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THE HINDU

Better profits with smaller sized tubers



AGE-OLD PRACTICE: Traditionally one kg size tubers have been used as planting material.

The lack of quality planting materials, particularly improved varieties, is a major constraint in expanding area under tuber crops.

Naturally bulky, with very low multiplication rate and due to demand as a food source or for cash generation lead to very low availability of good quality planting materials with the farmer.

Even though a good array of high yielding varieties are available in the research stations, the above factors contribute to their meagre spread among the farming community.

Better alternative

“When compared to rice or wheat, tubers can give satisfactory production even in partially shaded area and do not need much investment or labour compared with paddy or wheat. Encouraging cultivation of tubers like elephant foot yam is a good way of protecting farmers from total crop loss due to vagaries of nature” says Dr C. P. Robert, Programme Coordinator, CARD (Christian Agency for Rural Development)-Krishi Vigyan Kendra, Pathanamthitta District, Kerala.

It is a common practice in elephant foot yam cultivation that the cut portions of tubers containing the central ring are used as planting material. The big sized tubers usually produce 2-3 sprouts (setts) in the central ring and farmers divide the tubers according to the position of sprouts in the central ring. This leads to unevenly sized tubers with varying weights and also non-uniform growth in the field and wastage.

The other disadvantage is using big sized tubers results in low multiplication rate of improved varieties and thereby increases the production cost.

Change in liking

Traditionally farmers use setts from one kg size tubers as planting material and the harvested tubers weigh 4-6 kg in size.

Lately, due to the change in consumer preference the bigger tubers are less favoured in the market and fetch lesser price than smaller sized ones.

The Kendra solved this problem by developing a pre-sprouting technique for the crop which yields small sized tubers.

Explaining how it is done Dr. Robert says:

“The central bud is split into setts by passing the knife half way through the tubers. For example a two kg sized seed tuber is half split into 8 setts and after 2-3 hrs fresh cow dung is applied on the cuts.

“The tubers are then kept for bud sprouting. Within 30-40 days the cut segments develop sprouts and are separated for planting as independent setts.

“These can be planted at a spacing of 60cm x 60 cm while in traditional system a wider spacing of 90 cm x 90 cm is required. About seven tonnes of seed tubers is needed for planting in one hectare of land where as in traditional system about 9-12 tonnes is required.”

More economical

According to Mr. Mohanan Pillai Varikolil, a Karshakothama award-winning yam farmer in the district, “The use of sprouted small setts is more economical as the tubers are small in size and fetch a better price in the market.

The small tubers are easy to harvest and there is less weed competition due to the closer spacing adopted.” “The technique is a modification of the Central

Tuber Crops Research Institute (CTCRI) developed technology and has been made more farmer friendly by addressing both seed production and commercial production needs” says Rincy K Abraham, Subject Matter Specialist(Horticulture).

Little refinement

CARD KVK refined the technique a little more and today in the region the crop has much relevance as insurance coverage to farmers during periods of erratic weather and can give satisfactory yields in higher temperature.

For more information on the same farmers can contact Rincy K Abraham, Subject Matter Specialist (Horticulture), CARD, (Christian agency for rural development), Krishi Vigyan Kendra, Pathanamthitta, email: email.cardkvk@yahoo.com, Phone: 0469 2662094, 09645027060.

900 tonnes of paddy procured through PPCs

The Krishna district authorities opened over 230 Paddy Purchasing Centres (PPCs) across the district to procure paddy in the ongoing Kharif season by ensuring promised Minimum Support Price.

Nearly 900 tonnes of paddy was procured by the end of the December first week through the PPCs which were opened by the Primary Agriculture Credit Societies (PACS) and Indira Kranthi Pathakam. “All the 235 PPCs began procurement of paddy both in upland areas and Eastern Krishna by Wednesday. Special teams are also deployed to promise MSP to the farmer”, Civil Supply Officer A. Krishna Rao told *The Hindu*.

As many as 124 PPCs were opened by the Self Help Groups while 97 PACS were involved in procurement of paddy this season. “The purchasing centres will remain open till March end to promise better marketing facility for the farmer to sell the produce at MSP price”, added Mr. Krishna Rao.

Do not use excess urea, say officials

Paddy farmers should restrict the use of urea as and when required and in accordance with the area of field.

Excess application of fertilizer is as bad as pest attacks, said officials at the inaugural of two-day “Orientation training programme for human resource development under Integrated Pest Management” by the Agriculture Department at Puliur village near here on Wednesday.

S. Asokan, Project Co-ordinator, Krishi Vigyan Kendra, Sirugamani, in his inaugural address, spoke on the objective of the training programme which mainly aimed at analysing the problems being faced by jasmine cultivators in the district.

Mathiyazhagan, Joint Director of Agriculture, said that excess dose of urea particularly in “samba” paddy fields did more damage to the crops. Over dose of urea destroyed farmer-friendly insects, he added

Focus on farm technology



A coconut from the Philippines and small coconuts from Lakshadweep on display at an exhibition as part of an international symposium on Plantation Crops in Kozhikode.— Photo: S. Ramesh Kurup

The latest technologies in agriculture and allied sectors and value-added farm products, developed by various divisions of the Indian Council of Agricultural Research (ICAR) and the Indian Institute of Spices Research (IISR), are on show at an exhibition which began at Edamaram Square on P.T. Usha Road in the city on Wednesday.

The show, as part of the ongoing international symposium on Plantation Crops, also has products by various private players in the agriculture sector. The Tea Board of India has at its stalls a range of tea (leaves and dust) usually not seen in the market. The stalls sell export quality white tea leaves, which cost over Rs.10,000 a kg, and ordinary tea dust.

The Central Plantation Corporation has different varieties of hybrid coconut and arecanut on display.

‘Sanramon,’ the largest variety of coconut, from the Philippines; and ‘Lakshadweep Micro,’ the smallest; are on display. A ‘Neera’ tapping device called ‘Coco Sap Chiller,’ developed by the corporation, is displayed. A firm from Palakkad sells unpasteurised farm-fresh Neera while the Krishi Vigyan Kendra (KVK), Kannur, has filled its stall with fruit- and vegetable-based value-added products.

The exhibition will conclude on December 12.

Cotton procurement centre opened in Raichur

As a result of persistent pressure on the State government by different farmers’ organisations, the Cotton Corporation of India (CCI) opened a procurement centre at local cotton market on the premises of the Agricultural Produce Marketing Committee yard here on Wednesday.

The minimum support price (MSP) of Rs. 4,050 and Rs. 3,750 have been fixed for two different varieties of cotton. In a release, APMC president M. Narasana Gowda and secretary V.B. Pujar appealed to the farmers to bring clean and dry (without spaying water to increase weight) cotton.

The farming community expects that the centre will trigger a competition for cotton purchase in open market and help the recovery of cotton prices. Thousands of farmers across the district had cultivated the crop on their fields this year considering the relatively better price between Rs. 5,500 and Rs. 6,000 a quintal of cotton last year.

This resulted in expanding the cotton growing area to 1.10 lakh acres, almost double compared to previous year. The farmers began to be hit hard by sudden

fall of prices to around Rs. 3,500 a quintal in the market just as they began harvesting.

Meanwhile, farmers under the banner of the Raitha Hitarakshana Samiti blocked State Highway 20 at Sirwar, demanding scientific MSP for paddy and cotton. The traffic flow was hit for an hour.

Ray of hope for tribal farmers



Bharadwaj (extreme left) District Development Manager of NABARD inspecting a mango sapling planted in the land of T. Durgappa in Kodihalli village in Ballari district.

T. Durgappa in Kodihalli village of Sandur taluk was unable to cultivate on his one-and-a-half acres of land, as it had turned saline. Now, his worries have come to an end. Under the Tribal Development Scheme of the National Bank for Agriculture and Rural Development (NABARD), his saline land is getting converted into a mini orchard.

He hopes to get a regular income in a couple of years from now.

Like Durgappa, there are around 890 beneficiaries (90 per cent of them belonging to Scheduled Tribes and 10 per cent to Scheduled Castes category) in six villages — Ankammanahal, Kodihalli, Hiral, Thippanamaradi, Maralahalli and Jigenahalli — with small land holdings, who will benefit from the scheme. NABARD will extend financial help in the form of a grant to develop a wadi (a small orchard covering one or two acres).

It will also provide expert technical guidance through the Sankalpa Development Centre, a non-governmental organisation, to ensure that the scheme will be successful and the benefits can be reaped by the beneficiaries.

The wadi approach aims at the rejuvenation of the environment in an integrated and comprehensive manner leading to an improved quality of life. It involves the management of the needs of the tribal community in such a way that their demands match the resources available within their reach.

Under the scheme, around 40 fruit-bearing plants and tree species, are planted in one to two acres of land. Awareness is created among the beneficiaries about rain-water harvesting and plant protection.

To water the plants, each beneficiary is given a 1,000-litre capacity tank to which water is supplied through tankers.

“Around Rs. 60,000 per beneficiary is the expenditure to be incurred by NABARD over a period of six years. The beneficiaries can start reaping the benefits from the fifth year onwards,” Bharadwaj, District Development Manager of NABARD, told *The Hindu* .

Call for sustainable green revolution

With farmlands depleting steadily across the country, what India needed was not just Green Revolution but a sustainable and never-ending green revolution, agricultural scientist M.S. Swaminathan has said.

He was inaugurating an international symposium on Plantation Crops hosted jointly by the Indian Council of Agricultural Research (ICAR) and the Indian Institute of Spices Research (IISR), Kozhikode, at Hotel Gateway here on Wednesday.

Dr. Swaminathan, who maintained that an authority should be established for ensuring and safeguarding the stability and continuity of the biodiversity of the country, said that experts from all streams of science and technology should be included in that.

Dr. Swaminathan, who expressed concern over the present moratorium on field trials for genetically modified organisms (GMO), stated that it was posing a serious handicap to the development of the agriculture sector. “At least some universities should take initiatives for the field test,” he said. It takes at least 10 years for a new variety of any crop to be ready for cultivation by farmers.

“Therefore speed is of the essence in organising field trials and gathering reliable data on risks and benefits,” he said.

With the country’s population increasing year by year, banning experiments on such products would only invite further troubles in the food sector. “We should place in position a trial-and-safety assessment system which answers the concerns of anti-GMO experts and environmental organisations,” he said.

Dr. Swaminathan also exhorted the farmers’ community to promote cultivation of medicinal plants by farming them as an intercrop for plantation crops and tap the increasing potential in the Ayurvedic medicine market.

- *GM trial ban hinders farm sector growth, says scientist*
- *Grow medicinal plants, farmers told*

6,000 acres of fallow land made fertile

The lands that had otherwise remained unused for various reasons for 2-3 years



highly beneficial: The system of rice intensification is gaining popularity among farmers of Villupuram.

With a view to giving a thrust to farm production, the State government has launched a scheme to make fallow lands fertile. Farming operations have resumed in 6,000 acres of land that has been lying idle for the past two to three years.

Joint Director of Agriculture P. Rajamani told *The Hindu* (during the press tour conducted recently) that the scheme envisaged the resumption of cultivation on lands that had otherwise remained unused for various reasons.

The farmers could have abandoned cultivation for various reasons such as deficit rainfall, lack of funds, manpower shortage, fund crunch and migration of farmers to other places.

Such lands termed “current fallow lands” were being identified through the local officials and those farmers were motivated to take to cultivation.

These farmers were raising millets, pulses and groundnut in the revived lands, depending upon the water availability, soil fertility and the monetary condition of the tillers. He further said that the system of rice intensification (SRI) was fast catching up in Villupuram district.

Of the total area of 1.02 lakh hectares under paddy cultivation in the district, the SRI had been adopted in 60,200 ha because the farmers were convinced of the advantages of adopting the new paddy cultivation system.

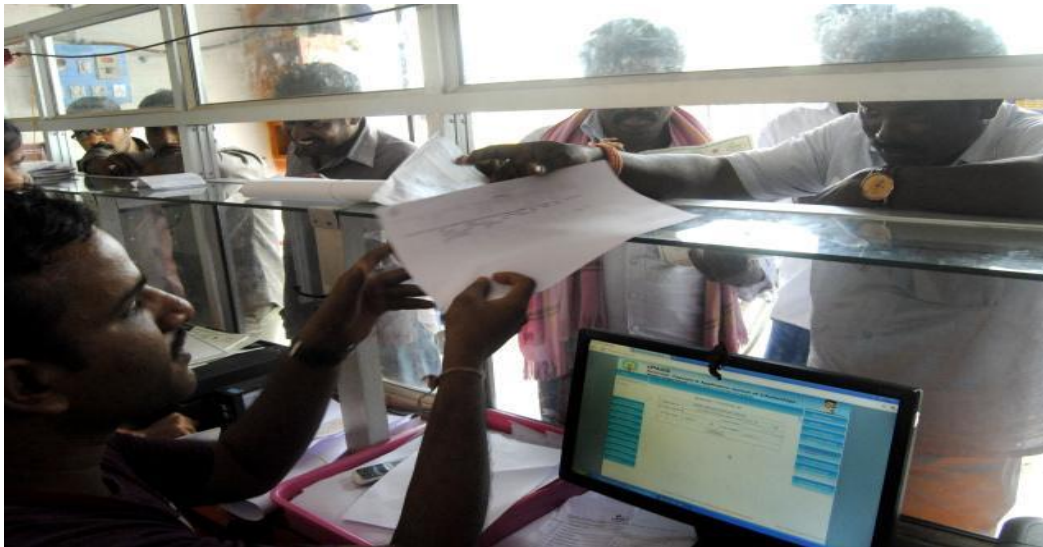
The SRI had many advantages to its credit: the duration of nursery raising could be reduced to 14 days against the regular nursery of 22 - 30 days, the seed requirement would be verily curtailed as it would require just 3 kg of seeds against the 25 kg of seed required under conventional system, and above all, the yield level would go up by 25 per cent.

Another benefit of the SRI would be that it would help overcome the problem of labour shortage, as it resorts to mechanisation. Mr. Rajamani further said that the solar-powered irrigation pump system too had gained currency among the farmers in Villupuram. For instance, the system that could run 5 hp motor would cost about Rs 4,39,950 of which the government would give a grant of Rs. 3,35,200 and the farmer’s share would be just Rs. 1,04,750.

The government was also giving a grant of Rs 4,000 per ha for fodder cultivation. For drip irrigation, through which mango varieties such as Neelam and Bengaloor, had been successfully grown, the government was giving a grant of 70 per cent.

The press team was taken to places such as Periapattu, Mettathur, Madapattu, Mayilankuppam and Ajiz Nagar at Ulundurpet. Deputy Director (Horticulture) K. Veerasamy, Personal Assistant to Collector (Agriculture) V. Arumugham and Public Relations Officer R. Singaram accompanied.

Curious farmers throng net centres



THE HINDU

Farmers at Meeseva Centers in Srikakulam on Wednesday. Photo: Basheer

Farmers thronged internet centres in Srikakulam district to know about the loan waiver details posted in the AP government website. The State government announced that the farmers and others who took below Rs.50, 000 loans will be eligible for loan waiver schemes. Though majority of farmers were in jubilant mood with the government's decision, some of them could not get any benefits due to various reasons and wrong calculation of their loan amount.

However, they are expected to get reprieve during Rythu Sadhikara Sadassulu which began officially on Wednesday. Collector Gaurav Uppal reviewed the loan waiver scheme on Wednesday and asked the officials to make arrangements for the meetings in every village.

Bread and better



The simple white bread has moved aside to accommodate fancier, differently fortified cousins

Bread, once upon a time – white, sliced, square, mass-produced, came out of a plastic packet or a loaf from the neighbourhood bakery. Bread, today – mostly never sliced, artisan, out of a wrapping (sometimes plastic packaged, sometimes brown paper or foil) – baguette, savarin, Farmer’s loaf, foccaccia, brioche – wheat, brown, multigrain, cinnamon and walnut, choco-chip, olive, garlic...

Once frowned-upon, eating bread, today, is a convenience. Traditionally European fare, croissants and dinner rolls were the most ‘fancy’ and for variety there was garlic bread and stuffed breads. Given that once upon a time there was only Modern Bread, today Kochi is breaking bread and how.

“Regular breads are monotonous, you can’t do much with them. I like to try out new breads and try new combinations – combine with different curry or do it differently. I cut a baguette, fill it with sausages and a meal is ready,” says Asha Bonney, a ‘breadie’ who tries new bread places.

The Kochiite is well-travelled and has had exposure to other kinds of foods and that makes him open to new things, says Ayaz Salim of French Toast. “Exposure is the key here, familiarity with different breads makes people more open to trying these.” French Toast, which boasts more than a dozen kinds of breads, started with breads before they started on cakes. Staff there say that the breads fly off the shelves. “It was our main thing when we started out and today, in fact every month there is an increase in the sale of breads.”

Most of these enriched breads are not boring and are versatile enough to become anytime meals or snacks. Bread is easy. Some of the breads are better than cake and easy on the conscience. A slice of good walnut-cinnamon bread or a piece of onion rosemary foccaccia with a cuppa is as comfort as comfort food gets.

“There is a market for breads in the city,” says Lakshmi Sridhar, a ‘home baker’, all set to start her own bakery, ‘Baker’s Walk’, on the Kaloorkathrikadavu road. She plans to stock at least 12 types daily at the outlet, “out of the 40 varieties I know.” As part of experiments with bread-making, she realised that there was a market for breads. “I would bake bread and give them to friends and family and they loved them. They suggested that I ought to make

bread,” she says. Her breads are artisan, which are essentially smaller quantities of bread, not mass produced.

Another ‘home baker’, Fort Kochi-based Sophie Delamare from France, bakes for friends. Her baking, she says, is an attempt to introduce locals to French bread. She has been baking bread for the last five years, “Initially I used to bake for the expats in Fort Kochi and later others, Indians, heard of me and came to me for bread.” She bakes baguettes, Farmhouse loaf, the typically French walnut and raisin bread and the Italian flatbread foccaccia.

Abad Hotels and Resorts saw the demand and their recently opened cake-shop Patisserie, stocks besides cakes, cookies and other confections, breads such as wheat, multigrain, garlic, chocolate, Spanish, baguette and French loaf. “We had breads at Canopy. Once we introduced wheat and multigrain, they were selling as much as the regular bread. There is definitely a demand, in fact wheat and multi-grain sell as much as white bread; baguettes and French loaf too have takers,” says Thomas Kurian, corporate manager F&B, Abad Hotels and Resorts.

Among the various kinds of breads, the popularity of wheat and multigrain can be attributed to awareness about maida’s ill effects and therefore white bread. Even the good old Modern Bread has extended its menu to include brown, multi-grain, oats and ragi, fruit among others and cafes and bakeries such as Bloomsbury in Lulu Mall and Bread World stock more options bread-wise (brown bread doesn’t count since it is almost as staple as white bread).

Despite the many kinds of breads in the market, the neighbourhood bakery continues its good old bread-baking and all the others too retain the white bread. Jyoti S. who says, “I don’t like the new breads. I tried a couple of varieties like brown bread and multigrain but I’d rather the normal, regular sliced, white bread.” Well, there is a bread for every body.

Given that once upon a time there was only Modern Bread, today Kochi is breaking bread and how

Poultry farmers asked to increase vitamin D3 level in feeds

Poultry farmers in the district have been asked to increase Vitamin D3 level in feeds so as to reduce egg breakage.

A weather advisory bulletin issue by Agromet Field Unit of Veterinary College and Research Institute, Namakkal and Regional Meteorological Centre, Chennai said that the sky is expected to be cloudy with chance of scattered rainfall for the next three days.

The bulletin said that active northeast monsoon over the coastal area is likely to bring cloudiness and mild rainfall over the interior districts.

This will reduce the fogginess and raise the day and night temperature. The feed intake in poultry remains normal or slightly elevated. Hence with decreasing daylight, farmers should increase Vitamin D3 level in feed to reduce egg breakage.

The bulletin also asked groundnut cultivation to be carried out during the month . Also, 50 kg seed is required per acre of land that can be treated with *Trichoderma viride* before sowing.

Rooting for organic farming

Farmer lists pangs of sticking to organic ways



Organic farmer C.Narendranat at his farm in Perumkulam, near Kottarakara, in Kollam district. –Photo: C. Suresh Kumar

The State government is not making any efforts to promote organic farming, C. Nadrendranat, an Indocert-certified organic farmer at Perumkulam, near Kottarakara, has said.

(Indocert, or the Indian Organic Certification Agency, is a nationally and internationally operating certification body established in India. It is accredited by the National Accreditation Body, Government of India, as per the National Programme for Organic Production).

The many declarations of the government declare the ‘intention’ of the government to help people reduce dependency on farm products grown using chemicals nourishments. The fact is that there is very little encouragement for organic farming, Mr. Nadrendranat says.

The organic farm districts, mandalams, and panchayats announced by the government are only on paper. “So far, there is no Krishi Bhavan in the State which encourages organic farming. The use of chemical fertilizers and pesticides is on the rise,” he says.

“Now, only export-based organic farming is profitable. If the produce is for the domestic market, the farmer sustains huge losses,” Mr. Narendranat says.

Mr. Narendranat once tried tapping the domestic market by ‘becoming’ a roadside vendor once a week near the Kollam civil station complex. Repeated pleas to the authorities to allocate a bunk were turned down. He now sells organic products from his house at Perumkulam and has a handful of regular customers.

Mr. Narendranat nurses an unadulterated interest in promoting organic farming in the State. “It is the cost factor which discourages people from buying such products,” he says.

Special schemes sought

Farmers of organic products cannot even attain breakeven and this is where the government should intervene. Special schemes and packages are required, he says.

But Mr. Nadendranat is committed to promoting organic farming and he singularly does all work on his one-hectare farm.

He also religiously gets his farm organically certified every year.

“Not even 75 per cent of the cost is gained from the harvest, but organic farming is my obsession,” he says.

Narendranat, an Indocert-certified farmer, seeks earnest action on part of the State to promote organic farming.

Water released for irrigation from dam

Water was released from Vaigai dam to irrigate lands in Madurai district here on Wednesday.

Three hundred cusecs of water had been released in addition to the regular discharge for irrigation in Theni, Dindigul and Madurai, Sivaganga and Ramanathapuram districts. A total of 27,259 acres of land would benefit, said PWD officials.

The total discharge from the dam was 2,360 cusecs. The PWD officials appealed to farmers to use water judiciously and get better yield.

The water level rose by half a foot in Periyar dam owing to heavy downpour in its catchments and also at the dam site. The level stood at 133.5 feet in the evening which was 133.2 feet in the morning. The inflow into the dam was 1,111 cusecs and the discharge 1,640 cusecs.

Sharp showers rocked different parts of Theni and Dindigul districts, particularly hilly regions, in the evening. Kodaikanal, Vedsandur and Batlagundu in Dindigul district and Theni, Cumbum, Chinnmannur, Uthamapalayam and Gudalur in Theni district received minor to moderate showers.

Tips to overcome problems in cattle rearing

Lack of awareness on aspects of farm management in livestock hampers the full productivity of dairy animals. Some of the problems that are usually encountered in dairy livestock and their possible remedial measures are:

High mortality rate in calves and poor growth. Remedial measure to be taken up are colostrums feeding within an hour after birth, deworming, feeding antibiotics, early introduction to concentrate and greens (creep feeding).

Low milk yield

Main problems among milking animals are reproduction based problems - mainly anoestrus, repeat breeding, long calving interval, low milk performance and mineral deficiencies.

In such cases proper heat detection, feeding balanced rations and mineral supplementation, protection against thermal and ecto and endo parasitic infestation can help avert the problems.

The productive performance of a dairy farm is viable if cows calve every year and produce milk for at least 300 days with high production efficiency. If there are 70-75 cows they should all be in milking. Proper recording of body weight gain, physiological activities and milk production can help in judging the performance of individual animals. From this one can identify the poorly producing animals and undertake the remedial measures in time. The animals which do not respond to improved feeding and management should be removed.

Management

Milking management is very important task in dairy because it is the quality and the production of milk which matters most. Farmers should follow good milking management practices, especially cleanliness and hygiene at the milking place.

Practice regular milking hours as far as possible and equal milking intervals. After washing the udder with antiseptic like KMnO_4 and wiping it with a clean cloth, practise dry and full hand milking method followed by stripping.

Complete the milking within 5-7 minutes gently without much noise.

(Dr. Rajinder Singh is Sr Extension Specialist (animal sciences) Lala Lajpat Rai University of Veterinary and animal Sciences, Extension Center Rohtak, email: raja.udaybhar@gmail.com, mobile: 09416900788)

New feed for pearlspot

The Krishi Vigyan Kendra of the Central Marine Fisheries Research Institute has launched an exclusive feed for pearlspot (Karimeen), developed under a project on Climate Resilient Aquaculture (NICRA).

The feed contains 47 per cent protein, 6 per cent fat and other essential nutrients such as vitamins and minerals.

Non-availability of feed is a constraint in farming of pearlspot, a premium fish variety in Kerala. Farmers are forced to use locally available feed materials such as rice bran, broken rice and tapioca powder, which are not considered balanced diet for the fish.

Such practices affect production and quality. The new feed is available in five different grades at KVK sales counter of the CMFRI here, a release said.

Bill seeks to improve production of fish seed

The Kerala Fish Seed Bill, 2014 adopted by the Assembly on Wednesday seeks to enhance the quantity and quality of fish seed produced in the State by regulating its production, marketing and stocking.

The Bill which replaces the Kerala Fish Seed Ordinance, 2014 makes it mandatory for fish seed farms and hatcheries to get themselves registered and licenced for production of fish seed rearing and fish culture.

The State Fish Seed Centre and its regional centres to be established under the Act, will monitor the production, rearing, stocking, marketing, transport and import and export of fish throughout the State. The government has to nominate an expert to chair the centre which will have six other members including the Director of Fisheries and the Executive Director, Agency for Development of Aquaculture, Kerala (ADAK), representatives of fish seed farmers and hatchery operators, and experts in inland fisheries and marine fisheries.

The State centre will have the responsibility of identifying the waterbodies and ponds to be used for fish seed rearing and fish culture and declaring them as fish seed farms.

The Bill empowers the government to establish three or more regional laboratories for analysis of fish seed.

Common drugs affect plant growth: study



A study has found that the drugs we release into the environment are likely to significantly impact the growth of plants.

Drugs make their way into soil through a number of routes including via the use of sewage sludge as fertiliser and waste water for irrigation.

Even waste management systems cannot remove many compounds from the sewage.

By assessing the impact of a range of non-steroidal anti-inflammatory drugs, the research has shown that the growth of edible crops can get affected by even a fraction of these chemicals.

"The huge amounts of pharmaceuticals we use ultimately end up in the environment yet we know very little about their effects on flora and fauna," said Clare Redshaw from University of Exeter's medical school in Britain.

The research focused its analysis on lettuce and radish plants and tested the effects of several commonly prescribed drugs, including ibuprofen.

The team looked for changes in edible plants, assessing factors such as water content, root and shoot length, overall size and how effectively the plants photosynthesised.

Each drug was shown to affect the plants in very specific ways.

While drugs like diclofenac affected the growth of radish roots, ibuprofen had a significant influence on the early root development of lettuce plants.

"We have not considered the impact on human health in this study but we need to improve our understanding quickly so that appropriate testing and controls can be put in place," Redshaw concluded.

The study has appeared in the *Journal of Ecotoxicology and Environmental Safety*.

Mountains of plastic waste afloat in the oceans



APPALLING: Of the 269,000 tonnes of floating plastic waste, 35.8 per cent is in the North Pacific Ocean.

Believe it or not, nearly 269,000 tonnes of plastic comprising an estimated 5.25 trillion plastic particles are floating in the world's oceans, including the Bay of Bengal. This estimate does not take into account the amount of plastic waste found in the shorelines, on the seabed, suspended in the water column and that consumed by marine organisms.

The plastic particles are found in three size ranges — microplastic (less than 4.75 mm), mesoplastic (4.75-200 mm) and macroplastic (above 200 mm). The microplastic particles alone are in two size classes — 0.33-1.00 mm and 1.01-4.75 mm.

Of the 269,000 tonnes of floating plastic waste, the larger plastic items are predominant (an estimated 233,000 tonnes).

The results of a study by Marcus Eriksen (the first author) from the Five Gyres Institute, California, are published today (December 11) in the journal *PLOS*

ONE. The results are based on 24 expeditions undertaken between 2007 and 2013 across all the five sub-tropical gyres — North and South Pacific Oceans, North and South Atlantic Oceans and the Indian Ocean — coastal Australia, Bay of Bengal and the Mediterranean Sea.

With nearly 38 per cent of plastic particles and 35.8 per cent of plastic mass, the North Pacific Ocean is the most polluted ocean in the world. The two northern hemisphere oceans (North Atlantic and North Pacific Oceans) together account for 55.6 per cent of plastic particles and 56.8 per cent of plastic mass found in all oceans.

In the southern oceans, the Indian Ocean has far more plastic particles and mass than the South Atlantic and South Pacific Oceans put together.

The expeditions collected the particles using 680 net tows and also undertook visual surveys of large plastic debris.

Since the amount of plastic in shorelines, ocean bottom and suspended in the water column and consumed by marine animals was not taken into account, the authors state: “We stress that our estimates are highly conservative, and may be considered minimum estimates.”

If plastic waste discarded on land causes several problems including death of cattle due to plastic ingestion, the outcome is worse in the case of the marine organisms.

Plastic debris found in oceans has greater potential to degrade into smaller particles (through the action of light and weathering processes) and spread from the point of origin. Marine organisms and sea birds consume the small plastic particles.

According to the paper, since plastic has a greater propensity to adsorb persistent organic pollutants, organisms that consume the plastic particles end up consuming the pollutants, as well. The amount of microplastic in the oceans was estimated to be nearly 36,000 tonnes.

Compared to earlier studies, the scientists found the amount of microplastic floating in the oceans was far less. According to the authors, there is a 100-fold discrepancy in microplastic weight between this study and the earlier ones.

Missing small particles

The relatively smaller quantities of microplastic on the ocean surface reflect its loss or systematic removal. According to them, UV degradation, biodegradation by bacteria and other microorganisms, ingestion by marine organisms and settling to the ocean bottom due to increased weight may be some of the processes by which microplastic particles are removed from the sea surface.

Though the exact contribution from these removal processes is not known, one thing has become increasingly clear. Contrary to the earlier notion, many more marine organisms have been found to consume microplastic particles.

This could be either from direct ingestion of the particles or by preying on smaller organisms that have already consumed the plastic waste. This could lead to bioaccumulation of plastic in bigger marine animals and sea birds.

Unlike in the case of larger plastic waste floating in the oceans, removing the microsized ones that have settled to the ocean bottom is not feasible. This “reinforces the need for pre-consumer and post-consumer waste stream solutions to reverse this growing environmental problem,” they warn.

India seeks road map for commitments to climate fund

Concern as new draft text for talks is too mitigation-centric

While there is much jubilation that on Tuesday fresh commitments to the Green Climate Fund (GCF) have taken it nearly to the \$10-billion mark, concerns are being raised that the new draft text for negotiations is too mitigation-centric and financial commitments from developed countries are still below par.

Brandon Wu, senior policy analyst with Action Aid, told *The Hindu* that the new text, which would be finalised by the weekend, did not reflect the concerns of developing countries which wanted commitments on finance, technology transfer and adaptation. The push for countries to declare only mitigation targets implied that developing countries had lost the advantage when they go to Paris and they want financial commitments from the developed world for adaptation.

Mr. Wu, who is on the board of the GCF as one of the two civil society members, said while developed countries were saying that the pledges to the GCF were a real step forward, it was just a drop in the ocean. Developed

countries should say how much finances they would put forward, but that was not happening and they needed to raise \$100 billion by 2020 and that figure seemed very remote now.

It would be difficult for developing countries to announce their targets next year if they didn't know how much money was available, he said. The GCF would start distributing funds from next year but it was a small part of the finance puzzle.

During the high-level ministerial dialogue on climate finance, countries made fresh pledges to the GCF, including a much-awaited announcement from Australia, which pledged \$ 165 million. Developing countries made the strong point that the GCF needed much more funds and countries needed their mitigation and adaptation actions to be supported by funds.

China was forthright in its demand for a clear road map by developed countries on the annual amount of finance till 2020 and after that. Developed countries should fulfil their obligations under the U.N. framework convention on climate change, Beijing said.

Union Minister of State for Environment Prakash Javadekar called for a clear road map for funding while appreciating the contributions to the GCF.

Mr. Javadekar, in an attempt to infuse some life to the dying Adaptation Fund, lauded Germany's contribution of €55 million to the fund announced on Tuesday and suggested this could be the implementing arm of the GCF. He said the world would need to spend annually \$600 billion to \$1500 billion on climate actions and if there was no clear road map then outcomes would be sub optimal.

He called for global investments in India from developed countries and said they should collectively tap their markets and even pension funds or bond markets to complement funds for global climate actions. He said there should be more financial commitments coming out of Lima.

U.N. Secretary General Ban Ki-moon said countries which had not yet announced contributions to the GCF should do so with ambition and urgency and define a pathway to achieving the goal of \$100 billion by 2020.

No China-like climate deal with India: Todd Stern

Head of the U.S. delegation Todd Stern on Wednesday clarified that while there were expectations of a useful visit when President Barack Obama visits India in January, no climate deal is expected on the lines of that between the U.S. and China signed recently.

Responding to questions, Mr. Stern said he had met Environment Minister Prakash Javadekar on Sunday. India is an important player and he expected it to be a constructive one in the ongoing climate talks. The U.S. does a lot of bilateral work with India on clean energy and will continue doing so. It was also highly engaged with India on clean energy initiatives and will contribute to any goal they may have. However, he said, "We don't have anything in the works that's of the kind that we were involved with China."

He said he was with Secretary of State John Kerry when he visited China last February. The idea for a deal was conceived of in Mr. Stern's office and it was discussed with China's top leadership during the visit. The official deal was announced nine months later, he said and it was not something that was decided in two weeks.

He said, "We don't have kind of process with India but we have a substantial desire to work in a constructive and ramped up way with India on climate change and clean energy."

He said that Mr. Kerry would arrive in Lima on Thursday for a few hours since he was visiting the region and he would make some remarks on the U.S. commitments on climate. Mr. Stern said he agreed with the European Commissioner for energy and climate action (EU) Miguel Canete that the progress of the current negotiations was exceedingly slow and the text was being discussed line by line and new proposals were being introduced. However, he felt this was not shocking and this sort of this happened. However, it was not in any danger zone with respect to time and the new co-chairs would have some idea of how to take things forward. He said he would not describe himself as overly worried but he would concur with the notion that things on Tuesday and on Monday dragged on slowly.

He denied that Mr. Kerry was coming here in response to anything going on in Lima and this was a planned visit. Even if things were going swimmingly, he

would have come anyway, Mr. Stern pointed out. He didn't expect Mr. Kerry to get involved with the negotiations in any way, he added.

To a question he said some countries could work well even without binding treaties and some needed that for political will.

He said the talks would finish on time or extend by a day but it would end with goodwill.

Green brigade mounts pressure

The People's Climate March in Lima to urge countries to curb carbon emissions



Greenpeace activists arrange the letters delivering the message "Time for Change: The Future is Renewable" next to the hummingbird geoglyph in Nazca, Peru, on Monday. Photo: AP

Green groups hoped for a big turnout at a protest in Lima Wednesday aimed at heaping pressure on ministers haggling over a post-2020 deal to curb carbon emissions.

The "People's Climate March" in the Peruvian capital follows mobilisation on the eve of the September 23 summit in New York that revived climate change as a political priority.

Hundreds of thousands of people had turned out in dozens of cities to give the summit a push.

"We're expecting between 15,000 and 20,000 people," Bert Wander of campaign group Avaaz said of Wednesday's five-kilometre (three-mile) march.

The event would draw on support from indigenous people, environmentalists and anti-poverty activists, said Wander. Environment ministers, meanwhile, were to enter the second of a four-day meeting designed to apply political heft to the UN climate process.

The goal at the December 1-12 Lima talks is to clear the way to a pact in Paris in December 2015 that will assemble a war machine to fight climate change.

Operational from 2020, it would help ensure that global warming does not breach two degrees Celsius (3.6 degrees Fahrenheit) over pre-industrial levels.

This is a figure that scientists say is far safer than predicted trends. On current emission trajectories, Earth's surface will warm by some 4 C this century, a recipe for worse drought, floods, storms and rising seas.

Window for action narrowing

Wednesday's sessions were to focus on the thorniest issue: the format in which nations will set out promises for reducing greenhouse gas emissions.

Transparency "is the keystone" of the deal, providing the key element of trust, a European negotiator said. Big emitters are under pressure to put their pledges on the table by the end of the first quarter of 2015, hopefully providing enough time to finalise the historic pact in Paris next December.

Other issues that must be addressed are how to ratchet up emissions curbs if -- as seems likely -- the first roster of promises fails to meet the 2 C target.

Laughing gas can treat severe depression



Laughing gas may also help treat severe depression in patients whose symptoms do not respond to standard therapies (Source: Thinkstock images)

Used as an anesthetic in medicine and dentistry, nitrous oxide, or laughing gas, may also help treat severe depression in patients whose symptoms do not respond to standard therapies, finds a research.

“We believe therapy with nitrous oxide eventually could help many people with depression,” said principal investigator Peter Nagele, assistant professor of anesthesiology at Washington University School of Medicine in St. Louis.

The pilot study is believed to be the first research in which patients with depression were given laughing gas.

In 20 patients, who had treatment-resistant clinical depression, the researchers found two-thirds experienced an improvement in symptoms after receiving nitrous oxide.

Although the researchers evaluated the effects of the treatment only twice over a 24-hour period, they found the results encouraging.

Laughing gas is attractive because its side effects are limited and the most common are nausea and vomiting. It also leaves the body very quickly after people stop breathing the gas.

That is why researchers believe the improvement in symptoms a day later is real and not a side effect of the nitrous oxide.

“It is kind of surprising that no one ever thought about using a drug that makes people laugh as a treatment for patients whose main symptom is that they are so very sad,” Nagele said.

The study appeared online in the journal *Biological Psychiatry*.

A fertile mess



With the implementation of the nutrient-based scheme (NBS), the prices of diammonium phosphate (DAP) and muriate of potash (MoP) have gone up to almost four times the price of urea. As a result, farmers are overusing urea.

The fertiliser subsidy is budgeted at Rs 72,970 crore for 2014-15. There are also pending bills of Rs 30,000-35,000 crore that need to be cleared on account of this subsidy. Together, it amounts to more than Rs 1 lakh crore, more than 10 per cent of the Central government's tax revenue and a substantial pressure on the fisc.

Almost two-thirds of this subsidy comes from the unduly low price of urea, which is priced at Rs 5,360 per metric tonne (about \$86 per MT at an exchange rate of Rs 62 to the dollar). Globally, prices hover around \$300 per MT, although country-specific prices vary widely. In China, for example, the price is \$265 per MT, in Pakistan \$362 per MT, in Bangladesh \$207 per MT, in Indonesia \$148 per MT, and in the Philippines \$462 per MT. The Indian urea price is perhaps the lowest among large economies. This has led to the misuse of urea, which is being diverted to non-agri uses and smuggled to neighbouring

countries. There are no firm estimates of this, but insider guesstimates vary between 10-20 per cent of the urea distributed in the country.

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Against the generally desirable N:P:K (nitrogen, phosphorus and potassium) use ratio of 4:2:1, in Punjab and Haryana, the ratio was 62:19:1 in 2012-13. This reduces the grain to fertiliser response ratio, leading to much lower returns from fertiliser applications.

The rising subsidies and delays in the payment of these subsidies to specific plants have created an environment of uncertainty in the fertiliser industry. As a result, domestic investment in the fertiliser industry has lagged and imports have surged. For example, between 2000 and 2012, while Indian domestic production of nitrogenous fertilisers increased marginally from 10.9 million metric tonnes (in nutrients) to 12.2 MMT, China moved from 22 MMT to 50 MMT (see graph).

India has landed its fertiliser sector in a mess: rising subsidies and imports, lagging investment, highly imbalanced use of nitrogen, phosphorus and potassium, and diversion of urea to other countries and non-agricultural uses. This is largely a result of administered pricing and subsidy policies.

How can the Indian fertiliser sector be brought on track? Raising urea prices by, say, 200 per cent seems an obvious choice. But if it was so simple it could have been done long ago. Several committees have recommended a price increase but this has not been accepted by successive governments. Politically, it does not seem feasible that urea prices could be raised by 200 per cent in a single shot or even over a three- to five-year period unless accompanied by a substantial increase in the MSPs of basic staples like wheat and rice. Take the case of Pakistan and China. While their urea prices are way higher than India's, they also offer much higher MSPs for crops. In Pakistan, the MSP for wheat is \$320 per MT and in China, it is \$385 per MT, against India's \$226 per MT. The fertiliser cost in Punjab accounts for about 7 per cent of the MSP of wheat. If one adjusts for this, the Indian farmer is at a much disadvantaged situation. If the price of urea is raised by more than 200 per cent, taking it from \$86 per MT to, say, \$265 per MT — which is the price Chinese farmers are paying — but the MSP of wheat is also raised from \$226 per MT to \$385 per MT (what the

Chinese farmer gets), or to \$320 per MT, which his Pakistani counterpart gets, the Indian farmer would be more than happy. So, there is a way to make the price increase politically palatable. But given the National Food Security Act, 2013, which promises wheat and rice at Rs 2 to 3 per kilogramme, this MSP rise will lead to an explosive growth in food subsidy and a further distortion in cropping patterns, skewed in favour of wheat and rice. India may end up worse off. Another option is to simply transfer the cash equivalent of the current fertiliser subsidy to farmers. This works out to roughly Rs 5,000 per hectare (Rs 1 lakh crore subsidy divided by gross cropped area of about 20 crore ha). Farmers below the 4 ha holding size can be given cash at this rate and those above that holding size at Rs 4,000 per ha. Then the entire fertiliser sector can be deregulated, with imports flowing freely at zero import duty. Direct cash transfers can be conducted via Jan Dhan Yojana bank accounts and linked to the UID and Aadhaar. Politically, this is feasible and will lead to savings of at least Rs 10,000 crore in the fertiliser subsidy by simply stopping the diversion of urea to other uses and smuggling to other countries. It will also signal to farmers that they use nitrogen, phosphorus and potassium in a balanced manner, raising the productivity of fertiliser use. The only condition imposed on beneficiary farmers should be that they get their soil tested every three years. What would happen to our fertiliser industry under this brave new world of total decontrol? The probability is high that it would expand and prosper, provided urea plants are given gas at a uniform price (maybe a pooled price of import parity and domestically produced). It will incentivise them to be more energy efficient, get the best technologies and compete with those in China or elsewhere. There could be mergers and acquisitions within the urea industry, but overall, the industry will be liberated and unshackled from myriad controls. Industry captains today feel they are ready to walk this path to freedom. Is the government also ready?

Deliciously healthy: Dessert recipes to ward off the winter chill



Salted caramel cake pudding

I remember many a major fuss in my mom`s kitchen over some ingredients during winter time.

She insisted on using particular spices and ingredients like nutmeg, cloves, ginger, honey, cinnamon, mace powder and so on. She would say they were her winter warmers.

Little did I understand then but it became quite clear in the following years. For instance, ginger juice with honey to cure throat aches and to ward away unwanted cold or cinnamon, carom seeds and nutmeg tea to give you an extra dose of much needed warmth during the chilly winter days.

On this Foodie Trail, let me share a few winter recipes that will not only satisfy your sweet tooth but also ward off the cold.

Jaggery squares

Jaggery – 250 gm

Carom seed – 2 tsp

Clarified butter – 2 tbsp

Pinch of salt

Mixed nuts(pistachios, almonds and cashew)

In a pan, heat the oil, break jaggery pieces in it and simmer on medium heat.

When it melts, add salt and carom seeds. Mix well. Remove from fire, pour in a semi-deep steel dish. Sprinkle the nuts and let it cool to room temperature.

Gently cut square pieces and store in an airtight jar. Enjoy this healthy sweet treat after meals.

Salted caramel cake pudding

For cake

Eggs – 3

Sugar – 1 cup

Flour – 1 cup

Butter – 1 cup

Baking soda- 2 tsp

Chocolate powder – 1/2 cup

Walnuts – 4 tbsp

Raisins 2 tsp

For sauce

Custard powder – 1 tbsp

Milk – 1 cup

Sugar – 3 tbsp

Brandy – 2 tbsp

Sugar 2 tbsp for caramelizing

To bake the cake

Separate egg white and yolks in a pan. Whisk egg whites till soft peaks are formed.

Add sugar and whisk again. Add butter, egg yolks and baking powder and whisk till completely mixed.

Add chocolate powder and flour and blend well. Stir in nuts and raisins.

Empty the contents in a well-greased baking dish. Bake at 170 degree Celsius on low heat for 30 minutes.

When cake is risen, heat from top for five minutes.

Remove after checking if the fork comes clean once pierced in the cake.

Remove from the oven and let it cool.

For sauce

In a pan, put sugar on medium heat. Cook till it's caramelized to dark brown colour.

In a pan, heat milk and add pre-dissolved custard powder in cold milk and sugar.

Stir till the mixture thickens. Remove from heat and add the caramelized sugar immediately.

Pour over the cake in a serving dish and serve warm.



weather

Chennai - INDIA

Today's Weather

Thursday, Dec 11	
Max	Min
Clear	28° 21°
Rain: 0	Sunrise: 06:17
Humidity: 78	Sunset: 05:41
Wind: normal	Barometer: 1014

Tomorrow's Forecast

Friday, Dec 12	
Max	Min
Clear	28° 22°

Extended Forecast for a week

Saturday Dec 13	Sunday Dec 14	Monday Dec 15	Tuesday Dec 16	Wednesday Dec 17
28° 23°	29° 24°	29° 23°	27° 25°	27° 25°
Rainy	Cloudy	Partly Cloudy	Sunny	Partly Cloudy

THE TIMES OF INDIA

Get clear skin with flaxseed oil

While there are several which are known for their many beauty benefits - olive oil, lavender oil, jojoba oil, etc, flaxseed oil which is popularly known to cleanse the body from within is also used topically to get a smooth and clear complexion.

It not only detoxifies your body from within, but it also helps clear blemishes, reduce acne scars and pigmentation marks. Here are a few advantages of applying flaxseed oil.

It heals your skin

This is the season when you experience dry and itchy skin. Due to its high inflammatory index, flaxseed oil helps minimise skin irritation, redness and inflammation of any sort. Skin rashes diminish with topical application. If you are suffering from any sort of chronic skin conditions like persistent acne, rosacea or dermatitis, you can always take a drop of flaxseed oil on your finger and apply it with the tip of your finger on the affected area and blend it in.

Moisturises your skin

Another benefit of flaxseed oil is that it moisturises your skin and hydrates it from within. The essential fatty acids in flaxseed oil smoothens your skin's appearance and makes it super soft. You can either apply flaxseed oil on its own or maybe mix it with a bit of a light-weight moisturiser and apply it evenly on your face before you retire for the night.

Gives you an even skin tone

Constant exposure to sunlight and everyday stress takes a toll on your skin. To ensure that you have smooth, clear skin, take a few drops of flaxseed oil on your palm and rub it for a few minutes to warm it. Then, massage your face with your palm for a few minutes. You can either wash it off with lukewarm water or keep it on for the entire night to give you a radiant, glowing skin when you wake up in the morning.

Reduces dark circles

Another advantage of applying flaxseed oil is that it helps reduce dark circles considerably. Just a week of applying flaxseed oil under your eyes, will give you a clear skin around the eyes and make the area look brighter.

Other benefits of flaxseed

OIL Apart from clearing your skin, flaxseed oil also works as a cleanser for your body. If consumed on a daily basis, it clears your system, leaving you with a radiant, hydrated and a clean complexion.

Prevents skin cancer

While flaxseed oil is great to apply on an everyday basis, one of the reasons why beauty professionals around the world prefer this oil is because of its reputation of fighting free radicals. These free radicals prevent 'oxidative damage'. By including flaxseed in your diet, you can fight the free radicals which develop because of the constant exposure to sunlight and the harmful UV rays of the sun.

Clears bowel movement

One of the greatest advantages of flaxseed oil is that it helps your digestive system to function properly and smoothly. A spoonful of flaxseed early in the morning along with a glass or two of lukewarm water will keep your system clean and will help your food to digest better through the day.

Drink warm water with lime to stay healthy

We have all heard it somewhere or the other that drinking warm water with the juice of one lemon, is beneficial for health. Here is delving into the reasons...

Helps your digestive system

Warm lime water on an empty stomach early in the morning helps stimulate the gastrointestinal tract. Digestion improves, heartburn is reduced and it helps in the process of elimination.

Detoxifies liver

Lemon juice has citric acid, which helps the enzymes to function better. It also stimulates the liver and aids in detoxification.

Works on your pH level

The acidity in our body can be harmful and lemon water can help reduce this. Though lemon has citric acid, the nutrients and minerals in it are alkaline in nature. Citric acid is not a strong acid and so, is easily removed from our bodies by elimination processes like perspiration. Lemon, however, stimulates the formation of calcium carbonate that neutralises other strong acids in the body. This is helpful, especially if your diet is heavy in proteins like meat and cheese. Experts say lemon can help change the pH balance of the blood and can also help in dealing with urinary tract infections.

Strengthens your immune system

All citrus foods are a storehouse of vitamin C. This vitamin is known to fight colds and is good for your immune system. Lemons also have potassium, which stimulates brain and nerve function and controls blood pressure.

Clears and freshens your skin

Experts say that vitamin C is great for youthful skin, because it helps in the production of collagen. Its antioxidants revive dull skin and keep it healthy. Warm lemon water removes toxins from the blood stream. Also, diluted lemon juice, when applied to blemishes, can actually help lighten them.

Battles bad breath

Lemon juice battles bad breath by keeping bacteria away.

Aids in weight loss

Lemon juice in the morning fights food craving. Also, it has been found earlier that people who maintain an alkaline diet tend to lose weight more quickly than others.

Do not overdo the lemon bit

Do not overdo the lemon. Just because one lemon helped you lose two kilos, squeezing four in your juice will not help you lose eight! Lemon has corrosive properties too and your tooth enamel may suffer.

Note to remember:

Adding a little honey to your lemon juice makes it more palatable and also battles phlegm and helps rid your body of mucous.

Never:

Use bottled lemon juice. Only the natural lemon is beneficial.

Always:

Rinse your mouth with plain water after you drink lemon juice.

5 ‘unhealthy’ foods that are in fact healthy

Dieticians have instructed you to give up on these foodstuffs if you want to lose weight, yet the temptation makes you want to eat it. We give you 5 such unhealthy foods you may incorporate in your diet in a healthy moderation.

Butter: We are not instructing you load up on butter, but according to experts, naturally occurring saturated fats, like those found in butter, may actually be good to include in your diet in moderation when compared with processed fats like those found in margarine.

Cheese: Just like butter, cheese is also high in saturated fat and calorie content. But, it is also rich in nutrients, calcium, vitamin A, B12, riboflavin, zinc, and phosphorus. It also contains conjugated linoleic acid (CLA), a good fat, according to latest discoveries, found in animal protein and dairy that has been linked to cancer prevention.

Chocolate and whole milk: A glass of chocolate and whole milk has the perfect carbs to protein ratio (3:1) and is a good post workout recovery drink. It also replenishes bone-building calcium and sodium to restore electrolyte balance. Go with dark chocolate, if you are still unsure.

Coffee: It not only improves concentration and stamina, but a recent research has revealed that it helps prevent diseases like diabetes and Alzheimer's. Just don't overdo it, 3-5 cups are optimum as it may have some side effects like insomnia, jitters and anxiety.

Bananas: Although labelled as fattening, bananas sometimes play a healthy role when you are trying to shed pounds. They are rich in potassium and provide antioxidants, vitamin C and fibre. Banana eaters also experience a shift in dopamine, a neurotransmitter responsible for elevating your mood.

4 food items that burn belly fat

One of the body regions where we tend to put on more weight is the belly. While crunches and floor exercises help us get in shape, it's a Herculean task to get rid of the stubborn belly fat. Here are three food items that are a great help when it comes to getting your belly in shape...

Broccoli: This little green vegetable is rich in vitamin C and calcium, which increases the absorption of chemical elements in the body and boosts metabolism. The fibre and water content in broccoli is high, which means you feel full fast, won't indulge in overeating and are hydrated throughout the day. It's advisable to include broccoli in your meal at least four times a week. You can either steam or microwave the broccoli instead of boiling it for longer duration.

Cinnamon: This spice is loaded with antioxidants and has the ability to control your blood sugar. Thus, it directly affects the insulin level and controls your appetite. Once you stop craving for food, your body automatically uses up stored fat, especially from the mid-section. The best way to add cinnamon to your meal is by using it for flavouring your drinks. You can also add it to your lunch and dinner by cooking it along with the main course.

Avocado: While the fat content in avocado is slightly higher than that in other 'healthy foods', studies have found that the monosaturated fats in this fruit help in controlling cholesterol and blood sugar. They are also loaded with potassium, which helps in converting nutrients into energy. Avocados are also quite filling, as they have a higher fraction of fibre, vitamin B and amino acids. Try taking in avocados during breaks by substituting it with oily items.

Eggs: Whole eggs, especially its whites, are rich in protein. And for one to burn fat, it's important to add more protein-rich food to your diet as it keeps you feeling fuller for a longer duration. Also, eggs are low in calories, and studies suggest they are a good source of vitamin D too. You can start by adding egg whites to your breakfast.

Begin your meal with something sweet: Ayurveda

Menus put desserts at the end, but Ayurveda wants you to begin your meals on a sweet note...

Whether it's regular dalroti-sabji or a lavish eight-course feast, the sweets always have to wait till the end. In fact, the word 'dessert' originated from the French word 'desservir' which means 'to clean the table'. But who's complaining? Habitually, long after you have polished off a sumptuous meal and the brain has sent out satiety signals, there's always room for that baked cheesecake. However, while we have been habituated to satisfying our sweet tooth after a meal (the post-dinner walk is often an excuse to stop by at the local ice-cream vendor), Ayurveda argues that the sweet should come first. "The sweet taste acts quickly on the taste buds and saliva. Eating the sweet item first enables the flow of digestive secretions," says nutritionist Supriyaa Nair.

"If you eat sweets at the end of meals, you are slowing down your digestion." If the idea of gobbling a gulab jamun before roti-sabji doesn't agree with you, having even a bite or two of a sweet before vegetables and chapati or rice will help you absorb vitamins and nutrients better.

Besides, says Nair, eating dessert at the end means that the empty calories and sugar suppress the digestive fire, causing fermentation and indigestion thanks to the acid produced. It's not uncommon to experience bloating in this case.

FOLLOW ORDERS

A chapter in the Sushruta Samhita, one of the main texts of Ayurveda, deals with the order of tastes involved in a meal. According to it, you should have a sweet at the outset, something sour and salty in the middle, followed by pungent, bitter and astringent eats.

In a hungry person, a sweet also helps overpower the vayu (wind) in the stomach, while sour and salty tastes in the middle of the meal help stimulate the digestive fire in the small intestine. The pungent, bitter, and astringent taste helps subdue kapha dosh (earth). THE SWEET TRAP So, how did we fall into the trap of eating calorie-loaded sugars after a heavy meal? Macrobiotic nutritionist Shonali Sabherwal explains, "From a macrobiotic perspective, sugar craves sugar because it is yin energy." Each food group has an energy that is categorised as either yin (loosely classified as female energy) or yang (masculine energy).

"You feel expanded with sugar because sugar creates energy that is upward rising, and you want more of that. So, a simple carb craves sugar, which is why a meal loaded with simple carbs is usually followed by a dessert," she says. Also, heavy animal proteins found in eggs and meats (yang energy) are tough to digest, leaving you bloated and aggressive.

That's why, after a meaty meal, your body wants to balance out the dense yang energy by craving yin sugar.

Sabherwal suggests you challenge your sugar craving by seeking it in fruits and veggies (carrots, onions, onion cabbage, sweet potato and red pumpkin) rather than white sugar eats.

A MEAL IN ITSELF

Ayurveda also claims that the body cannot do without sweet altogether. It's imperative tissue development. When consumed in moderation, sweets are medicinal, even.

Dietician Pooja Makhija says that doesn't apply to refined sugar stripped of all nutrition. "Sugar desserts add load to the body, piling up calories which your body stores as fat since that is the only source of storage form it knows. A dessert is so full of calories, you'd rather have it as a meal in itself, preferably before a workout, so that you can burn off all those calories."

5 foods for your hair

Suffering from hair loss? Include these foods in your diet to maintain healthy mane.

Eggs: Rich in biotin, a B vitamin essential for hair growth and overall scalp health, eggs are great for hair. Include these protein-rich foods in your diet or you can even opt for a homemade hair mask containing egg and olive oil. Mix two egg whites with four tablespoons of olive oil. Make it into a thick paste and apply it on your hair. Leave it for 30 minutes and then rinse. Some other high-biotin foods include peanuts, almonds, wheat bran, avocado and low-fat cheese.

Spinach: A good source of folate and iron, this leafy vegetable can go a long way in inducing hair growth. Folate helps building red blood cells, which then carry oxygen to the hair follicles. Have spinach regularly as a part of your salad.

Bell peppers: The colourful red, yellow and green bell peppers are great source of vitamin C, which is necessary for hair health. Vitamin C is needed to ensure that there is enough iron in red blood cells to carry oxygen to hair follicles. It is also used to form collagen, a structural fiber required for hair follicles to stay healthy. Vitamin C deficiency can lead to dry, splitting hair that breaks easily.

Lentils: Along with tofu, soybeans, starchy beans, and black-eyed peas, lentils are a great vegetarian source of iron-rich protein, which is necessary for cell growth, including hair cells.

Sweet potatoes: Rich in vitamin A and beta-carotene, sweet potatoes are great for hair growth. Some other beta-carotene-rich foods like carrots, kale, dark green lettuces, asparagus, and pumpkin can also work wonders on your hair.

Two delicious ways to cook with apples

It's just turning cooler in Mumbai and the markets are offering the best of seasonal produce, which includes delicious red and green apples. Packed with fiber, iron and vitamins C and A, the ripe, crunchy fruit is an apt snack on its own. It's also used as a stuffing, in pies tarts and other desserts. Try these two ways out...

Easy apple pie: To make this classic dessert, make the pastry. Preheat the oven to 450 degrees F. Core and peel apples (around four cups worth). Mix ¼ cup sugar and a tsp of ground cinnamon. Layer the apples on a pie plate and sprinkle each layer with sugar and cinnamon. Add a little butter to the top layer. Cover with the pie crust. Bake in the oven for 10 minutes, reduce temperature and bake again for half an hour. Enjoy it warm.

Apple-raisin chutney: This makes for a nice side serving with everything — from bakes to sandwiches and gravies. To make it, mix 2 cups of warm water, half a cup of raisins, a little vinegar or lemon juice, honey and ground cloves. Keep aside. Saute onions in another pan, add some butter to it and cook on low heat for 20 minutes. Add in the earlier mixture and cook till apples are tender. Season with a little salt. Serve the chutney at room temperature.

3 new ways to enjoy popcorn

Popcorn has been dubbed the 'perfect snack food'. It's filling, has zero calories and can be carried anywhere.

And who says popcorn only has to be had in its moviegoer-snack avatar? You can actually cook with it, have it as a snack or a meal, with a salad.

Flavour it: Chop a little coriander into a bowl of piping hot, buttery popcorn. Squeeze some lime over it. You can also make a chilli-butter mix and drizzle it on the popcorn.

Make a salad out of it: Instead of the basic salad leaves, use popcorn as the salad base. Chop your bell peppers, diced celery, walnuts, chives and some cheese into this. Toss and serve.

Have it as dessert: Want something different for an aftermeal bite? Simply mix a small amount of red velvet cake into your popcorn; the result is delicious! You could also prepare caramel sauce to pour over popcorn or do a mix of chocolate chips and nuts with ice cream or a cinnamon-sugar mix, to sprinkle over it.

Recipe: Bruschetta Al Pesto

An Italian starter with pesto on ciabatta bread

Recipe Ingredients:

3 ciabatta bread

Pesto; basil leaves 50g

Pine nuts 100g

Parmesan cheese

450g mozzarella cheese

2tsp dried oregano

45ml olive oil

Freshly ground black pepper

Recipe Method:

Cut each bread diagonally into 12 slices. Cut the mozzarella into small pieces. Spread the sundried tomato paste on each slice. Arrange the cheese on the bread and put the slices on a baking tray. Sprinkle the herbs and drizzle the oil.

Bake in a preheated oven at 220 degree C for 5 minutes or till the cheese starts bubbling. Remove from the oven and allow to stand for a minute before serving.

Recipe: Garlic kheer

Here's the recipe for delicious and healthy garlic kheer.

Ingredients:

150 gms garlic (cleaned and slivered)

125 ml white vinegar

1 litre milk

80 gms sugar

4 to 5 threads of saffron

4 to 5 cardamom pods

Method:

1. Make slivers of garlic pods and soak it in vinegar for 20 to 25 minutes.
2. After 25 minutes wash it with hot water and boil it three times. Everytime you boil it, discard old water and fill the vessel with fresh water. This is to get rid of garlicky and vinegar flavor .
3. In a pot, boil milk with saffron and sugar and reduce it to half.
4. Add powdered cardamom seeds
5. Serve it cold

Recipe: Delicious tomato rice

Had a bad day at work? Here's a dish that will take away all your blues and lift your spirits.

Ingredients:

2 cups of boiled rice

1 tablespoon cumin seeds (jeera)

1 bay leaf

6 cloves

1 cinnamon stick, broken into half
2 cardamoms
2 finely sliced onions
1 tablespoon green chilli-ginger-garlic paste
12-15 mint leaves
1/2 teaspoon dried fenugreek leaves (kasoori methi)
1 teaspoon red chilli powder
A pinch of roasted cumin powder
2 finely chopped tomatoes
1 large red tomato blanched and pureed
1 tablespoon finely chopped coriander leaves for garnish
Salt to taste
1 tablespoon ghee (you can substitute it with oil)

How to prepare the dish:

- Heat oil or ghee in a vessel and saute cumin seeds. Add cloves, cinnamon and cardamoms and stir fry for thirty seconds.
- Saute the sliced onions for five minutes. Once the onions turn golden brown, Add green chilli-ginger-garlic paste, mint leaves and fenugreek leaves. Saute for four-five minutes.
- Add red chilli powder, cumin powder and mix. Add chopped tomato and tomato puree.
- Add salt as per taste and cook on low to medium flame, or till the gravy becomes thick.
- Reduce the heat and mix boiled rice.
- Remove in a serving bowl and garnish with fresh coriander leaves.
- Serve warm with curd raita or any curry of your choice.

3 things you need to add to your salad right now

Bored of eating the same salad all the time? Try some new additions

They are a burst of health and happiness on a plate - and the best part is that you can eat guilt-free! We all love salads, don't we? Here's what all ingredients you can add to your regular salad and make it interesting!

Go nutty

Add that crunch and sweetness to your regular salad with a hearty handful of nuts - get creative and combine almonds with spinach, the creaminess of the spinach and the earthy crunch of the almonds spells divine! While apples and walnuts go hand-in-hand, try teaming up your walnuts with cucumber for an extra bite. Jalapenos teamed with raisins and cashews is great, taste and texture wise, the spicy hit of the jalapenos meets the gooey sweetness of the raisins topped with some cashews for neutrality and balance!

Get seedy

Seeds - who knew that bird food would end up being so delish, not to mention healthy! With their natural oils, seeds have their unique taste. Try dry roasting some sunflower, pine and pumpkin seeds and add this to your regular lettuce salad. Even your fruit salads when topped with some salted seeds taste oodles better and get a salty twist. They not just lend your salad an extra crunch, but end up adding a mild fragrant flavour to it.

Dress well

Another thing you could get creative with is dressing. Make your own kitchen inspired dressing - add up things you like from the pantry and watch the magic happen in a bowl. You could try mixing some cool yogurt with crushed mustard seeds and salt and chilli powder to dress crisp green veggies. If you like Indian dressing, give your salad a desi tadka by heating up some olive oil, throw in a little cumin, whole red chillies and ajwain and drizzle atop your veggies. The intensity of the cumin takes your salad to whole new level as the chillies and ajwain lend it a different flavour.

So go ahead and get creative with your salads.

Recipe: Creamy banana pie

Mango may be the undisputed king of fruits, but the magic of banana is irresistible too provided the fruit is experimented well.

A creamy banana pie topped with the tempting caramel ice-cream is sure to guarantee a delightful desert experience this summer.

No need to shell out extra-bucks or wade through the traffic to enjoy your share. This is how you can get it right, and in the comfort of your home.

Ingredients:

Pie case

Flour -300 gm

Icing sugar - 150gm

Butter - 150 gm

Egg yolks - 2

Cold water - 50 ml

If you want the taste of the pie to linger on don't forget to balance the pie filling with the following ratio of ingredients. As you know the perfect blend of milk, sugar and banana can work wonders to the end product. Here's the secret to set it right.

How to prepare the filling:

1 large banana, sliced

2 cups of cold milk

½ cup instant

½ cup packages instant vanilla pudding mix

½ teaspoon ground cinnamon,

1 cup frozen whipped topping, thawed

¼ cup caramel ice cream topping.

Method:

For pie case, mix flour, butter, sugar, eggs and water and make dough. Rest the dough in freeze for 20 minutes. Roll it and shape it in a pie mould. Blind bake at 200 degree centigrade for 10 minutes. Next, place banana slices at the bottom of pie crust.

In a large bowl, combine milk, pudding mixes and cinnamon. Beat with wire whisk for a minute. Gently stir in whipped topping cream to make a pudding, then spoon mixture into pie crust.

Cover and refrigerate for 4 hours until pie is set. There you go! Your pie is

ready to be served...Oh yes, don't forget to garnish your banana delight with the slurpy and creamy caramel ice-topping!

And you are all set to dig in!

DECCAN Chronicle

Christmas specials: A time for tradition

Pavlova

Ingredients

- 300 gm egg white
- 600 gm icing sugar
- 5 ml vinegar
- 20 gm corn flour
- 1.5 kg fresh strawberries
- 500 gm fresh whipping cream
- 35 gm castor sugar
- Icing sugar for dusting

Method

Beat the egg whites with icing sugar until stiff peaks are formed. Fold in the corn flour and vinegar. Pipe the pavlova mixture on parchment paper. Pre-heat oven to 90°C and bake for an hour. Rest on the baking tray for 15 minutes and then let it cool. Beat the double whipping cream with castor sugar till stiff, top the center of the pavlova with whipped cream. Arrange the strawberries on top. If you wish, add another pavlova over the cream layer, dust with icing sugar and serve.

Honey roasted leg of pork

- **Ingredients**
- 2.5 kg pork leg with bone, fat scored
- 200 ml olive oil
- 25 gm wholegrain mustard
- 100 ml honey
- 10 gm finely chopped thyme leaves
- 15 gm cloves
- 10 gm salt
- 500 ml stock
- 10 gm black pepper

Method

Mix together olive oil, mustard, thyme, salt and pepper. Using a sharp knife, make slits lengthwise and perpendicularly every two inches on the pork leg. Place the pork on a tray. Now apply the above mixture and insert the cloves at the joints of the slits. Refrigerate for 30 minutes. Pre-heat the oven to 160°C. Cover the leg with aluminum foil, add some stock in the tray and bake for 30 minutes. Discard foil, increase the temperature to 190°C and cook uncovered until the skin becomes brown and crisp. Check the pork every 10 minutes (internal temperature should reach 70°C).

Eggnog

Ingredients

- 4 egg yolks
- 1 cup milk
- 1 cup cream
- ½ cup white sugar
- ½ tsp vanilla extract

- ¼ tsp nutmeg
- ¼ tsp cinnamon
- ¾ cup rum or brandy

Method

In a large saucepan, combine the milk, nutmeg, cinnamon and vanilla.

Cook on medium low heat until the mixture comes to a low boil, stirring occasionally.

In a large bowl, combine the egg yolks and the sugar, and beat or whisk until fluffy.

Add the milk mixture slowly to the egg and cook. Whisk it in until the ingredients are well incorporated.

Pour the combined mixture back into the saucepan. Cook it over medium heat until it becomes thick, which takes about three to five minutes.

Stir frequently; do not let the mixture boil this time. Remove the eggnog from the burner. Let it cool before serving.

Braised pork belly

Ingredients

- 360 gm pork belly
- 15 ml olive oil
- 5 gm garlic
- 5 gm cloves
- 5 gm star anise
- 5 gm cinnamon
- 50 ml white wine
- 25 ml apple juice
- 100 ml demi-glace powder, 150 ml stock
- Salt and pepper

- 10 gm onion
- 40 gm roasted potato
- 30 gm cabbage
- 15 ml red wine jus
- 20 gm butter
- 10 gm carrot
- 10 gm leeks
- 10 gm celery

Method

Clean the pork belly and make a spice mix with cinnamon, cloves, star anise and black pepper.

Rub it on the pork belly and keep it aside for six hours. Roll the belly and tie it with a thread.

On a hot pan, add olive oil and sear the pork on high heat. Once it's seared well, take it off the pan and add onion, celery, leeks, carrot and garlic

Deglaze the pan with white wine and add demi glace (mix the powder with a little water), apple juice and stock and bring to a boil.

Transfer the pork belly in a small container and pour the liquid and the sautéed mix of onions, celery, leeks, garlic etc. on it.

In a pre-heated oven, cook the pork belly at 140°C for about three hours till it's soft.

Serve hot with roasted potato, braised cabbage and red wine jus (wine that has been reduced over heat for a while).

Santa hat cookies	Chocolate cake trees	White christmas cookies
<p>You will need cookies with a cream-filling, fresh cream and strawberries. Whip the fresh cream and put it in a piping bag, you can also use a spoon. Pipe a certain amount of cream on the cookies, top it with a strawberry (the base needs to be cut so that it can sit on the cream) and add little cream on the strawberry to make it look like the end of a Santa hat. They are colourful and are a hit with children.</p>	<p>You'll need chocolate cake, coloured icing (preferably green or red) or sturdy lollipop sticks. Slice the cake in a triangle and then decorate it with icing in a zig-zag pattern to resemble the decoration on a tree. You can also add a few cherries for that festive look, then insert the lollipop sticks.</p>	<p>You will need cookies, white chocolate, red and green food colour. Melt the chocolate and let it cool. Dip half of the cookie in the chocolate and set aside to dry. Meanwhile, use a little of the white chocolate and mix it with the red food colour, do the same with the green colour as well. Use the green and red mix to make leaf patterns on the cookie and add three red dots (holly berries pattern, as seen in the photo)</p>

Implement Food Security Act by April, Paswan tells States

Import duty on vegoils set to be raised; sugar export sops to continue

Taking a tough stand Minister of Consumer Affairs, Food and Public Distribution Ram Vilas Paswan along with the Food Secretary Sudhir Kumar addressing a press conference in New Delhi on Wednesday Ramesh Sharma

New Delhi, December 10:

The Centre on Wednesday threatened to stop supply of subsidised foodgrain to Above Poverty Line (APL) families from April if States which have not yet implemented the National Food Security Act fall in line by then. Only 11 States and Union Territories (UTs) have fully or partially implemented the food law so far.

“If the rest do not implement the scheme by April 4, the Centre will not supply subsidised foodgrains to APL families who will have to buy them at the minimum support price,” said Food Minister Ram Vilas Paswan after a meeting with State Food Secretaries.

States such as Jharkhand and Odisha had expressed their inability to meet the April deadline but gave an assurance to have the NFSA implemented by June and August, respectively.

Uttar Pradesh is likely to begin operations in 64 districts by March.

Infrastructure set-up

“We will look into it, on a case by case basis. If a State has genuine issues in implementing the Act, then we will consider it,” said Paswan. The Centre also told States where the NFSA was underway to have infrastructure in place by February 15.

Among the States to have partially implemented the scheme, Himachal Pradesh and Karnataka had no system for doorstep delivery of rations while Aadhaar coverage across some of them, such as Chhattisgarh and Madhya Pradesh, were poor. Having a digitised list of beneficiaries was a challenge in many States including Rajasthan, Haryana and Punjab.

“Some States have infrastructural shortcomings and have been told to finish the digitisation process by February, otherwise only those beneficiaries identified by them will be covered,” said Sudhir Kumar, Food Secretary. Kumar also said that the process of identifying eligible households was entirely up to the States.

The NFSA aims to provide 5 kg of rice, wheat and coarse grains at Rs. 3/kg, Rs. 2/kg and Rs. 1/kg respectively per person each month and cover two-thirds of the population. States were given a year to identify beneficiaries and the April deadline marks a second extension since the scheme came into force last July.

Cabinet proposal

Paswan told reporters that the Agriculture Ministry had moved a Cabinet proposal to raise import duty on vegetable oils from 10 per cent to 12.5 per cent for refined oils and from 2.5 per cent to 5 per cent for crude edible oils.

The Food Ministry, he said, had recommended a hike up to 15 per cent for refined edible oils.

In the 2013-14 marketing year, India imported a record 11.82 million tonnes due to a spike in domestic demand.

PTI reports : He also said the Centre is examining the sugar industry’s demand for extending export subsidy in the current season to September.

“The export assistance scheme was for the two sugar seasons. Scheme was to be reviewed after the end of 2013-14 sugar year. The review process is on,” Paswan told reporters.

The subsidy was originally fixed at Rs. 3,300/tonne for February-March and the Centre had decided to review the quantum of subsidy every two months. Incentive was reduced to Rs. 2,277 for April-May and then again raised to Rs. 3,300 for June-July.

For August-September, the subsidy was hiked to Rs. 3,371.

It's bitter brew for Arabica growers on lower crop, price

Better prospects in Brazil and volatile global market don't augur well for exporters



Bengaluru, December 10:

As the harvest of arabicas – the mild and premium coffee variety – progresses in the key growing regions of Kodagu and Chikamagalur, growers are seen facing a double whammy this year.

Not only the pickings are lower than initial expectations, the recent decline in global prices on account of improving crop prospects in Brazil is seen impacting growers' realisations.

“The harvest is not as per our expectation. As it is the crop was not big; but midway through the harvest it looks the crop size will shrink further,” said N Bose Mandanna, a large grower from Suntikoppa in Kodagu, adding that harvesting could end by December-end.

Mandanna said the arabica crop could be lower by 20-30 per cent against initial estimates, impacted by the high incidence of white stem borer, berry droppings caused by excess rainfall and disease such as leaf rot and stalk rot among others.

The Karnataka Planters Association recently pegged this year's (2014-15) arabica crop at between 60,000 and 70,000 tonnes. Coffee Board officials said that the arabica crop could be lower than the post-blossom estimate of 1.05 lakh tonnes, but refused to quantify. The Board is expected to come out with its post-monsoon estimates in the next few days.

Volatile prices

Further, volatility in global prices is seen influencing domestic prices. Global prices for arabicas, which stood at \$2.7 cents per pound about a month ago, are now hovering around \$1.78 to \$1.80.

The farm gate price of arabicas has dropped to around Rs. 10,400 per 50-kg bag for Arabica parchment against Rs. 12,200-500 a few weeks ago, Mandanna said. Even exporters feel that the arabica crop size could be marginally lower than the initial estimates.

Ramesh Rajah, President of the Coffee Exporters Association, said as the crop is lower, exporters are hesitant to book orders though enquiries continue for Indian coffee.

Negative outlook

“The order books are down by half over last year. I don't think exporters have sold as heavily as last year. Exports will pick up next quarter,” Rajah said. “In the short-term, coffee does look negative,” Rajah said adding that the downward trend is largely in line with the bearish trend in other commodities.

In Tamil Nadu, the harvest of arabicas has just commenced. It has also been delayed by about a month due to the late blossom showers. In Andhra Pradesh, the Hudhud cyclone has impacted the coffee plantations in Araku Valley and the crop is likely to be lower by about 1,000 tonnes.

Coffee Board, in its post-blossom estimate, had pegged the 2014-15 crop at 3.44 lakh tonnes including 2.39 lakh tonnes of robustas.