

## PEPPER MARKETING: PROBLEMS AND PROSPECTS

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### ABSTRACT

Black pepper is an important item in our agricultural exports. However, in recent years, India yielded her virtual monopoly position to Brazil, Malaysia and Indonesia in both the fields of production and export of pepper. The direction of Indian pepper trade has also undergone dramatic change to a considerable extent in these years. While our exports to the USA have declined substantially, the exports to the USSR and other centrally planned countries have gone up following bilateral trade agreements. A critical appraisal of current problems of pepper trade in India forms the basis of a number of proposals for tackling the issues.

### INTRODUCTION

Pepper (*Piper nigrum*) is one of the most ancient crops cultivated in India. It was the chief spice in the world during the Middle Ages and the commercial importance of this commodity in those days can be imagined from the gravity of the fact that it created a necessity for the search for a sea route to India. Till the beginning of the 19th century, Indian pepper had a pride of place in the world market. Later on, the countries like Indonesia, Malaysia and Thailand appeared in the scene of international trade as suppliers of black pepper and as a consequence India lost her monopoly position in this respect. During 1935-39 the average world production of pepper stood at 84 thousand tonnes and Indonesia accounted for 58.3 thousand tonnes (69.4%) followed by India with an average production of 15 thousand tonnes (17.8%). However on account of large scale destruction of the pepper plantations in Indonesia, Borneo and Sarawak (as a part of the second world war devastations), India regained near monopoly in this commodity for quite a few years immediately following the second world war. During 1947-49, the world pepper production was around 39 thousand tonnes and India's share worked out at 80 percent. But through the post-war drives, Indonesia and

other pepper producing countries improved the conditions of their plantations and forged ahead as the leading producers of pepper.

India's pepper production as percentage of world production declined from 80 percent in 1947-49 to 50 percent in 1950-51, to 47.5 percent in 1960-61 and to 25.6 percent in 1965-66. Between 1970 and 1976, India produced on an average 27 thousand tonnes of pepper per annum which then accounted for 24 percent of world production of about 112 thousand tonnes. Indonesia, Malaysia and Brazil accounted for 23.8, 29 and 16.5 percent respectively of the world production during the same period (Table 1).

Current world production of pepper is estimated to be around 140 thousand tonnes and the production level for India is around 28 thousand tonnes. In other words, India now produces only one-fifth of the world pepper. It is most striking to observe that the production of pepper in Brazil went up from a mere level of 300 tonnes in 1950-52 to about 50 thousand tonnes in 1979-80. Today, Brazil ranks first in the world production, placing Malaysia, Indonesia and India in lower orders.

### Exports

India's relative share in world trade of pepper came down from near monopoly stage in late 40s to 64 percent in 1950-51, to 42.5 percent in 1960-61 and to 37.1 percent in 1965-66. Between 1970 and 1976 the export of pepper from India further declined to 24.9 percent. The shares of other major producing countries namely, Malaysia, Indonesia and Brazil for the above period were in the order of 32, 20.6, 16.9 percent, respectively (Table 2).

Though India has failed to obtain an appreciable share of the world pepper trade, the volume of world export of this spice has gone up from 25 thousand tonnes in 1950 to 40 thousand tonnes in 1960, to 70 thousand tonnes in 1965, and around 90 thousand tonnes in 1975. The export figure for the world pepper stood around 105 thousand tonnes in 1978 while the corresponding figure for India was as low as 15 thousand tonnes. During the same year, Brazil exported double the quantity of Indian export and emerged out as the biggest supplier of pepper in the world market.

Table 1. World production of pepper during 1970-'76 ('000 Tonnes)

Country	1970	1971	1972	1973	1974	1975	1976	Average of 70-76	%
India	25.0	26.0	26.0	26.2	28.7	28.2	28.8	27.0	24.0
Indonesia	17.2	24.3	31.0	28.5	27.5	30.5	26.9	26.6	23.8
Malaysia	25.9	28.4	27.3	23.8	29.7	41.4	37.1	29.1	26.0
Brazil	14.3	13.5	14.5	14.5	18.0	26.0	28.0	18.4	16.5
Madagascar	4.4	4.4	5.8	4.8	4.9	5.0	5.0	4.9	4.4
Other Countries	16.0	17.3	2.0	3.0	0.6	1.5	0.7	5.9	5.3
<b>World</b>	<b>102.8</b>	<b>113.9</b>	<b>106.6</b>	<b>100.8</b>	<b>109.4</b>	<b>122.6</b>	<b>126.5</b>	<b>111.8</b>	<b>100.0</b>

Table 2. World export of pepper during 1970-76 ('000 Tonnes)

Country	1970	1971	1972	1973	1974	1975	1976	Av. of 70-76	%
India	22.3	18.0	19.2	28.1	28.9	24.6	17.9	22.7	24.9
Indonesia	2.6	22.9	24.9	25.6	16.0	15.2	24.2	28.8	20.6
Malaysia	25.9	28.4	27.3	23.8	29.7	31.4	37.1	29.1	32.0
Brazil	9.0	17.3	14.3	13.8	15.5	17.9	20.0	15.4	16.9
Madagascar	3.8	3.1	5.5	5.0	4.9	4.5	4.5	4.5	4.9
Other Countries	1.7	0.2	0.1	1.7	0.4	0.1	0.0	0.6	0.7
<b>World</b>	<b>65.3</b>	<b>89.9</b>	<b>91.3</b>	<b>98.0</b>	<b>95.3</b>	<b>93.7</b>	<b>103.7</b>	<b>91.0</b>	<b>100.0</b>

Source : Pepper Community.

During the last 30 years, the production of Indian pepper varied between 21 and 32 thousand tonnes, whereas the volume of Indian exports in pepper fluctuated between 12 and 31 thousand tonnes (Table 3).

**Table 3. India: production and export of pepper ('000 tonnes)**

<i>Year</i>	<i>Production</i>	<i>Export</i>	<i>Export as % of production</i>
1950-51	21	16	76.19
1955-56	28	13	46.43
1960-61	28	17	60.71
1965-66	23	26	113.04
1970-71	26	18	69.23
1971-72	26	19	73.08
1972-73	26	20	76.92
1973-74	26	31	119.23
1974-75	28	26	92.86
1975-76	28	24	85.71
1976-77	32	20	62.50
1977-78	32	25	78.13
1978-79	26	15	57.69

#### **Utilization and demand**

Pepper is an indispensable ingredient of sauces, soups, pickles and other food preparations in the household sector. In the developed countries pepper is extensively used by the food processing industries and in particular by the meat sectors. In India,

besides its use as an important spice, pepper is one of the chief ingredient in most Ayurvedic drug preparations. As a carminative, pepper owes its properties to three important constituents namely, volatile oil, a resin and an alkaloid 'piperine.' These three constituents are present both in the skin or pericarp and in the hard coated seeds which it encloses.

Indian pepper, commonly known as 'Malabar pepper' is considered to be the best in the world for its excellent aroma, flavour and pungency. Tellicherry pepper possesses the characteristic 'boldness,' in addition to all the properties of Malabar pepper. Historically, the sausage makers of Italy have been some of the major customers of Tellicherry pepper.

Indonesian black pepper, otherwise known as 'Lamong pepper' (the name goes with the producing district) compares with Malabar in pungency and flavour. But unlike Malabar, the berries of Lampong pepper are small and thin shelled and are suitable for machine decortication. Moreover, ground black pepper of Lampong is relatively light in colour. However, Indonesia's 'Muntok pepper' goes into white pepper production and this type has its characteristic aroma and relatively mild flavour.

'Sarawak pepper' of Malaysia is also mild in flavour, low in volatile oil content and very light coloured in appearance. The bulk of the Sarawak pepper goes into white pepper production. Europe and commonwealth nations are the traditional customers of this pepper.

Brazilian black pepper possesses characteristic appearance and relatively smooth surface. While the outer skin of this type of berry is black, the centre of the berry is very white, causing a sharp black and white contrast in the appearance of the ground pepper. So far as its flavour is concerned, Brazilian black pepper is graded as inferior to Tellicherry, Malabar and Lampong varieties. Brazil also produces some quantity of white pepper, but this type is less pungent than Muntok white pepper of Indonesia.

Madagascar, even though a small producer of pepper in the world produces and supplies a major portion of green pepper available in the world market. Among the major producing countries

India leads in respect of supply of pepper oleoresin and oil. Recently, dehydrated green pepper was introduced into the world market by India and it is a most appropriate step to penetrate into the western sophisticated market. India, as well as other major producers of pepper are now attempting to directly enter into the retail outlets of the major importing countries through the ground pepper supply in consumer packs.

USA is by far the largest pepper importing country in the world. Nearly one-fourths of the total world trade in pepper is directed to that country. Among the other pepper importing countries, the important buyers are USSR, Federal Republic of Germany (West Germany), France, Japan, UK, Italy, Morocco, and Canada. During 1970-78, USA imported on an average 25 thousand tonnes of pepper (both black and white) per year, while USSR, West Germany and France imported 9.4, 8.1 and 5.5 thousand tonnes, respectively. The volume of import in respect of Japan, UK, Italy, Morocco and Canada for the above period were in the range of 2.3 and 4.6 thousand tonnes a year (Table 4).

**Table 4. Average annual import of pepper by major importing countries during 1970-78 ('000 tonnes)**

<i>Rank</i>	<i>Country</i>	<i>Vol.</i>	<i>Rank</i>	<i>Country</i>	<i>Vol.</i>
1	U.S.A.	25.2	9	Canada	2.3
2	USSR	9.4	10	Poland	1.8
3	W. Germany	8.1	11	Netherland	1.4
4	France	5.5	12	Argentina	1.4
5	Japan	4.6	13	Yugoslavia	1.3
6	UK	3.8	14	Spain	1.2
7	Italy	3.2	15	Australia	1.1
8	Morocco	2.6	16	Belgium	1.0

The per capita consumption of pepper for the countries such as Federal Republic of Germany, Switzerland, USA, France, Denmark, Canada and Hungary comes between 100 and 131 gms per annum. For countries like Austria, Netherlands, Sweden, Australia, Poland, Italy and UK, the per capita consumption of pepper varies between 51 and 97 gms. (Table 5).

**Table 5. Per capita consumption of pepper in major importing countries in 1975**

<i>Rank</i>	<i>Country</i>	<i>gms</i>	<i>Rank</i>	<i>Country</i>	<i>gms</i>
1	W. Germany	131	9	Sweden	90
2	Switzerland	121	10	Australia	82
3	U.S.A.	117	11	Poland	62
4	France	107	12	Italy	58
5	Denmark	102	13	UK	51
6	Canada	100	14	Spain	36
7	Hungary	100	15	USSR	32
8	Austria	97	15	Yugoslavia	32
9	Netherlands	94	16	Japan	28

The trade statistics reveal that in 40s and 50s the main destination for Indian pepper was the USA followed by the UK and West European countries. From 60s, the exports of Indian pepper to these countries tended to decline as a result of bilateral trade agreements with the USSR and socialist countries of Eastern Europe such as Poland, Czechoslovakia, and Yugoslavia. By 1961-62 the export of Indian pepper to American zone came down to 45.8 percent and to UK and ECM countries to 13.6 percent of the total Indian pepper exports. In subsequent years the rate of decline of Indian pepper to the USA and West European countries

Table 6. Import of pepper from India by major pepper importing countries during 1973-'74—1977-'78 (Tonnes)

Country	1973/74	1974/75	1975/76	1976/77	1977/78	Av. for 5 years	% Total
USSR	9412	7541	10244	8390	9473	9012	35.40
U S A	7736	6074	3756	1481	5119	4833	10.01
Canada	1417	1471	1254	715	1013	1174	4.6
Italy	2321	1048	1284	1135	1057	1369	5.4
Czechoslovakia	891	1580	888	930	1252	1108	4.4
Yugoslavia	1519	332	421	1807	905	997	3.9
Poland	795	2759	1617	1404	781	1471	5.81
Rumania	65	1291	1199	842	879	855	3.31
Hungary	1110	738	350	650	200	610	2.40
Sudan	143	47	58	158	62	94	0.4
Other countries including UAR	6239	3460	3155	3015	3818	3937	15.4
<b>TOTAL</b>	<b>31648</b>	<b>26341</b>	<b>24226</b>	<b>20527</b>	<b>24559</b>	<b>25460</b>	<b>100.0</b>

was of the significant order. In the year 1966-68, the American zone accounted for only 10.5 percent of the total exports of Indian pepper, whereas the East European countries accounted for 72.3 percent of the same. Between 1973-74 and 1977-78, the USSR accounted for 35.46 percent followed by USA accounting for 19 percent of total pepper exports from India (Table 6). However, during 1979-80 the Soviet Union alone imported nearly 50 percent of India's total pepper export of 20 thousand tonnes. Pepper shipped to the USSR and East European nations is delivered against payment in rupees and commands a premium.

India's share in the total import of pepper by the individual importing countries was analysed and it was observed that in recent years India meets about 88 percent of total pepper requirement of the USSR, 100 per cent of Poland, 80 percent of Czechoslovakia, 60 percent of Yugoslavia and nearly 42 percent of Hungary. The supplies to the traditional pepper buyers in general and the USA in particular have declined partly due to lack of exportable surplus left over after meeting the obligatory demand of East European countries and partly because of the stiff competition in international markets from other major pepper producing countries. During 1971 to 1977 India's share in the total imports of the USA, UK and Japan constituted as 15.75, 2.93 and 1.96 percent, respectively (Table 7).

Another possible reason for India's failure to capture West European market is the growing demand for white pepper in the household sector in these countries. White pepper in these days accounts for 60 to 70 percent of the total annual imports of pepper into the West European markets. The production as well as export of white pepper so far as India is concerned, is negligible. As previously mentioned, Indonesia, Malaysia and to some extent Brazil produce white pepper in bulk quantities for exports to the industrially developed countries. Although the flavour of white pepper from Brazil is not considered to be on par with that of Malaysian (Sarawak) and Indonesian (Muntok) white pepper, several importers tend to prefer Brazilian white pepper on account of its clean appearance and uniform size.

**Table 7. Import of pepper by major importing countries and India's share in the total import of those countries (Tonnes)**

<i>Country</i>	<i>Period</i>	<i>Av. annual import</i>	<i>Av. annual import from India</i>	<i>India's share in %</i>
USA	1971 to 1977	25674	4043	15.75
Canada	-do-	2297	1169	50.89
Japan	-do-	3579	70	1.96
UK	-do-	3307	97	2.93
Italy	-do-	3272	1236	37.78
Norway	-do-	282	34	12.06
Denmark	-do-	581	15	2.58
Spain	-do-	1208	54	4.47
Switzerland	1972 to 1977	730	19	2.60
USSR	1971-1977	9365	8254	88.14
Poland	1973 to 1975	1428	1428	100.00
Yugoslavia	1974 to 1977	1391	831	59.74
Hungary	1973 to 1977	1953	816	41.78
Czechoslovakia	1975	1250	1000	80.00
Newzealand	1973 to 1976	202	10	4.95
Saudi-Arabia	1971 to 1976	888	149	16.78
Kuwait	1973 to 1975	136	50	36.76
Iran	1972 to 1977	714	121	16.95

Madagascar, is the chief supplier for green pepper to France, Switzerland and other West European countries. India and Brazil supply relatively small quantities of green pepper in brine to the western world. However, the food processing industries of the UK and the USA are rapidly moving towards pepper oleoresins. Though India and other pepper producing countries are attempting to grab sizeable portion of the oleoresin market of the advanced countries they are subject to stiff competition from the well established flavour houses of those countries, namely the USA and the UK, with their superior technology and marketing skills. Again, the consumption pattern of the developed as well as developing countries is fast changing and the major producers and exporters of pepper are expected to be more vigilant in this regard.

#### **Price trend**

The price of pepper has been fluctuating very widely in the world market from year to year. As a result of this the production and trade in pepper are quite uncertain. The price of Indian pepper soared to unheard heights during early 50s due to an unprecedented demand and the crop was found to become exceedingly profitable for Indian producers and traders. In the year 1950-51, the export earnings from pepper was Rs. 20.4 crores which accounted for 3.4 percent of the total export earnings for the country from all the commodities during that year. The unit value of exported pepper for 1950-51 was Rs. 12,750 per tonne. This suddenly came down to Rs. 3,615 in the year 1955-56 affecting the export-earnings to a very great extent. The export value for Indian pepper for 1955-56 came down to Rs. 4.7 crores and its share to the total export earnings for the country also got reduced to 0.8 percent, although the export earnings from all commodities in that year remained almost at the 1950-51 level. While the total export earnings for the country is moving in an upward trend, the share of pepper as percentage to the total export value is declining. In 1978-79, it reached 0.5 percent. During the year 1977-78, the export value from Indian pepper reached a record high of Rs. 49 crores, largely for the highest unit value realisation (Rs. 19,600/tonne) coupled with a fairly good size of export (25 thousand tonnes). The unit value of Indian pepper is falling from 1978-79 due to stiff competition from other producers (Table 8 and 9).

**Table 8. India: unit value of exported pepper**

		<i>Rs./Tonne</i>
1950-51	..	12,750
1955-56	..	3,615
1960-61	..	5,000
1965-66	..	4,269
1970-71	..	8,444
1975-76	..	14,083
1976-77	..	19,100
1977-78	..	19,600
1978-79	..	18,667
1979-80	..	15,952

**Table 9. Export earnings from pepper in relation to all commodities  
(Rs. in crores)**

<i>Year</i>	<i>Export earnings from</i>		<i>Share of pepper (%)</i>
	<i>All commodities</i>	<i>Pepper</i>	
1950-51	600.64	20.4	3.4
1955-56	599.32	4.7	0.8
1960-61	660.22	8.5	1.3
1965-66	805.64	11.1	1.4
1970-71	1,535.16	15.2	1.0
1975-76	4,042.81	33.8	0.8
1976-77	5,173.23	38.2	0.7
1977-78	5,375.08	49.0	0.9
1978-79	5,725.00	28.0	0.5
1979-80	5,999.00	33.5	0.6

The index of f.o.b. with 1970-71 as base has been moving in an irregular fashion reflecting the uncertainty in the international trade. However, barring 1971-72 and 1972-73 the f.o.b. for Indian pepper is noticed to be higher than 1970-71 level. Since 1974-75, the f.o.b. has been more than doubled indicating a better prospect for the years to come (Table 10).

Table 10. The index of f.o.b.

<i>Indian Pepper</i>	<i>f. o. b.</i>	<i>Indice</i>
	<i>Rs./Qtl'</i>	<i>Base: 1970-71</i>
1968-69	514	60.6
1969-70	872	85.5
1970-71	849	100.0
1971-72	770	90.6
1972-73	717	84.4
1973-74	933	109.8
1974-75	1809	212.9
1975-76	1899	223.5
1976-77	1863	219.3
1977-78	1998	235.2
1978-79	1833	215.7

The annual wholesale prices of pepper in Calicut market move hand in hand with the f.o.b. for pepper. In other words, there exists a high and positive correlation between wholesale price and f.o.b. of pepper. The difference between wholesale price and f.o.b. comes within a range of Rs. 200 and Rs. 400 per quintal of pepper (Table 10 and 11).

**Table 11. Annual wholesale prices of pepper (nadan) in Calicut market**

<i>Year</i>	<i>Rs/Qtl</i>	<i>Index No.</i>
1970-71	638	100
1971-72	596	93
1972-73	530	83
1973-74	696	109
1974-75	1046	164
1975-76	1141	179
1976-77	1512	237
1977-78	1661	260
1978-79	1640	257
1979-80	1436	225

The average monthly wholesale prices of black pepper in Calicut and Cochin markets remain low during February to May. This is obviously due to post-harvest glut in the wholesale markets. However, due to its inherent nature of production and supply the percentage deviations from the annual mean are not high. The deviations are found to be  $\pm 6$  percent (Table 12 & 13).

The prices of pepper in London market reveal that Malabar black pepper fetches higher price as compared to Sarawak black pepper. In case of New York market both Malabar pepper and Lampong pepper realise more or less same prices (Table 14).

Pepper extractors generally favour Malabar and Lampong black pepper for their superior chemical compositions. Though Malabar pepper has an edge over all other pepper so far as quality is concerned, the importers are becoming more and more price conscious these days. While during 1979-80 the Indian black pepper price was quoted at about Rs. 15,500 per tonne, Indonesian and Malaysian black pepper were available for Rs. 12,000 to 13,500. Thus, the high price of Indian pepper has denied it substantial access to US, UK and other Western markets.

Table 12. Average monthly wholesale prices of pepper in Calicut and Cochin markets

Year	(Rs./Qtl.)												
	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Average
<b>Calicut Market—Wynadian Variety</b>													
1974-75	1025	1105	1137	1094	1095	1059	1047	1102	1094	1079	1015	1023	1073
75-76	1087	1106	1145	1161	1132	1175	1260	1300	1219	1132	1139	1230	1173
76-77	1364	1364	1516	1571	1545	1579	1689	1800	1620	1650	1606	1694	1579
77-78	1770	1781	1802	1803	1669	1745	1706	1710	1793	1800	1625	1610	1734
78-79	1787	1750	1783	1784	1739	1756	1767	1775	1725	1563	1453	1482	1699
79-80	1461	1461	1492	1629	1584	1575	1585	1561	1506	1463	1349	1325	1499
Average	1416	1428	1481	1507	1461	1481	1501	1541	1493	1472	1365	1394	1460
<b>Cochin Market—Garbled</b>													
1974-75	1039	1134	1159	1114	1123	1078	1068	1121	1099	1125	1080	1047	1099
75-76	1092	1090	1135	1165	1151	1180	1277	1315	1282	1195	1176	1236	1191
76-77	1379	1369	1490	1551	1548	1556	1591	1765	1607	1713	1706	1761	1586
77-78	1812	1822	1832	1831	1720	1740	1685	1679	1720	1714	1649	1625	1737
78-79	1749	1714	1765	1789	1732	1735	1774	1751	1655	1550	1529	1497	1687
79-80	1469	1466	1485	1573	1545	1545	1554	1527	1466	1460	1400	1356	1487
Average	1423	1432	1478	1504	1470	1472	1492	1526	1473	1460	1423	1454	1465

**Table 13. Deviations from annual means (1974-75 to 1979-80) of wholesale prices of pepper in Calicut and Cochin market**

Month	Calicut market		Cochin market	
	Deviation	% Deviation	Deviation	% Deviation
April	-44	-3.01	-42	-2.87
May	-32	-2.19	-33	-2.25
June	21	1.44	13	0.89
July	47	3.22	39	2.66
August	1	0.07	5	0.34
September	21	1.44	7	0.48
October	41	2.81	27	1.84
November	81	5.55	61	4.16
December	33	2.26	8	0.55
January	12	0.82	-5	-0.34
February	-95	-6.51	-42	-2.87
March	-66	-4.52	-11	-0.75

**Table 14. Average annual prices of pepper in London and New York markets (Rs/Qtl)**

	London market			New York market	
	Malabar	Sarawak pepper		Malabar	Lamong
	Black	Black	white	Black	Black
1970-71	968	673	776	946	946
71-72	923	650	858	832	784
72-73	738	590	865	878	809
73-74	1115	1043	1609	1069	1067
74-75	1542	1316	1692	1517	1516
75-76	1608	1283	1641	1713	1667
76-77	1999	1807	2107	1920	1880
77-78	2060	2021	2578	2167	2177
78-79	NA	1877	2952	1691	1740
79-80	NA	1817	2488	1732	1732

While Brazil, which started its pepper plantation only in 1920s, now exports pepper to some 40 countries in the world; India's destination is about one-half of that figure. In other words, India is dependent on fewer markets than her counterparts in pepper production.

India faces stiff competition in the international pepper trade as prices are ruling high in this country. The main factor associated with the high price of Indian pepper is its low productivity. The average productivity of pepper per hectare in the year 1978 for the major producing countries is as follows:

India	..	233 kg
Indonesia	..	641 kg
Malaysia	..	3455 kg
Brazil	..	3333 kg

Our productivity is very low mainly due to poor management and low yielding potential of Indian pepper gardens. Indian pepper plantations are also subject to serious attack of Phytophthora disease. Immediate attention should therefore, be focussed on rejuvenation of old plantations by replanting with high yielding and disease resistant varieties. Supervised credit systems should be followed simultaneously in order to facilitate the adoption of package of practices by the small and marginal producers of pepper.

India also needs reorganisation of pepper marketing. Distress sale of the produce by the growers should be avoided by appropriate institutional measures. Moreover, as the uncertainty of prices of pepper is great in India, schemes to ensure price stabilisation could be suitably look into. Since the prospect for world trade in white pepper is very bright and encouraging, serious efforts should be made to increase the production of white pepper in India. It may be mentioned here that white pepper fetches 30 to 50 percent higher price than black pepper. Similarly, green pepper in brine has a greater export potential. As a measure to reduce demand uncertainty the alternate uses of pepper in potential areas such as pharmaceutical and pesticidal industries need greater emphasis. For reasons of cost there is now an upward demand trend towards pepper oleoresin and oil in US and UK and it would

be most desirable for India to establish suitable link and collaboration with the domestic flavour houses as well as leading importers and distributors of those countries to obtain a sizeable market for the processed products.

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