

Spices Used in Ayurveda Medicine

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**Many varieties of spices are used in
Ayurveda Medicine as represented
in the following tables**

Table 1: Estimated Production, Exports & Farmgate Prices of Export Agricultural Crops 2009

Crop	Estimated Extent(ha)	Production(mt.)	Export Volume(mt.)**	Export Earning (Rs.mn.)**	Average Farm Gate Prices (Rs/Kg)
Cinnamon Quills	29,415	15,690	12048.3	8467.8	621.95
Cinnamon Bark Oil	-		16.8	133.4	24,000
Cinnamon Leaf Oil	-		107.2	143.0	966.42
Pepper	30,506	12,306	5155.3	1873.6	287.43
Pepper Oil	-		3.8	31.8	-
Clove	7,611	3032*	2315.2	1333.6	484.66
Clove Stems	-		600.1	45.9	41.75
Clove Oil	-		1.5	11.2	-
Cardamom	2,794	61	9.2	27.9	1,732.32
Cardamom Oil	-		0.2	14.5	-
Coffee	5,959	3,125	60.1	15.3	220.92
Cocoa	2,521	2,453**	1447.2	773.4	210.41
Nutmeg	926	1,552	1233.3	605.4	331.87
Mace	-		205.5	212.3	857.37
Nutmeg Oil	-		10.2	68.8	-
Betel	2,735	30,454	2581.5	685.4	493.75#
Areca nut	14,219	23,540	1393.3	151.6	108.2
Citronella	1,102	7	7.3	21.2	1,729.12
Vanila	-		0.02	0.7	-
Vanila Oil	-			1.5	-
Ginger	1,892	10,780	44.6	38.7	131.35
Turmeric	997	7,747	18.6	14.2	31.78
Total(with Gin. & Tur.)	100,676	105,262	27,259.22	14,671.20	
Total (without Gin. & Tur.)	97,787	86,735	27,196.02	14,618.30	

1000 leaves, * with stem, ** provisional

Source; DEA, Sri Lanka Customs, Dept of Census & Statistics

Table 2: Socio-Economic Conditions : Monthly Per Capita Consumption of Selected Spices and Condiments 2003/04

Source – Central Bank of Sri Lanka

Items	Unit	Western	Central	Southern	Nothern (a)	Eastern	North Western	North Central	Uva	Sabara- gamuwa	All Island
Chillies Dried	Grams	44	18	63	39	21	78	61	38	33	45
Chillies Green	Grams	116	111	138	178	202	172	154	120	131	138
Chilly Powder	Grams	100	113	77	174	155	76	101	106	98	103
Turmeric / Turmeric Powder	Grams	20	26	23	11	16	31	29	24	28	24
Curry Powder (Sarakku)	Grams	42	67	42	16	29	36	47	60	59	46
Curry Powder (Other)	Grams	24	11	10	8	9	16	26	10	5	15
Red Onions	Grams	288	144	278	643	260	217	144	145	255	247
Big Onions	Grams	691	504	763	98	322	496	488	505	426	552
Garlic	Grams	93	95	93	108	84	97	96	80	74	91
Salt	Grams	305	343	325	370	403	414	391	373	301	345
Pepper	Grams	28	15	30	8	10	23	29	21	15	22
Lime	Grams	88	56	57	94	76	101	88	72	66	77
Vinegar	M.Litre	2	0	0	0	0	1	0	0	0	1
Tamarind	Grams	21	11	2	166	64	29	15	11	5	24
Coriander Seeds	Grams	9	6	11	30	13	29	13	7	9	13
Cummin Seed (Suduru)	Grams	4	7	7	16	17	10	5	4	4	7
Fennel Seed (Maduru)	Grams	2	2	4	20	15	7	4	3	3	5
Mathe Seed (Ulupal)	Grams	13	11	10	51	29	20	17	10	13	16
Raw Ginger	Grams	11	2	1	5	30	9	3	1	1	7
Mustard	Grams	6	10	8	6	6	10	12	11	7	8
Cinnamon	Grams	4	2	4	0	2	4	4	2	4	3
Goraka	Grams	33	13	43	1	32	31	29	17	22	28
Cardamom	Grams	1	0	0	0	3	1	1	0	0	1
Cloves	Grams	1	0	0	0	0	1	1	0	0	1
Rampe / Sera / Karapincha	Grams	70	58	48	23	33	71	74	48	79	61
Other	Grams	0	1	0	0	2	0	0	1	1	1

Pepper (*Piper nigrum*)



- **Major Growing Areas**

In Sri Lanka pepper is mainly cultivated in Low and Mid country Wet and Intermediate agro-climatic zones. The total farming of pepper in Sri Lanka is about 29,378 ha, grown in Matale, Kandy, Kegalle, Badulla, Ratnapura, Monaragala and Kurunagala .

Medicinal value of Pepper

- A pungent spice, black pepper is also a heating spice.
- It promotes digestion and increases pitta. At the same time it stimulates vata and relieves kapha.

Major Chemicals and research findings of Pepper

- In addition to its culinary uses, pepper has important medicinal and preservative properties, and, more recently, major chemical piperine has been shown to have fundamental effects on *p*-glycoprotein and many enzyme systems, leading to biotransformative effects including chemoprevention, detoxification, and enhancement of the absorption and bioavailability of herbal and conventional drugs.
- Based on modern cell, animal, and human studies, piperine has been found to have immunomodulatory, anti-oxidant, anti-asthmatic, anti-carcinogenic, anti-inflammatory, anti-ulcer, and anti-amoebic properties.

Cinnamon (*Cinnamomum zeylanicum*)

Major Growing Areas

In Sri Lanka, Cinnamon seems to have originated in the central hills as seven wild species of cinnamon are found in Kandy, Matale, Belihull Oya, Haputale, Horton Planes, and the Sinharaja Forest Range. Presently cultivation is concentrated along the coastal belt from Negambo to Matara. It has also made inroads in Kalutara and Ratnapura.



Medicinal value

- Cinnamon is sweet, bitter, and pungent all at the same time.
- This is another heating spice.
- It relieves thirst and stimulates salivation.
- It also stimulates kapha, while decreasing vata and pitta.

Major Chemicals and research findings of Cinnamon

- Recent studies have shown many potentially beneficial health effects of cinnamon such as anti-inflammatory properties, anti-microbial activity, blood glucose control, reducing cardiovascular disease, boosting cognitive function, and reducing risk of colonic cancer
- The coumarin content in Ceylon cinnamon appears to be very small to cause health risks, whereas the coumarin level in *C. aromaticum* appears to be much higher and may pose health risks if consumed in higher quantity on a regular basis. In addition, coumarins also have potentially toxic effects on the liver.
- studies have explored the anti-diabetic effects of Cinnamon cassia extract *in vivo* and *in vitro*.

Nutmeg and Mace

Myristica fragrans

- **Major Growing Areas**

Nutmeg prefers cooler climates hence mid country areas of Sri Lanka are ideal for the growth of nutmeg.

Total extent of Nutmeg in Sri Lanka is 924 ha of which 80% of the growth is in the Kandy district.

Other major growing areas are Kegalle and Matale districts.



Medicinal value

- Both mace and nutmeg are used in aphrodisiac formulas with other herbs and spices to promote sexual desire and treat impotence.
- Mace is also mixed with other herbs and taken for digestive problems.
- It is also purportedly useful for low-grade fevers.

Major Chemicals and research findings of Nutmeg

- According to the researches, overall extracts of nutmeg showed a good antidiarrheal effect, with a significant sedative property. Also the extracts possessed only a weak analgesic effect, with no harmful effects on blood pressure and ECG.

Cloves (*Eugenia caryophyllus*)

Major Growing Areas

Clove is mainly grown in the Mid Country, a wet zone of Sri Lanka. Total extent of clove plantations is 7618 ha. Kandy, Kegalle and Matale districts are major growing areas.



Medicinal value

- Pungent is a popular taste as it is also seen in cloves.
- This is a heating spice that promotes digestion.
- Without question it improves the taste and flavor of many foods.
- It increases pitta, and decreases vata & kapha.

Major Chemicals and research findings of Clove

- Eugenol comprises 72-90% of the essential oil extracted from cloves, and is the compound most responsible for the cloves' aroma.
- Experimental research revealed that clove possesses analgesic, antiepileptic and antidepressant activities.

Ginger (*Zingiber officinale*)

Major Growing Areas

Ginger is grown all over the country but wet and intermediate zones are the major growing areas.

Total cultivated extent in 2007 was 6000 ha. Kurunagala, Kandy, Gampaha, Colombo and Kegalle are the main growing areas.

In the western province, ginger is largely grown as an inter crop with coconut, and as a home garden crop.



Medicinal value

- Ginger powder is a pungent and heating spice.
- It is sweet light, dry, and rough.
- It promotes good digestion, and is thought to be a detoxifying agent.
- It increases pitta if taken in excess. It relieves vata and kapha.

Major Chemicals and research findings of Ginger

- The odor of ginger depends mainly on its volatile oil, the yield of which varies from 1% to 3%.
- Over 50 components of the oil have been characterized and these are mainly monoterpenoids [β -phellandrene, (+)-camphene, cineole, geraniol, curcumene, citral, terpineol, borneol] and sesquiterpenoids [α -zingiberene, β -sesquiphellandrene, β -bisabolene, (E-E)- α -farnesene, arcurcumene, zingiberol].
- Research suggest that ginger could be used as an cholesterol-lowering, anti diabetic, antithrombotic, anti-inflammatory and anti bacterial agent.

Cardamom

(Elettaria cardamomum)

- **Major Growing Areas**

Can be found in the central hill country of Sri Lanka where the elevation is 600 m amsl.

Kandy, Matale, Kegalle, Nuwara Eliya, Rathnapura, and a part of Galle, are the major growing districts.



Medicinal value

- Cardamom is sweet and pungent.
- Like many other spices it performs a heating function.
- It is said to promote digestion.
- It is good for the heart, and has the added benefit of improving the smell of breath.
- It may stimulate Pitta if too much is taken. It relieves vata and kapha.

Major Chemicals and research findings of Cardamom

- The seeds contained in the dried fruits (capsules) and possessing a characteristic pleasant aroma, are the cardamom of commerce.
- The main chemical components of cardamom oil are α -pinene, β -pinene, sabinene, myrcene, α -phellandrene, limonene, 1,8-cineole, γ -terpinene, p -cymene, terpinolene, linalool, linalyl acetate, terpinen-4-oil, α -terpineol, α -terpineol acetate, citronellol, nerol, geraniol, methyl eugenol and trans-nerolidol.
- Research found that Cardamom effectively reduces blood pressure, enhances fibrinolysis and improves antioxidant status in human.

Turmeric (*Curcuma domestica*)

- **Major Growing Areas**

Turmeric is grown in wet and intermediate zones of Sri Lanka as a mono crop, and as an inter crop with coconut plantations.

Major growing districts are Kurunagala, Gampaha, Kalutara, Kandy, and Matale.



Medicinal Value

- Turmeric is bitter, pungent, and astringent.
- It is a heating spice thought to help in diabetes.
- It promotes good digestion.
- Turmeric increases Vata and Pitta if too much is consumed and relieves Kapha.

Major Chemicals and research findings of Turmeric

- Curcumin is the main health beneficial active agent in Turmeric.
- Curcumin is a potent antioxidant and anti-inflammatory, and therefore can help fight a number of chronic health conditions from heart disease , diabetes to dementia and act as potent anti-cancer agent.
- Curcumin also been proven useful at relieving arthritis and improving the health of the liver and gall bladder.

Lemongrass

(*Cymbopogon citratus* (DC.) Stapf,
Cymbogogon flexuosus (Nees ex Steud.) Wats

Major Growing Areas

Total extent of citronella is 1065 ha.

Cultivations have largely been confined to Hambantota and Rathnapura districts.



Major Chemicals and research findings of Lemongrass

- Limonene and p-menthane derivatives are major chemicals in lemongrass.
- Research revealed that it has antibacterial activities.

Gambooge (*Garcinia gummi-gutta*)

- **Goraka** grown in wet and intermediate zones in gardens throughout Sri Lanka



Major Chemicals and research findings of Gambooge

- The fruits of the plant are commercially important for its valuable chemical components like hydroxyl citric acid, tartaric acid, camogin, euxanthone, gucinol, reducing sugars and fats.
- Fruits having considerable capacity of antioxidants.

Red Chilies



- **Major Growing Area**
- Red Chilies are mainly grown in dry zones in Sri Lanka

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