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No. 2
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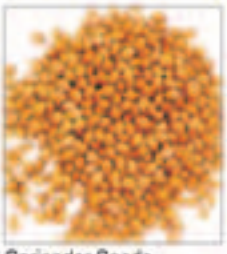
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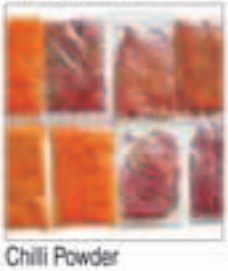
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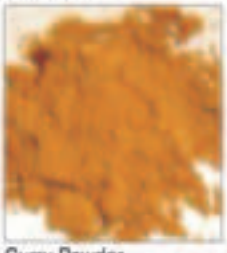
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Email : makarand.mandke@se-so-tec.com, info.india@se-so-tec.com

Headquarters and production
Regener Strasse, 130 D-94513 Schoenberg, Germany
Tel. +49 8554 308-0 Fax +49 8554 2606
info@se-so-tec.com, www.se-so-tec.com

SPICES BOARD

Ministry of Commerce & Industry
Government of India
Sugandha Bhavan
P.B. No. 2277
Palarivattom P.O.
Cochin - 682 025

Chairman : **Dr. A. Jayathilak IAS**
Chief Editor : **Dr. P. S. Sreekantan Thampi**
Deputy Director (Publicity)
Editor : **S. Palanichamy**
Publisher : **P.M. Suresh Kumar**
Secretary & Director (Mktg) i/c

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Tel : 0484-2333610-616, 2347965
Fax : 0484-2331429-2334429
E-mail : spicesboard@vsnl.com
Website : www.indianspices.com

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SPICE INDIA

A JOURNAL DEVOTED
TO THE PROMOTION OF
INDIAN SPICE INDUSTRY

IN FEBRUARY ISSUE

WORLD SPICE CONGRESS INITIATES MAJOR ACTIONS TO EMPOWER SPICE FARMERS

The Indian Spice Industry will take up a quality capacity building exercise jointly with USFDA [United States Food Drug Administration] enabling every segment of the spice industry to face the challenges of international trade and commerce in spices. This will start right from the spices growers across the Country. This was declared by the Chairman of the Spices Board India, Dr A. Jayathilak IAS at the concluding session of the 11th World Spice Congress in Pune on 11th February

A view of delegates attending the business sessions

Mr.Bruce Ross

Mr.Gerald Herrmann

Mr.Toru Asami

Ms.Ingrid Fiordaliso

Mr.Sarada De Silva

Ms.Margriet Glazenborg

2012. The decision of the Spices Board to constitute Spices Producer Companies is a pointer to this. The World Spice Congress, the 11th in the series was held in Pune during 9 to 11th February and witnessed record participation of over 200 international delegates from 40 countries besides over 300 Indian delegates. The Congress and the exhibitions with 26 partcipants was declared opened by Dr A. Jayathilak, Chairman of the Spices Board India. Mr Geemon Korah, Chairman of the All India Spices Exporters Forum welcomed the delegates and Dr P.S.Sreekantan Thampi, Organising Secretary of the World Spice Congress proposed a vote of thanks.

Mr Bruce Ross, India Country Director of the USFDA, who was present at the Congress had suggested that initiatives on such a massive scale will be supported by USFDA since such initiatives on aquaculture in Bangladesh has yielded promising results. The proposed programme on spices in India could take shape very easily as the Spices Board is already on the job, Dr Jayathilak said and promised wholehearted support to the offer since the farmer will stand benefit ultimately. The Spices Board India has been undertaking programmes throughout the country especially in the States of Gujarat, Rajasthan, Madhya Pradesh, and Andhra Pradesh to effectively link the spices farmers of these states to the supply chain linked to exports. These efforts had so far helped in bringing into the lime light the farmers especially of seed spices like cumin, fennel, fenugreek, dill, coriander, mustard, chillies and turmeric the cause of farmers of cardamom, pepper, nutmeg also. The Board has proposed plans for programmes in the next Plan period to focus attention on export oriented production of ten spices like nutmeg, chillies, mint, cumin, fennel, coriander, fenugreek, black pepper, turmeric, ginger. Cardamom is already a focus commodity.

The farmers in the remote growing villages will become part of the international link and this will be an effective and great link in the supply chain ensuring traceability. The Spices Board is already on the job through the initiatives called "Sugandha Sangamams" in the country where the focus is on to bring into the fold the farmers, traders, processors, exporters, scientists, officials of the Departments of Agriculture and Horticulture besides the agriculture and horticulture universities of the States besides the Spices Board under one umbrella with the single focussed objective of promoting exports of quality spices and spices exporters which will guarantee quality in every aspect meeting the various standards of different countries of the world.

Mr.Ramkumar Menon
Chairman,
Business Committee

Mr.Bharat Maskai

Mr.Milind Chaudhari

Ms.Vuong Ngoc Bich

Dr.Ramesh V Bhat

Ms.Yuliani Widjaja

A business session in progress

The delegates visiting the exhibition stalls

COVER PHOTO CAPTIONS

Top:
Dr.A.Jayathilak IAS, Chairman, Spices Board India inaugurating the 11th World Spice Congress exhibition in Pune. Next to him are Mr.Geemon Korah, Chairman of the All India Spices Exporters Forum and Mr.M.L.Parekh, Chairman of the World Spice Congress Exhibition Committee.

Middle:
View of audience attending the Congress.

Bottom:
Mr.Geemon Korah, Chairman, AISEF, delivering the welcome address during the inauguration of the Congress & few scenes from the cultural programme.

Other countries are also likely to follow this pattern as the supplies of spices are of utmost importance.

The Congress paved the way of series of interactions with international quality regulators from countries like the US , European Union , Canada and Japan . The Congress culminated in taking multifarious decisions which were also subscribed by delegates from other spice producing countries. The different buying countries are imposing different standards for quality regulations which often results in hampering smooth trade and commerce. It was decided that efforts are to be taken up for harmonising standards, residue limits and regulatory issues.

Almost all the spices producing countries are facing issues of low productivity due to poor quality of planting and seed materials and shortage of labour. The need for research and effective schemes for soil management were also called for. One of the highlights was the need to take up on an urgent basis formation of spices growers' societies that could result in empowering farmers for better practices and direct involvement in the supply demand chain.

Dr.Jayathilak assured that the recommendations of the Congress will be taken up very seriously and action plan will start in the next two months. The link from the farmer to the Government, regulatory agencies and the industry need to be strengthened for knowledge dissemination and better productivity.

All the quality labs of the Spices Board will soon be accredited for the very latest certifications for international acceptability. The Spices Board will also set up task

forces for various spices to address all the issues of quality, linkages and sourcing, Dr Jayathilak said.

Mr Geemon Korah, Chairman of the All India Spices Exporters Forum has promised support of the exporters for all the initiatives and recommendations of the Congress which was attended by representatives of farmers of various spices from different parts of the country, besides traders, exporters and officials of Agriculture departments of States and Spices Board. The Congress had international representations of over 200 delegates from 40 countries besides over 300 Indian delegates.

The 12th World Spice Congress will be held in February 2014 in Kerala.

The text of the inaugural address by Dr A Jayathilak IAS, Chairman, Spices Board, India at the World Spice Congress in Pune on 9th February, 2012.

"WORLD SPICE CONGRESS FOR FOOD SECURITY & SUSTAINABILITY"

Distinguished delegates, ladies and gentlemen...

Once again we connect together all the interests connected with spices under one umbrella with the World Spice Congress 2012. Pune, the city of communication and culture, the city with a glorious past and a vibrant present is witnessing another important milestone in the spices industry.

Variety, it is said, is the spice of life. Well, here we have spices adding variety, with the Spice Congress drawing participants from all over the globe.I am sure you are all proud to be a part of it. We are happy to see the increasing participation in the Congress ever since its inception in 1989. And this time we witness a record in participation - around 200 foreign delegates and more than 300 delegates from India.The theme chosen for this year's event is particularly significant for its contemporaneity and universality-. "Sustainability and Food Safety - Global Initiatives"

George Bernard Shaw famously remarked that there is no love sincerer than the love of food. With the gourmet of spices that Indian cuisine is, we are hardly likely to face any recession. As you all know, spices having been a part of our culture from the earliest times, they were the commodities that lured traders from all around the world to India. Even today, India continues to be the largest producer, exporter and consumer of spices. Contributing about 50 percent of the world's requirement of spices, we export only 10 percent of our total production. The estimated world trade in spices is 1.1 million tonnes valued at US $ 3475 million, out of which India has a significant share of 48 percent in quantity and 43 percent in value.

What makes Indian export exclusive is that we send overseas the surplus production. A large part is consumed domestically since spices are a part of the culture and tradition of India. A close analysis shows that it is not a simple task for us to do, especially in our land of diversities. Diversity often goes synonymous with our geographical peculiarities as well as climatic conditions. A land blessed by nature, India has different climates in different regions ranging from tropical to temperate and it is the same with the soil too. In fact these factors make Indian spices unique in the international market. Out of 109 spices listed by the International Standards Organization, nearly 75 are grown in India. Spice farming in India often has to contend with a not-so conducive weather and varying soil conditions. In spite of these constraints, however, we do manage very well to maintain the international quality standards.

The global demand for spices is spurring up but with it several challenges are popping up as well, mainly the issues of food safety, traceability and sustainability. These buzzing words in the global market are matters which need to be looked into with all seriousness. These are not just issues but threats that can even affect the very existence of the industry.

Well, some of the food safety problems can be managed with modern processing technology but contaminants, pesticide residues and toxins remain hard nuts to be cracked. Availability constraint of the products that are in demand in the global market is also an issue that needs immediate attention. To mitigate theses issues, we are making all possible efforts like promoting organic production, implementation of Good Agriculture Practices (GAP), improved application of post harvest practices, regular training on GAP and establishment of bio-agent production units.

Major destinations of Indian spices like Europe are raising their food safety standards and now insist on rigorous inspection for quality and safety. Hence production conforming to internationally accepted quality and safety requirements, increase in export in spite of the infrastructural limitations, enhancement of the production of value added products according to the recent trends in the

market are all important. Above all there is a need to have a holistic and uniform standard of quality determination and to make the products from India customer specific. The Spices Board is planning to hold discussions with the European Commission on the issue of contaminants in Indian exports and to standardize testing practices across the industry.

Focusing these essential requisites, our ultimate objective is to achieve the export target of US $ 3 billion by 2017. For the 12th Five Year Plan we have proposed to focus on the promotion of ten spices - pepper, cardamom, red chilly, paprika chilly, AFT turmeric, Cochin ginger, Mint, Cumin, Garlic and Nutmeg and also to help growers and exporters in achieving quality parameters required by the world market. We envisage importing high-yielding pepper strains from Madagascar which have the potential to increase the output by 20 times.

The Spices Board has been spearheading activities for excellence of Indian spices beginning right from the grass root level. Encouraging cultivation of spices in non-traditional areas, improving harvest and post harvest practices, establishment of spice parks, networking of Spices quality evaluation laboratories, constant interfaces with farmers like the one named Sugandha Sangamam organized for Chillies in Guntur, Andhra Pradesh, organizing Spices Producing Companies etc are some of the activities the Board is focusing on. The Spice Producer companies will be non profit making institutions aimed at imparting technical and scientific know how to the members, particularly small scale and marginal growers for bettering the commodity they want to merchandise. Moreover, we envisage achieving inclusive development by giving importance to every segment in the spices plantation sector as well.

This biennial World Spice Congress looks forward to promoting production and business setting up a momentum for action to raise food security and maintain sustainability. Setting up a forum for discussion on crops, markets and recent trends in this industry, the event will try to explore feasible methods and ideas that can be implemented in the most practical manner. In the coming days of the congress we are to hear from eminent speakers and experts in the field who will analyze, comprehend and recommend steps and measures to arrive at pragmatic solutions to the pressing problems faced by this sector.

This would hopefully have long lasting effects on the spices industry and trade. The exhibition that is being conducted along with this will definitely offer a scenario to the prospective clients to know more about the capacities and capabilities of the spice companies thereby building up a healthy and responsible future for the spice industry.

Moreover it is an opportunity for the global community to come together and strengthen relationships with each other. The yester years, since 1989, have welcomed hundreds of delegates from across the globe and it has been the gateway to weave a beautiful thread of friendship and co-operation. I am sure that all of you are proud to be a part of the Congress.

We were to have with us today a legendary figure - the man behind the green revolution in India- Dr. M S Swaminathan. He could not make up as he was indisposed.

"When Ferdinand Magellan's voyage around the world ended in 1522 with the return of just one of the original five ships, there was still room for rejoicing in the Spanish courts that had commissioned the maritime venture, for the wealth from that vessel- the Victoria - far exceeded the cost of the entire expedition. Juan Sebastian Elcano, the master of this ship was consequently decorated by the Spanish King with a coat of arms featuring, apart from a globe with the motto "You went around me first', the images of that which his ship had carried back to such tumultuous welcome: cloves, cinnamon and nutmeg. It didn't take long for ships bearing the insignia of various other kingdoms to follow suit and travel, to borrow the richness of Shakespeare's language, to "the spiced Indian air" and return as "argosies, pageants of the sea", full of silks to enrobe the roaring waters and spices plenty enough to be scattered on the stream. It is to the same spiced Indian air that we welcome the delegates of the 12th World Spice Congress, and the sumptuousness and opulence of the Renaissance world so lavishly portrayed by Shakespeare is what, it is hoped, this event will facilitate you to take back in the form of reminiscences, sharing of knowledge and enhanced channels of trade and commerce.

"To morrow to fresh Woods, and Pastures new".. let's hope for a good future..

Have a great time!

ENCOUNTER WITH A YOUNG MAIDEN ©

JUNGFRAU

Hugh & Colleen Gantzer

The Jungfrau jock keeping a weather eye on the Alps

That's what *jfr* means: 'The Young Maiden'.

She stands, 4,158 meters high, like an austere nun in a starched white wimple, gazing down at the beautiful lake-lands of Interlaken. We've fallen in love with Interlaken. We had stepped out of our soundless, efficient, train the day before yesterday; checked into our hotel; and gone for a walk in the soft dusk of a Swiss evening. There was a mountain at the end of every street; quaint old houses superbly maintained; masses of flowers in front of shops and in roundabouts and restaurants; a grand hotel in the late 19th century manner called the Victoria Jungfrau; a wide, green, park with pollard trees, the spires of churches and mansions rising against the snow-dusted Alps; and the rushing Aare river with its incredibly blue water. It was so startlingly blue that we thought it had been polluted!

Interlaken, literally 'between the lakes', lies between the glacial lakes Brienz to the east and Thun to the west. When the glaciers retreated, about two million years ago, they left a vast moraine, deposits of alluvial soil and rock, between Brienz and Thun. Interlaken grew on this fertile, glacial, plain: 570 meters high and on the northern feet of the high ranges. Though it was first settled by the tribes of the legendary Asterix, the Celts, Interlaken owes its urban development to the Augustian priests and nuns who opened a monastery

At Kleine Scheidegg station, 2,061 meters above sea level, our train paused, as if to take a deep breath. And then we plunged into one of the greatest engineering feats of this mountain railway: a 7.2 meter tunnel cut into the base of the Eiger, the Monch and on to the Jungfraujoch.

and a convent here in the 12th and 13th centuries.

This morning we strode out through the misting, feather-rain, to Interlaken Ost station where we boarded a Swissrail train. It was, as always, the epitome of efficiency. We left Swissrail at a small station and crossed over to a smaller train of the private Jungfrau Rail, the Jungfraubahnen. We sat in our own, reserved, section, while blonde and effusice Americans and disciplined hordes of Japanese streamed into the other section, filling the compartment with smiling, twanging, camera-buzzing chatter. Both Interlaken and Jungfrau are very popular with international tourists.

Americans and Japanese in the Jungfraubahn

A mountain-viewing halt in a 7.2 km tunnel

The little train started. A slight [illegible] intruded into the usual [illegible] as the cog wheels engaged the ratchet track. We climbed out of the drizzle-softened green valleys and into the mountains. Glittering mossy slopes gave way to wooded stretches with patches of snow, then to great stands of conifer forests crisp with the icing sugar of frost; merging into dark forests in which even the barest branches were heavy with rugs of snow and long, crystal, icicles hung from the eaves of

Skiers dot the soft, snowy, slopes of switzerland

stations. We were now in a frozen land: everything around us shimmered in white. Whenever we had to change trains, we picked our way across the tracks very, very, carefully: snow crushed under our feet, ice cracked and we stepped, very gingerly, around slippery, glassy, patches of black-ice. A young Japanese woman, in high heels, lost her balance and would have had a nasty fall if her companions had not grabbed her, filling the chill air with a bright burst of giggles. Groups of skiers now began to join us, clomping around in their heavy boots, tracking snow out of the platform and into the compartment.

We got under way again. Now, occasionally, the steeper white slopes above us were scarred with black barriers, one above the other, to hold back snow-slides.

At Kleine Scheidegg station, 2,061 meters above sea level, our train paused, as if to take a deep breath. And then we plunged into one of the greatest engineering feats of this mountain railway: a 7.2 meter tunnel cut into the base of the Eiger, the Monch and on to the Jungfraujoch. It was a long ride through the rock of the mountains but, wisely, they had scooped out stations in between where all passengers disembarked for comfort stops and glimpses of the high world outside through toughened glass windows set into the rock.

Finally, at the end of the tunnel, we emerged into the brightly lit Jungfraujoch complex: and what a complex! Here, on multiple levels at 3,454 meters, accessed by stairs and lifts, is a restaurant, a conference hall, a museum, a small cinema, places for picnickers to eat their food, a post office , souvenir shops and ate a memorable gourmet lunch in the most elevated restaurant in Europe. When we enquired about Indian dishes we were told that the speciality chef had gone on leave so, possibly, kebabs and dosas will appear on the menu later.

We also walked through an illuminated tunnel carved through the ice. In fact, it has been bored through a glacier: which is a frozen river moving very, very, slowly. In grottoes and platforms, the ice has been sculpted into bizarre shapes whose positions change slightly, every day, as the glacier flows!

And then we boarded a lift to [illegible] us through the rock to the steel and concrete Sphinx Observatory. It is anchored in the permafrost of the mountain, protected from lightning strikes by a Farady Cage of sheet metal and wire netting. This is the scientific heart of the Jungfraujoch. Here, environmentalists, meteorologists, astronomers, physicists and geologists observe the heavens, keeping watch on solar and cosmic radiation, the slow movement of the glaciers and of the earth beneath them, the changing patterns of the weather and pollution. Here, surely, was the 21st century version of those mystical Masters who keep a watch over mankind!

Evening crept upon us too soon and it was time for all visitors to leave the stimulating Top of Europe.

Reluctantly, we boarded our train again; [illegible] through the great tunnel and, at Kleine Scheidegg, took another route back. Snow ploughs growled; a pack of huskies pulled a sledge, yapping happily; skiers clomped around the snow banks of stations, sailed up on lifts, sped down quilted white slopes. Conifers appeared, forests, woodlands, farms, chalets, the broad blue spread of lakes; then the picture postcard views of our beautiful Interlaken. We disembarked and looked up.

There, above it all, towered the white eminence of vibrant Jungfrau.

☆

AJOWAIN
A UNDER-UTILIZED SEED SPICE

Ajowain flowers

Anoop A. Shetty[1], Tanuja Buckseth[1] & Naresh V.S.[2]
[1]Department of Vegetable Science,
G.B. Pant University of Agriculture
and Technology, Pantnagar- 263145

[2]Assistant Director,
Spices Board of India, Cochin- 682025
E-mail: anoopshettyforyou@gmail.com

Ajowain (*Trachyspermum ammi* L.), a member of Apiaceae family, is an erect, glabrous, or minutely pubescent, branched, up to 90 cm tall, aromatic annual herbaceous plant, bearing grayish brown fruits having importance both as a spice and medicine. Ajowain also called as Bishop's weed or carum seed. Flowers are in terminal or seemingly lateral pedunculate, compound umbels, while inflorescence is terminal and compound. Flowers are small,complete, bisexual and pentamerous. Flowers are also protandrous and hence cross pollinated by honeybees. Being short-long day plant, the crop is grown in cool season from October to March both under dry and irrigated conditions. Flowering takes place in about two months after sowing and the field looks like an ornamental flower bed with umbelliferous clusters. Fruits are small, ovoid, muricate and aromatic. Cremocarps are two to three mm long with grayish brown compressed mericarps with distinct ridges and tubercular surface and one seeded. Seeds of ajowain look like cumin or caraway seeds.

ORIGIN AND DISTRIBUTION

Ajowain probably originated in Egypt and the eastern Mediterranean area. Most of the species of ajowain are mostly grown in temperate regions of the world except for a few species, which are cultivated in

Ajowain probably originated in Egypt and the eastern Mediterranean area. Most of the species of ajowain are mostly grown in temperate regions of the world except for a few species, which are cultivated in tropics, southwest Asia especially India and North Africa.

tropics, southwest Asia especially India and North Africa. Ajowain is mainly grown in Iraq, Iran, Egypt, Afghanistan and Pakistan. In India, ajowain is grown largely in the states of Madhya Pradesh, Andhra Pradesh, Gujarat, Maharashtra, Uttar Pradesh, Rajasthan, Bihar and West Bengal. However, Rajasthan is the largest producer of ajowain followed by Gujarat.

Although it is largely grown in plains, yet it also comes up well in the Deccan plateau. A large quantity of ajowain is consumed in India and this entire demand is met by indigenous production. Several commercial types of ajowain are known of which ajowain large, ajowain small and nadiad ajowain are the most common types grown in one or other part of the country. Some of the best quality small seeded varieties are usually produced in India, particularly in Ujjain and Gwalior in Madhya Pradesh.

CULTIVATION

Cool weather and cloudiness for about a week after sowing and occasional drizzling during active growth are conducive to successful cultivation of ajowain. It can be grown in all kinds of soils but does well in loams or clay loams rich in humus and well drained. Cool and dry climate favours good growth but the crop is affected by frost. High atmospheric humidity invites diseases and insects hence avoidance of high humidity especially after flowering is beneficial.

Most of the varieties under cultivation are local types and not many more improved variaties have been developed. Pant Ruchika released by GBPUA&T, Pantnagar can yield up to 7.5 quintals per hectare. Other improved varieties include Gujrat Ajowain-1, Lam Selection-I and Lam Selection-II. Lam Selection-I is a early variety which matures in 135 days.

Soil is reduced to fine tilth and prepared for sowing. Sowing is done in October – November in most parts of India, but it is also sown in May-June in some regions. Seeds are usually line sown at a spacing of 45cm X 30cm, but in some areas a spacing of 30cm X 20cm is also followed. About three to four kg of seed is required for sowing in one hectare area. Germination is completed in 15 days depending upon the prevailing temperature. Light irrigation during sowing is beneficial. At least two weedings are required and thinning is carried out at the time of first weeding. Irrigations may be given at 20-30 days intervals depending on the prevailing weather conditions and soil moisture content. But in no case field should be kept deficient of moisture after flowering.

The crop matures in around 160-180 days after sowing. It is harvested when flower heads turn brown. Plants are cut using sickle or pulled out with roots and allowed to dry completely. After drying fruits are separated by careful rubbing followed by winnowing. Average yield of ajowain ranges from six to eight quintals per hectare.

USES OF AJOWAIN

The ajowain seeds like other spices are not viewed nutritionally important. They are more known as adjuncts used in small quantities for

Ajowain plants

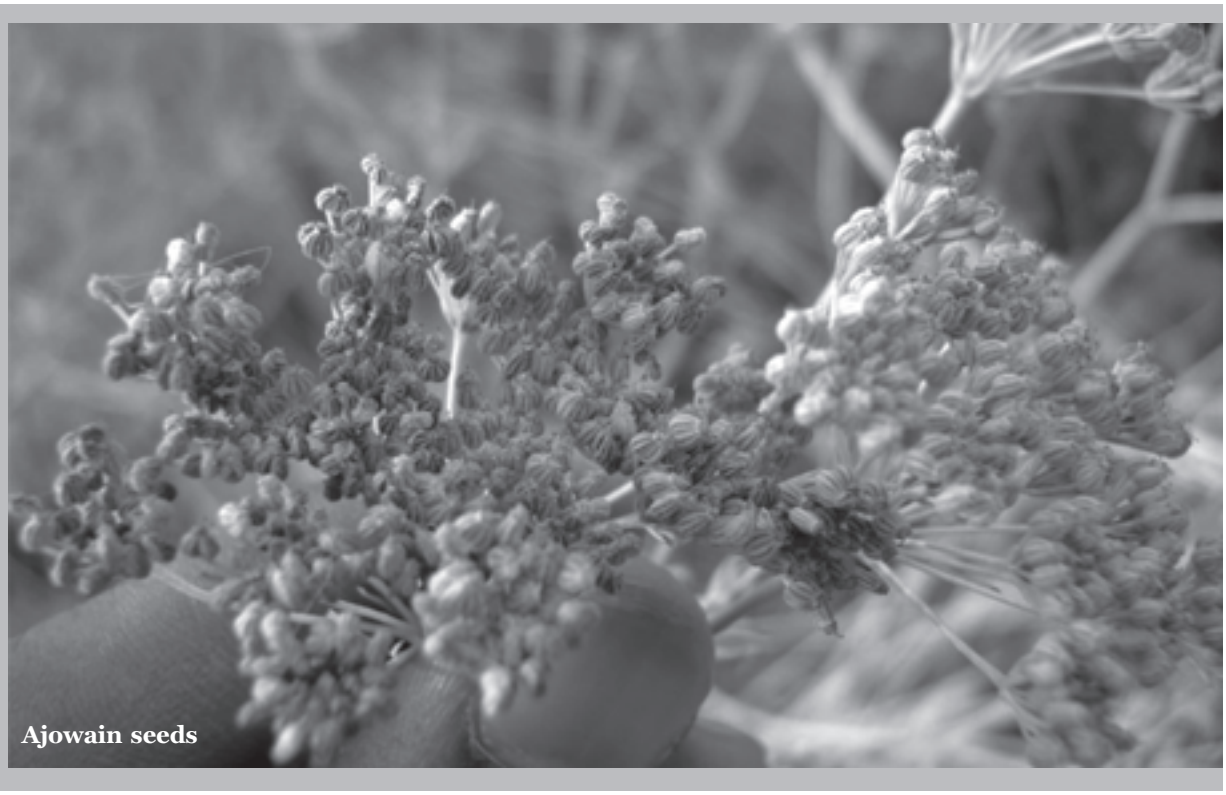
flavouring numerous foodstuffs, as preservative, as antioxidant, in medicines and for the extraction of essential oils used in perfumery, essence and medicine. Ajowain is one of the most valuable spices widely used for seasoning various food preparations, thereby improving human health in many ways. In the kitchen, ajowain seeds are almost exclusively used in Indian cuisine. They are mainly found in pulse dishes such as dhal, as well as vegetable dishes and pickles. The sharp flavour of ajowain has the ability to cut through rich flavours and densely spiced foods. Mix crushed ajowain with other spices such as cumin and coriander to season chicken and fish. It also goes well with lentils, beans, and root vegetables. Roasting or frying in combination with potatoes or fish enhances the strong aroma of Bishop's Weed.

COMPOSITION OF SEED

The information on physico-chemical composition of seed is often sought, which in brief is as follows: moisture 7.45 per cent, carbohydrates 24.6 per cent, protein 17.1 per cent, fat per cent, fibre per cent, mineral matter (total ash) 7.9 per cent, calcium 1.53 per cent, phosphorous 443 mg, iron 27.7 mg, sodium 56 mg, potassium 1.38 mg, thiamine 0.21 mg, nicotinic acid 2.1 mg, riboflavin 0.23 mg and energy value 379 kcal/100 grams. The other constituents in its fruits include sugars, tannins and glycosides.

OIL OF AJOWAIN

The seeds of ajowain contain two types of oil namely essential or volatile oil and non-volatile fatty oil (about 26 per cent,) but the characteristic odour and taste in its seeds are due to the presence of an essential oil. Steam distillation of crushed seeds yields 2.0 to 4.0 per cent, essential oil, which is valued considerably in medicine because of the presence of thymol. In India, ajowain seeds are distilled partly in primitive native stills and somewhat in more modern and large-scale distilleries located in Rao (Indore), Gwalior and Dhar. Its oil and thymol both are used in pharmaceuticals. Oil of ajowain is an almost colourless to brownish liquid possessing a characteristic odour and sharp burning taste. A part of thymol may be separated from its oil in the form of crystal, which is sold in Indian market under the trade name of *AjkKdPh* or *BAjv* and is much valued in medicine as it has nearly all the properties ascribed to ajowain seed. This is used in surgery as an antiseptic and is found to be of great value in the treatment of hook and other worms. The aqueous solution of thymol is an excellent mouthwash, and hence, it is a constituent of most of the toothpastes. The essential oil and the thymol are used in India as medicine particularly for the cases of cholera. Essential oil contains about 50 per cent, thymol, which is a strong fungicide and germicide, and hence, used against a range of microorganisms.



Ajowain seeds

MEDICINAL VALUE

Ajowain is a very old and well known Ayurvedic spice and ajowain seeds combine the powerful and stimulant qualities of capsicum, bitter property of chiretta and anti spasmodic qualities of asafoetida. Ajowain seeds are reported to be useful in flatulence, colic, atonic dyspepsia, diarrhoea, cholera, hysteria and spasmodic affections of bowels. Seeds produce feeling of warmth but relieve sinking and fainting feelings. They are most frequently used in conjunction with asafoetida, myrobalan and rock salt. Externally, ajowain paste is applied to relieve rheumatic and neuralgic pains. A teaspoonful of seeds with little salt is a common folk medicine remedy for indigestion due to irregular diet. For stomachache, cough and indigestion, the seeds are masticated, swallowed and followed by a glass of hot water. They are also useful in skin disorders. A hot poultice of its seeds is used as a dry fomentation to the chest in asthma and to hands and feet in cholera and fainting. They check chronic discharges such as profuse expectoration from bronchitis. The extracts of seeds in 40 and 70 per cent, alcohol are toxic to [illegible] and *Eh* [illegible] It has been found to possess antibiotic activity against [illegible] and *Ma* [illegible] var. aureus. Even the roots of ajowain are reported to possess diuretic and carminative properties and are used in febrile conditions and in stomach disorders.

WORLD MARKET

India exported 1047 tonnes of ajowain valued Rs. 7.16 crores in the year 2009. It is exported in both raw and processed form (Ajowain oil). India ranks 1st among countries which export Ajowain. Other major countries which export Ajowain are Turkey, U.S.A, China, Malaysia and Pakistan. European countries mainly act as re-exporters of Ajowain to other countries.

Major importing markets for ajowain are USA, Vietnam, U.K, Germany, Nigeria, Canada, and Saudi Arabia. Indian exports accounts for 48% of world demand. 51% of Indian exports goes to Asian countries, 27% to Europe, and 17% to American countries. (to be cinfirmed with Mktg. dept)

FUTURE PROSPECTS

Use of ajowain as spice, medicine and industrial raw material shows its immense potential to be a main crop. So the research has to emphasize towards developing high yielding varieties and standardization of production technology. Indian farming community has to be informed th 2pt)

8 Ajowain are

EMPOWERING FARMER GROUPS PAYS THE DIVIDENT

Dr. S. Varadarasan
Scientist- D
ICRI, Myladumpara

Epn infection on root grub 7 days after application of EPN infected cadaver in soil

ICRI has been taking all possible ways and means to assist farmers in their endeavour on eco-friendly cultivation of cardamom. Training on mass production of biocontrol agents are given to members of Farmer Groups, SHGs, and NGOs.

Two farmers groups (1) Sasthra farmers Club at Rajakumari (Idukki Dt.) and (ii) Matha Farmers Club at Chambalam (Idukki Dt.) were given hands on training on EPN mass multiplication (**Entomopathogenic Nematode (EPN) is a biocontrol agents for management of cardamom root grub**) at ICRI in July 2011.These two farmer groups established EPN multiplication unit at Rajakumary and Chembalam. As on September 2011, both the farmer groups could successfully multiply *Galleria* larvae and could produce EPN. The EPN infected Galleria cadaver produced is being used by the members of the farmer groups for root grub control. They have planned to sell EPN to the needy farmers also! ICRI welcomes other farmers groups/ NGO's/SHG's to undergo training on production of bioagents for use among the cardamom farming community.

Hands on training for Sasthra Farmers club on EPN mass multiplication

Hands on training for Matha Farmers group on EPN mass multiplication

Matha Farmer group successfully mass produces Galleria laravae for EPN production

Exhibiting mass produced EPN by Matha Farmer group member to Field Officers

ACTION ON TO STRENGTHEN SUPPLY CHAIN IN CHILLIES FROM FARM LEVEL IN ANDHRA

Over 350 chilli farmers from 35 mandals in Guntur and Prakasom districts of Andhra Pradesh converged at the "Sugandha Sangamam", an initiative to bring sustainability in development of chillies organized by the Spices Board in collaboration with the World Spice Organisation on 23rd January 2012. The programme is aimed at strengthening the supply chain from the farm level to exports.

Dr.A.Jayathilak IAS, Chariman, Spices Board, is seen inaugurating the Sugandha Sangamam in Lam Research Station, Guntur

Inaugurating the Sangamam at the Lam Research Station in Lam Guntur, Chairman of the Spices Board, Dr A Jayathilak IAS assured that every possible step will be taken to improve the quality of chillies produced in Andhra Pradesh to assure fair prices to the farmers. He said that there is the need to have effective coordination between agriculture universities, state department of agriculture and horticulture, exporters, farmers and traders.

This joint initiative of farmers-exporters-Spices Board and Department of Agriculture and Agriculture Universities will open a platform to discuss matters and chalk out action plans related to improvement and enhancement of production of better quality spices, specially Chillies in Andhra Pradesh., Dr Jayathilak said. The "Sugandha Sangamam" was organised in the context where chillies, a major source of foreign revenue for the country is facing challenges of quality. The global demand for chillies has increased and the need to consolidate and maintain India's position as a world leader in this sector is gaining importance.

The Board will complete the construction of the Spices Park in Guntur very soon and also bring out more effective functioning of the Quality Lab of the Board for the benefit of the farmers also.

The meeting was presided over by Director of Research, DR YSR

A view of dudience attending the Sugandha Sangamam

Dr.P.Srinivasalu (second from the left) Director (Research), Dr.YSR Horticulture University, seen along with Dr.A.Jayathilak IAS, Chariman, Spices Board [left], Shri.S.Siddaramappa, Director (Development) Spices Board [right], and Shri.Shri.Devender Reddy, ITC Ltd, Guntur while releasing the story book on chillies published by the Spices Board.

Horticulture University, Dr P.Srinivasalu, and addressed by Dr K Sankar Reddy, Associate Director of Research, ANGRAU, Lam, Guntur. Dr.Ramesh Bhatt, International consultant on sustainability, Mr Siddaramappa, Director Development, Mr Devender Reddy of ITC ILTD, Dr Naram Naidu, Head, DR YSR Horticulture University, Lam, Guntur, Dr Surya Kumari, Principal Scientist of Lam Guntur, Dr Alapati Satyanarayana, former Director, Extension, Progressive farmer, Mr Mekala Lakshminarayana, Mr C. Sasidhar of ITC ILTD, Smt Padmaja and Dr Lingappa spoke on aspects various aspects of chilli cultivation and post harvesting. A story book on Chillies published by the Spices Board incorporating the good agriculture practices in chillies was released by Dr P. Srinivasalu.

Chairman, Spices Board delivering the inaugural address.

The farmers who attended the meeting expressed their desire for more supportive programmes from Spices Board in providing alternative mechanisms for hygienic drying of chillies besides black silpaulin and tarpaulin sheets. They also demanded supply of IPM kits [Integerated pest management] before the commencement of the sowing season. They also demanded supply of solar driers and solar poly houses for drying of chillies, programmes for drip irrigation and supply of plant protection equipments like Taiwan sprayers. There was demand to extend the on going schemes for chilli farmers to Krishna district also.

The farmers also wanted to organize exposure visits / study tours to gain information on scientific processing of chillies and training programmes on growing and processing of turmeric.

Spices play a major role in the total agricultural exports of the country and a substantial jump was observed in the past five years especially in the value of exports. But there is shortage in supplies especially the quantity that is available for exports. The industry is faced with the challenge of decline of quantity for exports mainly due to short supply and quality concerns. Reports from April to August 2011 indicate that the hike in export value is 26 percent and quantity wise there is a fall of 23 percent. 32 percent of the quantum and 40 percent of the value targeted for export has been achieved. But the question as to why there is a fall in quantity continues to be a pain in the neck.

Availability of good quality produce in sufficient quantities, problem of pesticide residues, presence of aflatoxin and illegal dyes remain as issues that need immediate attention. There is an imperative need to make this profit promising sector competent in the global front. Production and processing that result in hygienic products satisfying international standards should be made available for local purposes as well so that quality assurance become mandatory in and outside the country. As a measure to ensure this, Spices Board has already made plans for the 12th Five Year Plan including promotion of organic cultivation.

The Suganda Sangamam is finds relevance in this context. The joint initiative will be focusing on promotion of cultivation and quality

assurance to increase export, discuss major challenges in trade, developmental programmes, field problems, research interventions and practical knowledge of farmers.

Excellence of Indian Chillies, involving every segment of the industry is one of the objectives of the Sugandha Sangamam. It also highlights the importance of food safety and traceability apart from the parameters like quantity and quality and price to make the sector internationally competent. Once the market offers stable price to the produce, probably there is chance for bringing more area under cultivation thus strengthening the chilli farming sector. So there is also an issue of sustainability and a need for a holistic approach on the marketing of spices both domestically and internationally.

Aware of the fact that quality and quantity improvement needs a sea change at the grass root level; the organizers identify the potential area of cultivation and the role of farmers in it. ☆

URGENT ACTION URGED TO LINK SUPPLY-CHAIN SYSTEM IN SPICES SECTOR

Dr. A. Jayathilak, IAS Chairman,Spices Board,lighting the lamp to mark the inauguration of the Workshop on Sustainability in Spices sector in Cochin on January 20, 2012.

The spices industry is facing the challenge of declining quantity for exports, mainly due to supply shortfalls and quality concerns which calls for immediate crisis management bringing and connecting the entire supply chain starting from researchers, farmers, exporters, importers and consumers, ensuring Government intervention and back up support. Dr. A Jayathilak, Chairman, Spices Board said in Cochin on January 20 while inaugurating the one-day workshop on "Sustainable Growth in the Spices Sector" organized jointly by the Spices Board, World Trade Organisation (WTO) Cell of Government of Kerala and the World Spice Organisation.

The Director of State Agriculture Management Training Institute, Trivandrum Mr.V.V.Pushpangathan who presided over meeting said India though is the largest producer, exporter and consumer of spices in the world, exports only 10 per cent of its total production contributing almost 50 percent of the global requirement. There has been increasing global demand for spices and India has to consolidate and maintain its position as the world leader in this sector.

Referring to the present scenario and concerns in spices production and export, Dr. A Jayathilak said that though substantial jump in exports was observed in the past five years, recently the export of spices in quantity terms has seen a decline. Export figures for April-November 2011 indicate that there has been a hike in export value of spices by 26 per cent, while quantity-wise spices export fell by 23 per cent. While 32 per cent of the quantum and 40 per cent of the value targeted for export has been achieved in the year 2011-2012, the question as to why there is a fall in quantity remains. Kerala's representation in spices sector needs to be protected through concerted joint efforts by the Spies Board and the Department of Agriculture in association with the Indian Institute of Spices Research and the Kerala Agriculture University. Karnataka had made huge advancements in pepper production. The situations here call for urgent remedial actions, he pointed out.

Speaking on the occasion, Dr.K. Prathapan, Director, State Horticulture mission stressed the need to ensure quality planting materials to farmers. The work shop is a definite step on convergence of

resources in this sector. Research and results of research reached should reach farmers, he said.

The workshop chalked out strategies to ensure steady high yield and better quality among five major spices with high export potential - black pepper, cardamom, ginger, turmeric and nutmeg, which are significant to Kerala's economy. The Workshop focused on boosting spices production by securing high quality planting and seed material, overcoming soil related constrains, dealing with devastating diseases and assuring stable price for the produce.

Mr. Philip Kuruvilla, Chairman WSO detailed the parameters to remain internationally competitive for sound export business in the WTO era. He outlined the major challenges in spice trade and highlighted the need to meet international standards on food safety and food security by resolving the problem of pesticide residues, presence of aflatoxin, illegal dyes etc. WSO is committed to sustainability and food safety of spices at farm level and work in this direction has already been commenced, he added. The lack of awareness and non implementation of food safety laws by the government regulatory bodies from the farming level is one of the prime cause of consignment rejections in spices sector for nonconformity with international food safety standards, he pointed out.

Mr. George Paul, Director of the World Spice Organization said that agricultural sustainability is primarily a question of human sustainability and therefore purity of food is an important factor. The international food safety standards are nothing but standards for human sustainability.

DR Anandaraj, Director, Indian Institute of Spices Research, Dr Sujatha and Dr Elsy both Associate Professors of Kerala Agriculture University, Mr. PM Suresh Kumar, Director Marketing of Spices Board, Mr. K.R.K Menon, Senior Scientist of Quality Evaluation of Spices Board, Dr B. Sasikumar of Indian Institute of Spices Research, Dr MR Sudharsan, Director Research of Spices Board, Dr.Thomas Biju Mathew of Kerala Agricultural University, Vellayani, Mr. Philip Kuruvilla, President of the World Spice Organisation and Mr. KL Martin of Wayanad Social Service Society lead the discussions on food safety and traceability in spices. addressed on the issues of Chemical residue in spices.

Scientists and experts from Kerala Agriculture University, Indian Institute of Spices Research, World Spice Organisation and Spices Board led the technical session on Field problems and Research interventions. Constraints and Opportunities from the farmers' perspective were also discussed.

Spice farmers from various parts of the state, spices exporters, traders, scientists and foreign delegates participated. The Workshop concluded to organize farmer initiatives in producing centres for various major spices like cardamom, pepper, ginger, turmeric and nutmeg. The action plans formulated in the workshop will be translated in the fields through further collaborative actions of the World Spice Organization, Spices Board, Kerala Agricultural University, Indian Institute of Spices Research and Department of Agriculture. ☆

SEMINAR ON ORGANIC FARMING: THODUPUZHA

Sri.Roy K Paulose, Vice Chairman, Spices Board is seen inaugurating the Regional seminar on organic farming conducted at Thodupuzha on 13th January 2012 organised by Spices Board. Sri.Mukesh Shankar,Assistant Director ,Spices Board, Sri.K G Antony, President KADS, Dr.A K Vijayan, Head Plant Pathology division, Dr.Manoj Ommen Scientist, (Agronomy) ,ICRI Myladumpara, Sri.K V Jose Secretary KADS, Smt.C A Usha, Deputy director, Principal Agricultural office Thodupuzha are also seen.

CALENDAR OF OPERATIONS FOR IMPORTANT SPICES - MARCH 2012

Timely planning and execution of farm operations based on agro-climatic conditions of the area is important for successful farming for higher productivity and sustainability. To facilitate this calendar of operations in respect of important spice crops for March is given below.

Name of the crop/ Type of operations	Details of operations to be carried out
CARDAMOM I. Agronomic measures 	NURSERY ➢ Regular watering may be given to bed/polybag/ sucker nursery based on necessity. ➢ To control damping off/seedling rot diseases in nursery, soil drenching with 0.2 per cent copper oxychloride or 0.2 per cent mancozeb may be taken up. ➢ As bio-control measure, trichoderma or Pseudomonas or Bacillus species may be applied in the soil. ➢ For controlling leaf rot disease, spray 0.3 per cent mancozeb and for controlling leaf spots, spray 0.25 per cent difoltalan or 0.2 per cent bavistin after noticing early symptoms. MAIN FIELD ➢ Continue irrigation based on necessity wherever irrigation facility is available. ➢ Light pruning may be done by way of removing only the hanging dry leaves and sheath. This will facilitate better pest control even at low spray volume of pesticide.
II. Pest Management	➢ For Integrated Pest Management prune dry leaves without removing green leaf sheath. ➢ Apply chemical pesticides (spray may coincide shoot borer moth emergence).
III. Disease Management	➢ Keep constant vigil for any katte virus/kokke kandu affected plants to uproot and destroy, if found. ➢ For controlling leaf rust and chenthal & leaf spots, spray 0.25 per cent Mancozeb or Companion (two to three rounds – 30 days interval). ➢ If symptoms of stem lodging are noticed, spray 0.2 per cent Bavistin on pseudo stem. ➢ Root rot and leaf yellowing can be controlled by foliar spray and soil drenching with 0.2 per cent Bavistin or Carbendazim + Mancozeb. ➢ If symptoms of capsule brown spot (Anthracnose) is noticed, spray with 0.2 per cent Bavistin.

IV. Harvest and Post harvest operations.	➢ Continue harvesting with a gap of 25-30 days depending upon the maturity of the capsules. ➢ Harvest only the matured capsules for getting better out turn. ➢ Always store the cured cardamom capsules at 10 per cent moisture in 300 guage black polythene lined gunny bags inside wooden box to retain green colour and quality.
LARGE CARDAMOM 	Nursery ➢ Regular watering may be done in the sucker nursery with available water resources depending on moisture status in the soil. ➢ Dried or powdered cattle manure/organic manure/topsoil may be applied in the nurseries for healthy growth of suckers if not applied so far. ➢ Disease/pests infested suckers may be removed and destroyed. ➢ One round weeding may be attended followed by forking of soil at plant base and then plant base should be covered with top soil and then mulched. Plantation: ➢ Large cardamom plants may be irrigated at regular intervals with available water resources, depending on rainfall and moisture status in the soil. ➢ Chirke and Foorkey infected plants may be destroyed by uprooting/ burial at regular intervals in the pits. ➢ Regular inspections may be carried out to observe caterpillar/shoot borer/shoot fly incidence if any and may be hand picked and destroyed mechanically. ➢ Application of cattle manure/compost/organic manures will help in getting sustained production, improving productivity and quality of the crop. ➢ One round weeding followed by mulching may be carried out to conserve soil moisture if it is not done earlier. ➢ All the aged/diseased/unproductive cardamom plants may be uprooted and destroyed and the cardamom field may be kept ready for marking lines, opening pits, so that timely replantation/gap filling operations can be taken soon after getting the rains. ➢ Arrangements may be made for getting good shade tree saplings for planting in the open/poor shaded areas.
PEPPER I Agronomic measures	Nursery ➢ If preparation of pepper cuttings for propagation was not done last month, carry out the same as detailed below.

	➢ Runner shoots already marked and coiled on wooden pegs removed. Then cut them into bits with two to three nodes by rejecting the over matured and immature portion of the vines. ➢ Plant these cuttings in polythene bags of 6"x4" filled with top soil, sand and farm yard manure in 3:1:1 proportion. Provide adequate holes in the polybags in the lower half of the bags. ➢ Arrange the polybags inside a pandal and irrigate regularly.Main field ➢ Wherever irrigation facilities are available, start irrigating the plants once in a week by hose irrigation or daily by drip irrigation.
II Post Harvest Operations	➢ Continue harvesting by observing the right maturity indicated by the colour change in one or two berries in a spike from green to orange or red. ➢ Always ensure threshing of pepper either by manual method or using mechanical pepper thresher hygienically. ➢ For drying use only clean floor made of concrete, clean bamboo mats or polythene sheets to get quality final produce.
VANILLA 	➢ Irrigation to be continued based on weather condition and necessity. ➢ Always ensure adequate mulch material at the base preferably with partially or fully decomposed organic debris. ➢ Tying of vines with the standard to be continued based on necessity. ➢ Pollinate the flowers manually with the help of skilled labourers between 6.00 a.m. to 1.00 p.m. on the day of opening of the flower. ➢ Look out for any vanilla vines exhibiting viral symptoms and remove such vines immediately and destroy.
CHILLI I Agronomic measures II Pest Management 	➢ Irrigation to be continued based on necessity and soil type. ➢ Collection of egg masses/early instar larvae of caterpillars found in groups may be done manually and destroy them. ➢ Erect pheromone traps for monitoring pod borers 6" above crop level @ 5 per hectare. Change the pheromone cards once in 15 days for better results. ➢ Spray Need Seed Kernel Extract (NSKE) five per cent or *Bacillus thuringiansis* var *kurstaki* (bio control agent) @ 500 grams per hectare for control of early instar larvae of pod borers.
III Harvest and Post Harvest management	➢ Harvest the ripe chilli fruits and dry in clean concrete floor, polythene sheets or cement yards with intermittent turnings. ➢ The optimum moisture content of dried produce is 10 per cent for safe storage without any mould problem.

	➢ Wherever possible use mechanical chilli drier or solar poly house driers to avoid any contamination likely to arise on open drying.
FENNEL (Kharif transplanted) 	➢ Harvesting of umbels may be done when they become fully matured and turn into yellowish green colour. ➢ Threshing, drying, processing and packing may be done under clean and hygienic condition. ➢ Cleaning and grading of the produce is beneficial to fetch good prices. ➢ Storage may be done in the godowns free of rodent, insects, etc. to protect the produce from contamination.
FENNEL (Rabi transplanted)	➢ Harvesting of umbels may be done when they become fully matured and turn into yellowish green colour. ➢ Threshing, drying, processing and packing be done under clean and hygienic condition. ➢ Cleaning and grading of the produce is beneficial to fetch good prices.
FENNEL(Rabi drilled)	➢ Harvesting of umbels may be done when they become fully matured and turn into yellowish green colour. ➢ Threshing, drying, processing and packing may be done under clean and hygienic condition. ➢ Cleaning and grading of the produce is beneficial to fetch good prices.
CUMIN 	➢ Harvesting may be done in the early morning hours to prevent shattering of seeds. ➢ Threshing, drying, processing and packing may be done under hygienic condition. ➢ Cleaning and grading of the produces may be done to fetch good prices. ➢ Storage may be done in the godowns free of rodent, insects etc. to protect the produce from contamination.
FENUGREEK 	➢ Crop may be harvested, threshed, dried and packed. ➢ Produce may be cleaned and graded to fetch good prices. ➢ Cleaned and graded produce may be stored for favourable market and to fetch good prices.
CORIANDER	➢ Crop may be harvested, threshed, dried and packed. Produce may be cleaned and graded to fetch good prices. ➢ After harvest, the crop may be dried under partial shade to retain the green colour and its aroma. ➢ Cleaned and graded produce may be stored for favourable market and to fetch good prices.
CELERY	➢ Irrigation may be given at 15-20 days interval.

MONTHLY AVERAGE PRICES OF SPICES FOR JANUARY 2012

SPICE	CENTRE	GRADE	PRICE ₹/KG
Black Pepper	Kochi	Ungarbled	306.40
		Garbled	321.40
Cardamom small	Vandanmettu /		
	Bodinayakanur	bulk e-auction	512.44
Cardamom (L)	Siliguri	Badadana	748.75
	Siliguri	Chotadana	679.38
Chillies	Virudhunagar		-
	Guntur		64.94
Ginger(Dry)	Kochi	Best (New)	75.00
	Kochi	Medium (Old)	85.00
Turmeric	Kochi	Nadan	56.33
	Kochi	Salem	50.25
		Agmark	50.25
	Chennai	Erode	50.88
Coriander	Chennai	Rajasthan Green	62.12
	Chennai	Deluxe	49.12
Cumin	Chennai	Ordinary	164.38
Fennel	Chennai	-	95.62
Fenugreek	Chennai	-	33.00
Mustard	Chennai	Small	45.50
Garlic	Chennai	Medium	40.62
Clove	Cochin	-	897.60
Nutmeg(with shell)	Cochin	-	356.20
Nutmeg(without shell)	Cochin	-	658.20
Mace	Cochin	-	1218.00

SPICES SOURCES

Prices are collected from secondary sources like Agricultural Produce Market committees, Kirana Merchants Association, India Pepper and Spice Trade Association,'Spices Review' from chhaganlal kalidas mehta, Licensed Cardamom Auctioneers etc.

ALL INDIA CARDAMOM AUCTION SALES AND PRICES FOR JANUARY 2012 COMPARED WITH JANUARY 2011

PERIOD	JANUARY 2012		JANUARY 2011	
	Quantity sold (Kg)	Average price (₹/Kg)	Quantity sold (Kg)	Average price (₹/Kg)
First week	620795	505.82	237878	1387.16
Second week	740760	495.26	174358	1374.48
Third week	462387	506.14	116644	1331.27
Fourth week	597648	516.58	141657	1312.03
Fifth week	303851	569.32	77066	1218.30
Total	**2725441**	**512.44**	**747603**	**1343.84**

Source: Auction reports received from licensed cardamom Auctioneers

AVERAGE INTERNATIONAL SPOT PRICES FOR JANUARY 2012

SPICE	MARKET	GRADE	(USD/KG)	(₹/KG)
Black Pepper	U.S.A	MG-1	7.10	364.58
White Pepper	U.S.A	Muntok	10.39	533.53
Cardamom(Small)	Saudi Arabia	India Asta Extra Bold	14.02	719.93
Chillies	U.S.A	India S4	3.53	181.26
		Chinese Small	3.86	198.21
Ginger(Dry)	U.S.A	Indian	4.30	220.80
Turmeric	U.S.A	AFT 5..25 Curcumin	5.62	288.59
Coriander	U.S.A	Canadian	1.39	71.38
Cumin	U.S.A	Syrian/Indian	3.88	199.24
Fennel		Egyptian fancy	2.82	144.81
Fennugreek	U.S.A	Ind/Turkey	1.10	56.48
Clove	U.S.A	Mad/Zan/Com	19.01	976.16

Exchange Rate 1 US $ = ₹ 51.35

SOURCE:M/s.A.A. SAYIA & CO.INC HOBOKEN

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