UK	1603	2908	1477	3274	1444	4973	1310	5658
Germany	1028	1945	715	1333	1181	3842	748	3359
Japan	598	943	593	1318	690	2388	728	3233
Canada	896	1379	1065	2111	897	2786	539	2062
Others	6987	11068	8079	16399	13104	42845	4860	19908
Total	19750	31392	18850	38318	26699	87813	15363	63810

Source : <http://www.spicesboard.in/>

Share of pepper as a percentage of total exports has also halved from 5.37 per cent to 2.11 per cent during the period from 2008 to 2012, while the value has also declined from 7.81 per cent to 5.27 per cent. To combat the fall in production and the rise in prices, exporters resort to import of commodity from cheaper sources for re-export. This however can be harmful to our industry since there are chances of inferior quality produce getting mixed with our pepper which is renowned for its quality.

- [6] www.spicesboard.in/ (Spices Board, Government of India)
- [7] Kerala Agricultural University. Package of Practices Recommendations, Crops. 2011. Directorate of Extension, KAU.

Table 8: Trends in domestic prices of black pepper (Rs/kg)

Year	Peak	Average
2008-09	143.96	129.30
2009-10	144.86	136.42
2010-11	229.54	197.05
2011-12	399.23	318.77
2012-13	413.91	398.18
2013-14	532.08	448.29

Source: <http://www.spicesboard.in/>

3. Conclusion and Future Strategy

There is at present an onrush of farmers in all production centres for planting materials of black pepper consequent to the high prices prevailing in the market. However, good quality planting materials of high yielding varieties are scarce. And farmers in general have a tendency to plant when prices rule high but forget the crop when prices fall.

Majority of the crop in Kerala grows as intercrops in home gardens and majority of them are old senile and unproductive and must be replanted. While new planting is undertaken it must be ensured that shade tolerant high yielding varieties suited to Kerala are planted. In home gardens often the crop remains uncared for until the harvest time and even then much of the crop is lost because the vines are trailed on tall trees and harvesting becomes very difficult and expensive. Farmers need to be educated on scientific crop management practices to ensure better productivity of the crop.

Ensuring planting of improved high yielding varieties like Panniyoor 1 (world's first hybrid pepper which performs well under open conditions) to Panniyoor 8⁽⁷⁾ depending on availability of sunlight, proper and scientific crop management, ensuring prophylactic measures for pest and disease management, promoting good agricultural practices and a more regulated system of planting with standards of uniform height will be helpful in improving overall production and productivity. Proper awareness to farmers on post harvest handling and value addition of pepper also can help them to realise better income from the crop.

References

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- [2] <http://www.ipcnet.org> (international pepper community)
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- [5] Government of Kerala, Farm Information Bureau. Farm Guide, 2012, 2013