

## **Present Status of Indian Spice Industry:**

### **Area and production:**

Some of the important spices of India are pepper, cardamom, chilli, ginger, turmeric, coriander, cumin, fennel, fenugreek, celery, saffron, tamarind and garlic. Other spices produced and exported in small quantities are aniseed, bishop's weed (ajawan), dill seed, poppy seed, *tejpat*, curry leaves, cinnamon, kokam and a few other culinary herbs. The tree spices like clove, nutmeg, mace, star-anise, allspice and some of the herbal spices like rosemary, thyme, marjoram, oregano, chive, parsley, sage, savory, tarragon and basil are produced in small quantities, which are mainly utilized in domestic purpose. Commercial cultivation has still not commenced in vanilla and paprika, but there is immense potential for their production and export. The area and production of important spices in India are given in Table 1.

Kerala retains the lead in black pepper production in the country, contributing 96% of area and 97% of production. The black pepper area in India increased from 0.8 lakh hectares in 1950-51 to 1.95 lakh hectares in 2009-10. Similarly, production increased from 20,500 tonnes to 51,200 tonnes from 2009-10 onwards, mainly due to the lucrative prices prevailing for black pepper in the domestic and international markets. The annual growth rates observed for area, production and productivity of black pepper for the last decade were 1.3, 3.3 and 2%, respectively. However, it is paradoxical to note that in spite of highly favourable climate, improved varieties and high-tech production technologies, the productivity of black pepper in the country is very low (300 kg/ha) compared to the other pepper producing countries (3 to 4 t/ha).

TABLE – 1 CROP-WISE AREA, PRODUCTION AND PRODUCTIVITY OF MAJOR SPICE CROPS IN INDIA DURING 2007-08, 2008-09 AND 2009-10 Area in 000 HA, Production 000 MT and Productivity = MT/HA

	2007-08			2008-09			2009-10		
	AREA	PRODUCTION	PDY.	AREA	PRODUCTION	PDY.	AREA	PRODUCTION	PDY.
Chillies	808.17	1294.15	1.6	779.05	1269.85	1.6	767.23	1202.94	1.6
Garlic	206.12	1068.50	5.2	166.21	831.10	5.0	164.86	833.97	5.1
Turmeric	174.51	794.19	4.6	181.09	821.16	4.5	180.96	792.98	4.4
Ginger	104.36	390.08	3.7	108.64	380.10	3.5	107.54	385.33	3.6
Coriander	384.21	229.95	0.6	396.85	242.13	0.6	360.00	236.72	0.7
Tamarind	55.04	182.08	3.3	54.63	177.68	3.3	57.99	185.46	3.2
Cumin	429.38	172.47	0.4	429.38	172.47	0.4	377.01	156.33	0.4
Fenugreek	55.20	55.48	1.0	68.29	76.58	1.1	43.25	57.44	1.3
Fennel	54.29	67.78	1.2	47.16	64.29	1.4	50.67	56.55	1.1
Pepper	197.33	47.01	0.2	238.71	47.40	0.2	195.92	51.02	0.3
Cardamom	81.93	13.65	0.2	91.99	15.45	0.2	90.20	15.72	0.2
Other seed spices	17.71	10.71	0.6	17.71	10.71	0.6	19.36	13.04	0.7
Ajwan	19.29	11.12	0.6	19.59	16.41	0.8	17.06	10.27	0.6
Nutmeg	15.26	11.37	0.7	15.27	11.37	0.7	15.05	8.00	0.5
Tejpat	2.45	5.29	2.2	2.44	4.98	2.0	3.24	7.08	2.2
Cinnamon	0.87	1.67	1.9	0.88	1.67	1.9	1.00	1.67	1.7
Clove	2.25	1.01	0.4	2.57	1.33	0.5	2.60	1.16	0.4
Others (2)	9.01	0.23	0.03	9.01	0.23	0.03	9.34	0.24	0.03
<b>Total</b>	<b>2617.36</b>	<b>4356.71</b>	<b>1.7</b>	<b>2629.44</b>	<b>4144.91</b>	<b>1.6</b>	<b>2463.29</b>	<b>4015.91</b>	<b>1.6</b>

Figure1

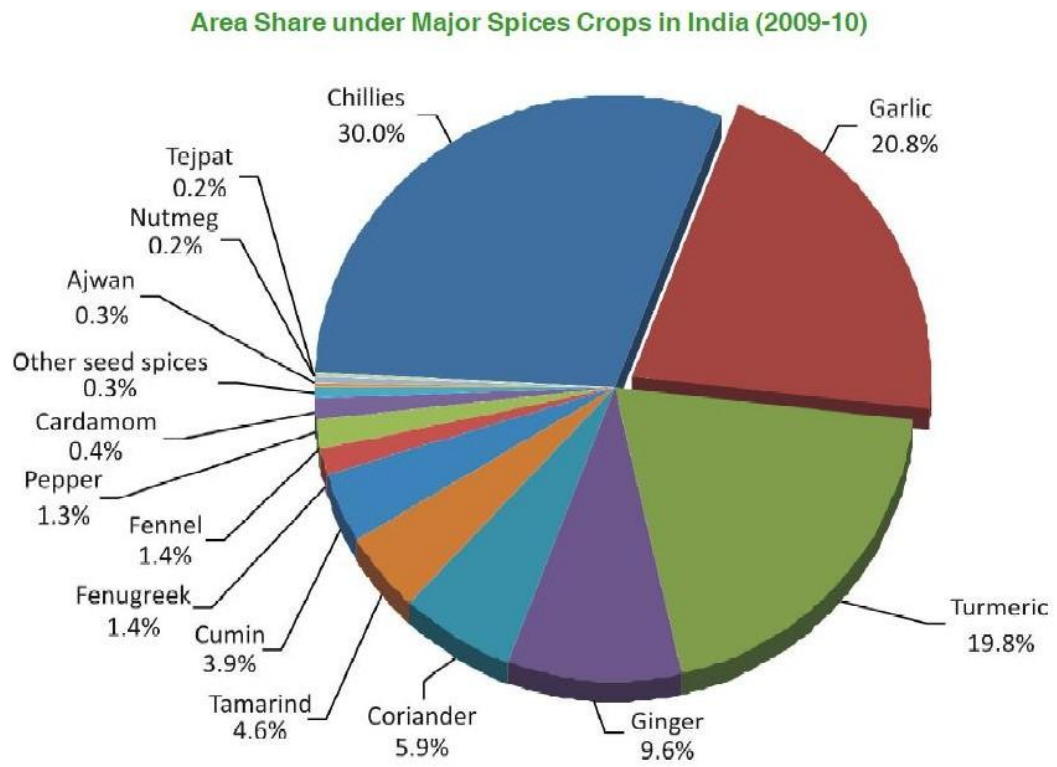


Table – 2, STATEWISE AREA, PRODUCTION 7 PRODUCTIVITY OF MAJOR SPICES IN INDIA Area in 000

HA, Production in 000 MT and Productivity = MT/HA

	2007-08			2008-09			2009-10		
	AREA	PRODUCTION	PDY.	AREA	PRODUCTION	PDY.	AREA	PRODUCTION	PDY.
Andhra Pradesh	318.52	1235.12	3.88	318.40	1225.29	3.85	312.52	1159.67	3.71
Rajasthan	579.50	534.03	0.92	567.40	471.76	0.83	489.65	437.18	0.89
Gujarat	320.05	518.15	1.62	306.99	426.61	1.39	266.31	400.85	1.51
Karnataka	229.04	325.61	1.42	233.48	341.65	1.46	217.66	303.24	1.39
Madhya Pradesh	192.17	275.77	1.44	197.01	250.41	1.27	197.11	236.27	1.20
Tamil Nadu	137.90	264.84	1.92	125.08	235.13	1.88	125.09	235.01	1.88
Orissa	147.00	199.20	1.36	146.72	198.22	1.35	146.72	198.22	1.35
West Bengal	94.40	185.80	1.97	95.87	188.40	1.97	95.87	188.40	1.97
Uttar Pradesh	59.11	194.90	3.30	56.48	170.06	3.01	54.83	163.02	2.97
Kerala	261.88	128.17	0.49	301.07	126.24	0.42	264.39	136.03	0.51
Maharashtra	114.00	97.00	0.85	113.64	96.57	0.85	113.64	96.57	0.85
Mizoram	9.00	38.30	4.26	22.67	80.62	3.56	22.67	80.63	3.56
Meghalaya	16.64	71.25	4.28	16.60	69.91	4.21	17.41	72.01	4.14
Punjab	5.15	23.69	4.60	5.15	23.69	4.60	17.53	66.68	3.80
Arunachal Pradesh	9.20	53.10	5.77	7.63	43.34	5.68	7.63	43.34	5.68
Sikkim	20.60	43.20	2.10	26.58	41.73	1.57	26.58	41.73	1.57
Nagaland	4.50	26.20	5.82	7.22	38.62	5.35	7.22	38.62	5.35
Haryana	6.75	24.84	3.68	5.15	24.52	4.76	5.15	24.52	4.76
Hima. Pradesh	7.60	23.60	3.11	4.44	18.62	4.19	4.44	18.62	4.19
Assam	28.63	18.76	0.66	27.37	18.55	0.68	27.37	18.55	0.68
Uttaranchal	9.26	24.42	2.64	1.94	13.06	6.73	1.94	13.05	6.72
Bihar	11.60	13.70	1.18	11.28	12.36	1.10	11.28	12.36	1.10
Tripura	4.20	13.70	3.26	4.50	10.28	2.28	3.96	12.10	3.06
Manipur	10.98	8.22	0.75	8.98	7.84	0.87	8.98	7.84	0.87
Chhattisgarh	12.86	10.51	0.82	11.56	7.18	0.62	11.56	7.18	0.62
A & N Islands	1.70	3.12	1.84	1.66	3.15	1.90	1.66	3.15	1.90
J& Kashmir	4.39	1.31	0.30	3.89	0.91	0.23	3.89	0.91	0.23
Goa	0.70	0.20	0.29	0.65	0.17	0.26	0.65	0.17	0.27
Pondicherry	0.02	0.00	0.00	0.02	0.03	1.23	0.02	0.03	1.23
<b>Total</b>	<b>2617.36</b>	<b>4356.71</b>	<b>1.66</b>	<b>2629.44</b>	<b>4144.91</b>	<b>1.58</b>	<b>2463.73</b>	<b>4015.93</b>	<b>1.63</b>

Table – 3, ALL INDIA - AREA PRODUCTION AND PRODUCTIVITY OF SPICES

Cardamom, the 'Queen of Spices', enjoys a premium preference in the international market and is relished for its distinct enriching properties. The data on area under cardamom cultivation in India reveal that there was not much fluctuation during the last four decades. The highest area of 1 lakh hectares was recorded during 1985-1986, which was reduced to 90,200 hectares in 2009-10. Cardamom production declined to as low as 3,500 tonnes in 1998-1999 and rose to 15,720 tonnes in 2009-10. The record price of cardamom was realised during 2009-10, which was as high as Rs.1,200/kg.

India is the foremost producer and exporter of chillies. Among the various spices produced in the country, per capita consumption is the highest for chillies. Trends in area, production and productivity show a marked increase from 1950-51 to 2009-10. During 2009-2010, the area under the crop was 7.67 lakh hectares with a production of 12.02 lakh tonnes. The price of chilli was Rs. 32.01/kg during 2000-01 which is slightly less than the average of the last three years (Rs. 45-60/kg).

Turmeric is a multipurpose crop valued for its colouring pigment, spicy flavour and medicinal properties. The area and production of turmeric in the country showed increasing trends during the last five decades. The highest area (1.80 lakh hectares), production (7.92 lakh tonnes) and productivity (4,400 kg) was recorded in 2009-10. The annual growth rate is encouraging in the last five years. The price of turmeric had plummeted to around Rs.26 kg during 2000-01. The lucrative price of Rs.16,000/quintal was recorded during 2009-10, which was considered to be highest price in the last decades.

Garlic is a major spice crop grown in Madhya Pradesh, Gujarat, Orissa and Rajasthan. The crop is grown over an area of 1.64 lakh hectares with a production of 8.33 lakh tonnes (2009-10). The price of garlic has rose to Rs. 80-100/kg during the current year from the average of Rs.40/kg for the last five years.

Ginger is one of the oldest known spices in the world and Indian ginger is highly valued in the global market because of its characteristic flavour. Being an annual crop, the area and production are highly influenced by price fluctuations. During 1970-71, the area under ginger was only 21,590 hectares which went up to 77,600 hectares in 1999-00 and 1,07,000 hectares in 2009-10. Ginger prices have remained almost constant at Rs.35-40/kg during the last five years.

Nutmeg, cinnamon, clove, *tejpat*, tamarind and *Garcinia* are the important tree spices grown in India. The area under these crops is registering an upward trend mainly because of the attractive prices, both from domestic and international markets. *Garcinia* is a tree which is gaining importance due to the presence of an antiobesity factor and pro-hydroxy citric acid

in the fruit rind. The area under nutmeg is 15,000 hectares with an annual production of 8,000 tonnes; while for clove, the area and production are 2,600 hectares and 1,160 tonnes, respectively. Cinnamon occupies an area of 1,000 hectares with a production of 1,000 tonnes during 2009-10.

The production of spices in the country has increased by 22 lakh tonnes during the IX Five Year Plan to 40.50 lakhs tones during 2009-10.

Among the spices grown in the country, seed spices account for 37% and 17% of the total area and production, respectively. Seed spices contribute to approximately 24% of export and 10% of the national income from spices. Out of the 17 seed spices produced in the country, coriander, cumin, fennel, fenugreek, dill seed, celery and poppy seeds are important. The area under these crops is around 8.55 lakhs hectares with an annual production of 5.01 lakh tonnes.

The production and productivity of these crops increased mainly as a result of improve varieties and sound crop management practices.

#### **Export:**

The changed economic scenario order in the context of globalisation and liberalisation of world trade in agriculture has opened up new vistas of growth. The spices sector is one of the key areas in which India has an inherent strength to dominate the global markets. As a result of the recent WTO regime, quality competitiveness has emerged as the prime mover of international food marketing. The present dispensation, of course, widens the access to global markets, but at the same time raises many challenges for survival of the spice industry.

In India, spice exports have been consistently moving up during the last decade. The Spices Board under the Ministry of Commerce has the mandate for the export of spices from the country. Spices account for about 16% in quantity and 19% in value of the total horticultural exports from India. India's share of the world spices trade is estimated as 40-50% by volume and 25% by value. During 1999-00, Indian spices exports rose creating an all-time record in terms of value. Thus, for the last couple of years, India has been enjoying a commanding position in the global market. However, in 2000-01 the scenario changed due to the fall in the export of black pepper. According to the estimates of the Spices Board, Indian spice export during 2010-11 was estimated at 5,25,750 tonnes valued at Rs. 6,840 crores as against 5,027,50 tonnes valued Rs.5,560-50 crores in the previous year (2009-10), showing increasing trend of export earnings.

Indian pepper exports, which account for a major part of the global share, seems to be facing a stiff threat from the new entrants, especially Vietnam. During 2010-11 India exports

18,850 tonnes with an value of Rs.383.18 crores which shows a slight declining trend compared to previous year (2009-10) 19,750 tonnes of pepper exported with an value of 313-92 crores. The way to meet the challenge is to develop a market-oriented production strategy, that is, to increase productivity, encourage value additions and adopt organic cultivation.

With better production and the resultant decline in the price, Indian cardamom (small) export was increased by 70% in quantity and 77% in value. Export of large cardamom also increased by 36% in quantity and 63% in value.

Better production in the competing countries like China and Pakistan and the low volume of import by Bangladesh has resulted in the decline in export of chillies during 2000-01. During 2010-11 India exports 2.4 lakh tones of chillies earning foreign exchange of Rs.153.55 crores.

The export of ginger and turmeric also registered a slight increasing trend in both quantity and value. Seed spices account for 20% of the total foreign exchange earnings contributing to a volume of 13% of the total spice export. Among seed spices, the export of cumin during 2010-11 was 32,500 tonnes with an value of 39.59 crores. The export of value-added products like curry powder, mint products, oils and oleoresins has been steadily increasing during the past years and during 2010-11 India exported 15,250 tonnes of curry powder, 1,750 tonnes of mint products, 7,600 tonnes of oils and oleoresins worth of Rs.262 crores. Thus the spice industry has play an important role in enhancing the Indian economy by contributing sizeble foreign exchange.

Table – 4 - Export of spices from India

ITEM-WISE EXPORT OF SPICES FROM INDIA (QTY. IN TONNES & VALUE IN Rs. LAKHS)												
ITEM	2005-06		2006-07		2007-08		2008-09		2009-10		2010-11 (E)	
	QTY	VALUE	QTY	VALUE	QTY	VALUE	QTY	VALUE	QTY	VALUE	QTY	VALUE
PEPPER	17,363	15094.81	28,726	30599.18	35,000	51950.00	25,250	41373.50	19,750	31392.50	18,850	38318.50
CARDAMOM(S)	863	2682.13	655	2348.10	500	2475.00	750	4726.50	1,975	16570.25	1,175	13216.25
CARDAMOM(L)	1,046	1154.65	1,504	1700.08	1,325	1500.00	1,875	2280.75	1,000	1788.60	775	4462.90
CHILLI	113,174	40300.51	149,022	80855.99	209,000	109750.00	188,000	108095.00	204,000	129172.80	240,000	153554.00
GINGER	9,411	4295.52	7,535	3883.05	6,700	2800.00	5,000	3482.50	5,500	4675.00	15,750	12131.25
TURMERIC	46,405	15286.02	51,712	16575.98	49,250	15700.00	52,500	24857.75	50,750	38123.00	49,250	70285.15
CORIANDER	23,756	6770.73	21,389	7959.49	26,000	11025.00	30,200	20378.75	47,250	22585.50	40,500	16663.25
CUMIN	12,879	9819.07	26,042	20224.12	28,000	29150.00	52,550	54400.00	49,750	54824.50	32,500	39597.75
CELERY	4,165	1500.64	4,294	1563.36	2,900	1325.00	3,650	2333.00	5,000	2662.50	3,750	2585.90
FENNEL	5,725	2782.33	5,305	3579.64	5,250	2850.00	8,675	4315.00	6,800	5623.60	7,250	6588.25
FENUGREEK	15,525	3402.87	8,616	2710.89	11,100	3300.00	20,750	7175.25	21,000	6972.00	18,500	6548.10
OTHER SEEDS (1)	12,670	3321.99	12,906	3678.58	8,850	3125.00	17,500	6498.50	15,500	5890.00	12,500	5558.05
GARLIC	34,688	4798.38	13,598	2713.43	675	400.00	760	350.25	10,750	3042.25	17,300	6977.30
TAMARIND	14,101	3078.20	17,882	4138.32	11,250	3100.00	11,500	4105.00	12,200	4705.50	17,500	8000.00
NUTMEG & MACE	1,530	3117.21	2,042	4264.27	1,300	2875.00	2,155	6074.75	3,275	9186.50	2,100	9776.80
VANILLA	72	1226.80	126	2062.67	200	1775.00	305	2670.00	200	2251.50	175	1874.50
OTHER SPICES (2)	7,033	4414.57	8,776	6136.53	7,750	5000.00	8,500	6459.00	8,000	7818.50	7,575	6140.80
CURRY POWDER	9,340	7838.03	9,373	8586.07	11,500	11100.00	13,250	16375.00	14,300	18918.50	15,250	21050.50
MINT PRODUCTS (3)	14,544	81320.66	17,642	120908.97	21,100	128050.00	20,500	142025.00	19,000	118972.00	17,450	169679.00
OILS & OLEORESINS	6,074	50557.34	6,546	56116.04	6,600	56300.00	6,850	72050.00	6,750	70875.00	7,600	91062.45
TOTAL	350,363	262762.45	393,692	380604.75	444,250	443550.00	470,520	530025.50	502,750	556050.00	525,750	684070.70
VALUE IN MILLION US \$		592.90		844.03		1101.80		1168.40		1173.75		1502.85
(1) INCLUDE BISHOPS WEED(AJWANSEED), DILL SEED, POPPY SEED, ANISEED, MUSTARD ETC.												
(2) INCLUDE ASAFOETIDA, CINNAMON, CASSIA, CAMBODGE, SAFFRON, SPICES (NES) ETC.												
(3) INCLUDE MENTHOL, MENTHOL CRYSTALS AND MINT OILS.												
SOURCE : DGCI&S, CALCUTTA/SHIPPING BILLS/EXPORTERS' RETURNS.												



### **Constraints faced in production:**

1. Lack of availability of quality planting materials as adequate infrastructure for large-scale production and distribution of quality planting materials of the released varieties.
2. Low productivity is due to existence of varieties of poor genetic potential with regard to yield and quality parameters.
3. Non-adoption of manuring and balanced fertilizers.
4. Non adoption of recommended cultural practices, as well as soil and water conservation measures.
5. Non adoption of integrated pest and disease management practices.
6. Inadequate extension network for effective transfer of technology.
7. High fluctuations in prices of the commodities and the absence of a support price.

### **Quality Assurance Mechanism:**

Even though India has been in the forefront for export of spices for several centuries, it was not until the mid-80s that the word 'quality' assumed importance. The imposition of quality standards by importing countries resulted in efforts for quality assurance. The steps were taken by the Spices Board to develop and inculcate good post-harvest management right from the stage of harvesting—particularly in seed spices. The right stage of harvest decides the quality, viz., size, colour, fibre content, volatile oil, chewing quality (fennel), splitting (coriander), etc. Clean drying, proper winnowing to remove dirt, chaff, plant parts, birds' droppings, rat excreta, hair, etc., followed by storage in hygienic and well-ventilated godowns ensures a good product. At the international level there is a stringent quality standard which has to be met by exporting countries. The specifications of American Spices Trade Association (ASTA) and the International Organisation for Standardisation (ISO) guidelines, with mutually agreed terms are followed. Japan and many other countries use the ASTA specifications; India, Malaysia, Spain, Indonesia, Sri Lanka and Hungary have their own quality standards for exporting spices. ASTA specifications are for unprocessed spices imported into the USA, and they regulate the cleanliness of these spices. ASTA specifications place limits on extraneous matter (insects, insect excrement, stones, stems, sticks, moulds, etc.) and set standards in sampling and testing procedures. Imported spices not meeting these specifications are reconditioned at the port of entry, while local spices need to be reconditioned (using fumigants) before they are processed for use in a product.

The US Federal Specifications establish quality standards for whole and ground spices. Specifications include total ash, acid-insoluble ash, volatile oil, moisture, colour and granulation, and these are standardized for the major spices. These specifications have

maxima or minima values that differ considerably between importing countries. Standards for defective spice (stalks, stems or other contaminants) are also established. The ISO has specifications for most spices, such as extraneous matter, moisture content, total ash, acid-insoluble ash and other chemical characteristics. Based on the ISO, Britain and Canada have established their own standards. Spices that are irradiated, reheated with ethylene oxide or contaminated with aflatoxin are prohibited under the Japanese Sanitation Law.

In India, quality standards are established for unprocessed and processed spices that particularly regulate moisture content, volatile oil, total ash, acid-insoluble ash, starch and extraneous matter. Grades are also established with specifications. Many spices, such as turmeric, black pepper, ginger and chilli peppers, have individual grade specifications that differentiate them from similar spices. Even curry powders are graded based on the amount of spices and salt they contain. Similar specifications are established for spices in many other countries.

Grinding and sterilizing procedures decrease the volatile oils in spices. Excessive heat volatilizes and dissipates the essential oils in ground spices, and high humidity tends to cake them. Exposure to light, humidity variations, air and certain metals can discolor many spices such as paprika, turmeric or the green leafy spices. Dry, ground chilli peppers turn from a natural green or red colour to an olive or dirty reddish-brown colour when exposed to light. Flavour and aroma losses, as well as insect and rodent infestation, occur when spices or spice extracts are stored in tightly closed containers in cool, dark, dry conditions below 4.4°C and 60% humidity. Some spices need storage at low temperatures of about 2-5°C to prevent mould infestation (capsicum peppers), colour deterioration (paprika) and to avoid rancidity (in high fixed oil seeds, such as sesame seeds). Colder temperatures also help preserve the volatile oil flavour and aroma, freshness and sanitary quality; refrigeration slows microbial growth. Whole spices tend to have better shelf life than ground spices. Ground spices for minimally processed foods such as salad dressings, condiments or 'sprinkle on' seasonings should be well cleaned and sterilised.

High levels of moisture in ground or whole spices indicate mould and microbial growth. During storage, insects breed on spices in varying degrees, depending upon storage conditions, where they are harvested, transportation contamination and the extent of cleaning. Filth levels include foreign materials such as insect fragments (moths, mites, beetles), small stones, metal fragments and glass pieces. Insects and mould growth can change the colour and, to some extent, the flavour of the spice.

Microbiological requirements for 'clean' spices include counts for total bacteria, yeast,

mould, coliforms and food pathogens such as *Escheria coil* and *Salmonella*. High microbial counts are caused by contamination during growing and post-harvest handling. Spore-forming bacteria, such as the *Bacillus* species or *Aerobacter aerogenes* found in the soil can be transferred to the spice during the drying process, particularly to 'under the ground' spices such as turmeric, ginger, galangal or garlic. The type and amount of moulds and bacteria on a spice depends upon the type of spice and the conditions under which it is harvested and dried. *Staphylococcus* and *Streptococcus* species of bacteria predominate, but pathogenic bacteria tend not to exist on spices. Spices that show strong antimicrobial properties tend to have low counts of microbes. Moulds, such as *Aspergillus*, that produce the toxin Aflatoxin and *Penicillium*, are found on certain species including red pepper, fenugreek and ginger, so there are specification limits for these toxins. Moulds tend to multiply during the drying process and storage. The control of insects and microbes is important in receiving quality spices. Spices need to be free of microbes so as to reduce the initial bacteria or mould content in processed foods. Spice extractives and sterilised spices tend to meet these objectives. Organic foods are becoming more popular, and for food to be labelled as organic, irradiation is not permitted. Spices that are not sterilised can be potent sources for microbial contamination and growth.

### **Marketing:**

The marketing of spices is mainly by middlemen and trade agencies. Only small extent Spice Board and Spice Trade promotion council perform the task. There is normally no government intervention in this trade, with regard to the marketing procedure or in the maintenance of a reasonable price for the farmers. Farmers dispose of their produce either locally to a village shop, cooperative society or even to a terminal market. The choice depends on a number of factors such as loyalty or financial obligations to a particular trader, the distance to the terminal market, the prevailing market price, etc. Marketing the produce to pre-harvest contractors is also in vogue in certain areas. In this case, the farmers receive an advance payment immediately after the acceptance of the offer. Collection centres operate within a short distance of the growing areas and also in almost every town. The merchants purchase from these centres when the price is quite attractive in the terminal markets. Commission agents receive the goods and sell them to the exporters through brokers and dealers. The exporters grade the finished product according to grade specifications and finally consign the packed material to the shipping agents. The important channels in the spices marketing are:

1. Producer – Village merchant /wholesaler – commission agent/exporter-Foreign importer

2. Producer-Village merchant/wholesaler-commission agent/wholesaler of consuming market-retailer-consumer.

Of these two, the more important one for black pepper is the former channel, as the major share of the produce is being exported and the internal price is solely dependent on foreign demand.

At present there is no regulated market for spices in Kerala. However, the co-operative marketing societies in Kerala handle these commodities, but they are also not functioning very well. The main reason for their failure is their poor financial resources that makes them incapable of providing short term/long term loans to the farmers in time. In other states like Karnataka, where regulated marketing is in vogue, the farmers do not get their legitimate share.

Normally, the farm price a grower gets is much lower than the retail sale price in the assembling or distributing markets. This wide range of disparities in the price received by the producers is mainly due to:

1. Expenditure incurred in marketing.
2. Margin of profit enjoyed by the pre harvest contractors/intermediaries.
3. Deduction on account of high moisture percentage.
4. Incidence of various taxes and other charges.
5. Transportation costs, etc.