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THE HINDU

## Kisan to provide accurate data on crop yields

To fasten payment of crop insurance claims to farmers, the Centre has launched a pilot programme Kisan, which will use satellite and drone-based imaging and other geospatial technology to get timely and accurate data on crop yields. The project envisages use of space technology and geo-informatics (GIS, GPS and Smartphone) technology along with high resolution data from UAV/drone based imaging for improvement in yield estimation and better planning of crop cutting experiments (CCEs), needed for crop insurance programme.

The Pilot Study is proposed to be launched in one district each of Haryana, Karnataka, Madhya Pradesh and Maharashtra during Kharif season of 2015 and two districts each of these States during Rabi season of 2015-16.

Once the Pilot Study is successful, it will be extended to the other parts of the country.

The KISAN project will be implemented by Mahalanobis National Crop Forecast Centre (MNCFC), an attached Office of Department of Agriculture, Cooperation & FW, in collaboration with ISRO Centres (Space Applications Centre, Ahmedabad & National Remote Sensing Centre, Hyderabad), India Meteorological Department, CCAFS, State Agriculture Departments and State Remote Sensing Centres. The centre also launched an Android-based app for collection of data of hailstorm.

An Android App, designed by ISRO (National Remote Sensing Centre, Hyderabad) has also been launched, which will help real time data collection about hailstorm occurrences along with photographs and geographical coordinates (longitude and latitude).

# ‘Farmer-friendly’ flower show to have glamour of ‘sandalwood’

*Over 25 farmers to be felicitated on each day of the show*

Visitors at a flower show organised by the University of Mysore at Kukkarahalli lake in Mysuru as part of Dasara festivities.

This year’s Dasara flower show is “farmer-friendly” and Kannada film actors will be supporting the cause of farmers by acknowledging their contribution and felicitating achievers in the horticulture sector.
Outstanding horticulture farmers will be identified and honoured in recognition of their dedication and hard work, and projected as ‘role models’ to fellow farmers for sustainable horticulture.

Over 25 such farmers will be felicitated on each day of the show for eight days. “Three to four farmers will be felicitated daily,” Senior Assistant Director of Horticulture Krishna Kumar told *The Hindu* on Sunday.

Expressing solidarity with the farming community, Kannada film stars will visit the show daily to felicitate farmers and cheer their achievement.

They will also promote their upcoming films.

Actors Diganth, Neenasam Satish, Sri Murali, Chandan (of *Love U Alia* ), Parvathi Iyer, singer Chandan Shetty are among those confirming their participation at the show, Mr. Krishna Kumar said.

In the wake of farmers' suicides, the department thought of bringing progressive farmers on a common platform and narrating their success story to public domain with the idea of encouraging farmers against resorting to extreme steps.

This year, many innovative displays had been planned at the show to make it more attractive and appealing.

Besides an entrance arch, there will be a flood of floral arrangements, mainly with roses, to beautify Kuppanna Park, the venue of flower show.

In addition to the famed Stone Chariot of Hampi being created using 1.5 lakh roses, over 45,000 roses would be used to create musical instruments and a pyramid using exotic variety of flowers.

Vegetables are being used to create the images of Goddess Chamundeshwari, Nandi and Mahishasura.

Meanwhile, a flower show has commenced at the Kukkarahalli lake.

The annual show by the horticulture wing of the University of Mysore is already drawing visitors.

In the midst of the sprawling lake environs, flower plants had been arranged at the park and along the lake bed. Even the foreground of Crawford Hall, the administrative office of the university, has been decorated by arranging flower pots. Even the garden had been spruced up.

## Andamans yield a sweet banana with orange pulp

Scientists at the Botanical Survey of India (BSI) have discovered a new species of banana from a remote tropical rain forest on the Little Andaman islands.

The species, *Musa indandamanensis* , was located about 16 km inside the Krishna Nalah forest in the island.

The scientists who have made the discovery describe it as a distinct global species with unique green flowers and fruit bunch lux (axis) thrice the size of a regular banana species.

“The new species is about 11 metres high, whereas as the usual banana species is about three to four metres high,” Lal Ji Singh, Head of Office, Botanical Survey of India, Andaman & Nicobar Regional Centre, told *The Hindu* .

The details of the new species were published in *Taiwania* , an international journal on taxonomy and life sciences recently. Mr. Singh said that the species was edible and very sweet. The tribal people on the island eat it. The fruit pulp is orange in colour, distinctive from the white and yellow colour of regular bananas.

Unlike the other banana species whose flowers are conical, its flowers are cylindrical.

Mr. Singh, however, pointed out that the number of plantains was very limited and the species needed conservation. “Since this newly discovered plant has a relatively big fruit lux, the genes from the plant can be very useful in boosting banana production in the country,” he said.

Unlike other common species, the seeds can be used for germinating new plants. “We have also introduced this banana plant species in our garden in Port Blair as part of our efforts to have ex-situ conservation,” the scientist said.

Approximately 52 species of banana are reported to occur in the wild across the world and 15 such species are reported to occur in India.

## Farmers given training in selection of seeds

Agriculture Department's Farmers Training Centre (FTC) oriented cultivators in Bhavani block on Friday through its Seed Village Training Programme, to ensure use of right seeds for full productivity.

### Right approach

Seed being the first and foremost input component, the programme envisaged sensitising farmers to the right approach at the outset since it cannot be corrected in the fields run.

Utmost care must be given for selection of seeds (certified and foundation seeds), according to Deputy Director of FTC Thirumoorthy.

Seed Certification Officer Sankar explained about the production procedures of certified and foundation seeds and the importance of using them, and Annathurai, Deputy Director - Seed Inspection, exposed farmers to the procedures involved in acquiring licence for sale of seeds for raising nursery seedlings.

Assistant Director of Agriculture, Bhavani block, R.Savithri explained about the importance of seed treatments, soil and water analysis, the application methods of macro, micro and secondary nutrients to the field crops and the plant protection measures for coconut.

Soil scientist of Myrada Krishi Vigyan Kendra, Gobichettipalayam, Sekar, detailed on the schemes operated at the Kendra.

## Turmeric auction fetches Rs. 1.10 crore

Turmeric was auctioned for Rs. 1.10 crore at Tiruchengode Agricultural Producers Cooperative Marketing Society on Saturday. While 'Virali' variety fetched a price between Rs. 6,869 and Rs. 9,210 per quintal, 'Kilangu' variety fetched a price between Rs. 6,339 and Rs. 8,112, and 'Panankali' fetched a price between Rs. 6,800 and Rs. 18,099 per quintal. About 2,500 quintals of turmeric was auctioned for Rs. 1.10 crore, a press release said.

Coconut kernals were auctioned for Rs. 2.10 lakh at the Mallasamudram branch of the Tiruchengode Agricultural Producers Cooperative Marketing Society on Saturday. While first quality kernals fetched a price between Rs. 68.15 and Rs. 74.35 per bag, second quality fetched a price between Rs. 36.95 and Rs. 47.75.

## Saving water through 'wick irrigation'

At a time when organic farming is gaining popularity in the State, there are now more options for farmers. 'Wick irrigation' is a latest technique developed by Kamalam Joseph, a scientist at the Centre for Water Resource Development and Management (CWRDM) in Kozhikode, with an aim to facilitating farming even when there is scarcity of water.

'Wick Irrigation' (termed Thiri Nana in Malayalam) reduces the water consumption for agriculture to a great extend. It is specifically designed for terrace cultivation, of mostly vegetables, in grow bags. A specially designed wick of 30-cm length and 1.5 inches width is inserted through a hole at the bottom of the grow bag. Half of its length goes up to the surface of the soil while the rest is inserted into a bottle containing water. The wick sucks up the water supplying only what is necessary for the plant.

The CWRDM had trained around 60 technicians from different parts of the State earlier in the year to provide expert help to those who wish to implement wick irrigation along with other irrigation and water conservation

methods. Satheesh Kumar, one such expert in Kozhikode district, said that it took around two weeks to exhaust one-litre water.

The experts have formed a water management task force to reach out to the prospective farmers all over the State. The task force members also give guidance in drip irrigation, aqua culture, Kitchen ponding, rain water harvesting and pisciculture. Kitchen ponding is the method of constructing a 1-metre deep pond near the kitchen for rearing fishes. Well charging is an effective method practised by the task force for rain water harvesting. Interested farmers can contact Santhosh Kumar on 9446695744.

## ‘Farm sector sure to gain from space tech’

Indian Space Research Organisation Chairman A.S. Kiran Kumar on Friday indicated that the country’s agriculture sector would increasingly reap the benefits of space technology in the coming years through various upcoming projects, including the Indo-US NISAR (NASA-ISRO Synthetic Aperture Radar) satellite.

Earth observation satellite NISAR is slated to be launched in 2020-21.

Inaugurating the 50th Foundation Day celebrations of the University of Agricultural Sciences-Bengaluru here, Mr. Kiran Kumar said NISAR would provide information about a place more frequently than older satellites orbiting the Earth at present. For instance, if the present satellites take 23 to 25 days to re-visit a particular spot and give the next round of information about it, NISAR would provide the repeat information in two to five days.

Such a higher frequency of getting periodical information would benefit many sectors apart from farming, he noted.

Among the objectives of NISAR are estimation of soil moisture, agriculture and forest biomass and estimation of glaciers, snow and possibility of landslides, he said.

Referring to the ongoing research into space technology that could help agriculture, he said “hyper spectral” studies were being undertaken to identify yellow rust disease in wheat crop through remote sensing.

Similarly, research was going on related to the use of microwave remote sensing. Mr. Kiran Kumar felt that the ongoing research regarding application of space technology for agricultural development was not enough. He called upon agricultural scientists to join hands with ISRO.

## Karnataka to announce special package for farmers today

*Rahul Gandhi to attend farmers’ rally at Haveli*

In the backdrop of crop loss and farmers’ suicides in Karnataka, the State government will announce a special package to famers either in the form of crop loan waiver or interest waiver on loans at a farmers’ rally, which will be attended by Congress vice-president Rahul Gandhi, in Haveri on Saturday.

Mr. Gandhi, who on Friday visited families of farmers who committed suicide in Mandya district, said: “We have some ideas on what has to be done for solving the farmers’ issues. The Chief Minister will announce it at a public meeting tomorrow [Saturday],” he said.

It is not known yet whether the government would announce the crop loan waiver scheme or waiver of interest on loans. A few days ago, the government announced waiver of interest on medium- and long-term on loans borrowed by famers from cooperative banks. So far, more than 500 farmers committed suicide across the State.

During his much-awaited visit that lasted for around five hours in Mandya, Mr. Gandhi met the kin of two farmers who committed suicide recently and held two closed-door meeting with Mr. Siddaramaiah, and a few Cabinet Ministers on the farmers' plight.

Following a demand from a large number of newly elected gram panchayat (GP) members, Mr. Gandhi told the Chief Minister to take steps to implement recommendations of K.R. Ramesh Kumar report on granting more power to GP members.

The State government has sought Rs. 3,850 crore relief from the Centre to provide compensation to farmers who had lost crops due to drought in 136 taluks.

But the Centre has not released a single rupee to Karnataka, Mr Gandhi said. "Prime Minister Modi has money to announce Rs. 1.25 lakh crore package to Bihar just before elections there. What has he done to Karnataka?" Mr. Gandhi asked, amidst huge round of applause from GP members.

## Farmers exposed to organic farming

Farmers of Thayanur were exposed to various aspects of organic farming at a training programme organised by the Regional Centre of Organic farming, Bangalore, in association with the Department of Agriculture, here on Thursday.

The programme was organised in the village adopted by P.Kumar, MP, Tiruchi, under the Sansad Adarsh Gram Yojana (SAGY). Chandra Prabha Bandari, Junior Scientific officer of Regional Centre of Organic Farming, which is engaged in popularising organic farming in the country, explained

the concept of organic farming, use of organic manures such as farm wastes, vermicompost and green manure. Green manure played a big role in sustaining soil health, she said. She elaborated on formation of model organic farms and on-farm compost preparation.

Mr. Kumar inaugurated the training and distributed soil health cards and organic farming technical guides to 61 farmers in the presence of R.Chandrasekaran, Joint Director of Agriculture.

As a follow-up, a demonstration on organic farming will be held in the village to sensitise farmers to how farm waste can be converted into useful necessary organic inputs.

## Achieving food security is the biggest challenge, says expert

K.M.L. Pathak, Deputy Director-General, Animal Science, ICAR, speaking at the convocation of KVAFSU in Bidar on Saturday.

K.M.L Pathak, Deputy Director-General, Animal Science, Indian Council of Agricultural Research (ICAR), has said that the biggest challenge before the country is how to achieve food and nutritional security of the world.

Talking to veterinarians in Bidar on Saturday, he said there was a need to alleviate poverty by producing more food that is safe, especially from animal origin.

“We need technological breakthroughs to achieve this against a shrinking genetic diversity of animals and their increasing global trade,” he said.

He was delivering the convocation address at the Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) in Nandinagar.

Availability of affordable food of livestock origin would go a long way in helping to overcome the challenge of chronic hunger and protein malnutrition, he said. According to him, livestock production needs to more than double in the developing world to meet the demand for meat and milk in the coming 20 years. There is a huge mismatch between demand and supply of food, he said.

He listed out new technologies such as cloning through nuclear transfer technology, exogenous growth hormones synthesised by bacteria that increase milk and meat yields, transgenic sheep and goat that express foreign protein in milk, and stem cell and recombinant DNA technology that could lead to improved fodder crops and better animal breeds, which were helping scientists address malnutrition issues.

Fish is a cheaper and easily available source of nutrition and we need to work on increasing production, he said. Karnataka however, is yet to fully exploit its potential in fisheries. It ranks number one in the country with inland fisheries resources but 10th in inland fish production, he pointed out.

**Updated education**

Globalisation and climate change have forced a restructure in veterinary education. “We need to introduce newer areas like nuclear medicine, cryosurgery, bioinformatics, value addition to indigenous dairy products, fishery biotechnology, and others in the curriculum. We also need more undergraduate degree courses in livestock business management, animal biotechnology, food science and technology and MBA in related fields,” he said.

He asked the universities to use IT to improve the quality of education. “We need campus-wide networks, virtual lectures and digital libraries, online programmes. There is a need to work with overseas universities in this regard,” he said.

He said the KVAFSU should open a distance education mode.

The university should focus on research to create disease-free zones, development of diagnostic kits, wildlife research, social problems like stray dog menace, value addition and reduction of post harvest losses, and making farming more remunerative, he said.

Governor and Chancellor Vajubhai Vala, Vice-Chancellor C. Renuka Prasad, members of the board of management, officers and others were present.

***We need to introduce newer areas like nuclear medicine, cryosurgery, bioinformatics, value addition to indigenous dairy produce and fishery biotechnology, in the curriculum K.M.L Pathak Deputy Director-General, Animal Science, Indian Council of Agricultural Research***

## Farmers evince interest in alternative crops: Collector

A total of 77,705 hectares have been brought under cultivation of various crops in the district, so far, during the current crop season, according to the District Collector V. Dakshinamoorthy.

Paddy transplantation is in progress using special machine in 85 hectares in Pallipalayam, Senthamangalam, Erumapatti, and Namagiripettai blocks.
Paddy transplantation using traditional method is in progress in 4,200 hectares in the blocks.

Cotton crop is in harvesting stage in Namagiripettai and Erumapatti blocks, he said, while addressing farmers' grievances day meeting here recently.

Cholam, Makkacholam, Thuvarai and cane, too, are in an advanced stage.

He said that all the primary agricultural cooperative societies, agricultural extension centres, and private concerns in the district possessed adequate stock of seeds, fertilizers etc for supplying to the needy farmers any time.

Of late, the farmers of the district who were depending on the traditional crops have started evincing interest in alternative crops such as pomegranate, onion, vegetables, coriander etc.

The Collector called upon the farmers to get all the needed information on the latest cultivation techniques of the alternative crops from the Horticulture Department officials in their respective blocks.

The Horticulture Department has brought out a brochure containing the details of the cultivation techniques of crops such as vegetables, fruits, flowers and the farmers could collect the same from the officials. The Agricultural Engineering Department has proposed to set up integrated agricultural extension centres under National Agricultural Development Scheme in Namakkal, Namagiripettai and Pallipalayam blocks.

The centres will have the offices of agriculture, horticulture, agriculture marketing, and agricultural engineering under one roof.

## New techniques, scientific approach will attract youth to agriculture: Minister

*Agriculture Department ready to extend all possible help*

Only inclusive economic development adopting new techniques and a scientific approach will attract youth to agriculture. At a time when farmers are combating climate change, global warming and scanty rainfall in their bid to provide food security, it is imperative that younger generation is drawn to agriculture, Housing and Agriculture Minister R. Vaithilingam said here on Saturday.

Addressing a workshop on enhancing capacity building of rural youth in agriculture organised by the Department of Agriculture, Tamil Nadu Agriculture University, Indian Institute of Crop Processing Technology and the M.S. Swaminathan Research Foundation, Mr. Vaithilingam observed that the aim was to attract youth to agriculture and allied activities and retain

their interest by making them understand that scientific way of farming would pay rich dividends.

This was the time to undertake the exercise and the youth must relish the joy of undertaking farming in consonance with nature. We were endowed with a youthful and knowledgeable population that must be converted into a potent agricultural weapon to deal with food requirements of the multitudes, he said.

Stating that the nation has varied climate conditions to suit several agricultural and animal husbandry demands, the fact that our farmers were doing agriculture in small, individual landholdings with unorganised marketing methods prevented bountiful agricultural income. The State Government was particular that productivity must grow and the individual revenue need to multiply to make farming profitable, Mr. Vaithilingam said. Post harvest value addition must be resorted by adopting proper techniques for maximising gains from fields. Today's youth could achieve these aims and it was there where their utility value in agriculture increased, he said adding that the Department of Agriculture would extend all help to the willing youth.

Director of Agriculture M. Rajendran, Collector N. Subbaiyan, MLAs M. Rengasamy and M. Rethinasamy, Director of the Indian Institute of Crop Processing Technology, K. Singaravadivel, Mayor Savithri Gopal, former Vice-Chancellor of the TNAU K. Ramasamy, as also N. Parasuraman and S. Jagan Karuppaiah of the MSSRF spoke.

## Pulses will be most affected by weak monsoon: report

Deficient rainfall during the monsoon has the highest impact on agricultural productivity in Karnataka and Maharashtra which have low irrigation cover (18 per cent to 34 per cent of crop area), according to a Crisil Research report.

Based on a DRIP index (deficient rainfall impact parameter), the report said that pulses such as arhar (pigeon pea), jowar (sorghum) and soya bean will be the most affected in Karnataka.

It said "DRIP scores are naturally high for Maharashtra and Karnataka" owing to low irrigated area to the total crop area ratio. The irrigated area to cropped area ratio in Karnataka is 34.3 per cent, it said.

Crucial crop such as pulses (toor dal) has been badly affected because of dry spells in Karnataka, Maharashtra and Uttar Pradesh, which are the key growing areas, Crisil, a rating agency, said in its October report.

The report, which covered the rainfall from June to September in five States, has seen a rainfall deficiency of nearly 20 per cent in Karnataka).

The situation is most precarious in Maharashtra and Karnataka, where reservoir levels, as of October 1, 2015, were 43 per cent below normal. U.P., Maharashtra and Karnataka account for close to 30 per cent of India's kharif foodgrain production, it said.

"The impact of a monsoon shock is accentuated due to high vulnerability of the farm sector stemming from disproportionately high dependence on agriculture income, high indebtedness and farmer suicides, low irrigation buffer and poor crop insurance cover," the report said.

***'Deficient rainfall during the monsoon has the highest impact on agricultural productivity in Karnataka and Maharashtra'***

## NHRC alarmed over pesticide levels in food samples

According to a Union Agriculture Ministry report, harmful chemicals are present in alarmingly high doses in food items across the country, with the highest number of failed samples being that of vegetables.

There has been an almost two-fold increase in the number of vegetables, fruits, meat and spices samples containing pesticides above the permitted

level in the last six years, suggests a report by the Union Ministry of Agriculture.

The report has caught attention of the National Human Rights Commission (NHRC), which has taken suo motu cognisance of the matter, while pointing out that any food article injurious to public health is a potential danger to the fundamental Right to life.

Citing Supreme Court's rulings, NHRC member Justice D. Murugesan said over the weekend that the right to food was a fundamental Right to life guaranteed under Article 21 of the Constitution.

"The enjoyment of life and attainment, including right to life and human dignity, encompasses within its ambit availability of articles of food without insecticides or pesticides residues, veterinary drugs residues, antibiotic residues, solvent residues, etc."

The NHRC has now issued notices to the chairperson of the Food Safety and Standards Authority of India, Secretary of the Union Ministry of Food Processing Industries, and secretaries in charge of food and agriculture in all States.

All of them have been asked to inform, within eight weeks, about the action taken to minimise residue level in vegetables, foods, meat and spices.

Justice Murugesan said that though it was the paramount duty of the State and its authorities to achieve an appropriate level for protection of human life and health, a fundamental right, reports of rampant use of pesticides continued to pour in.

According to the reports, harmful chemicals are present in alarmingly high doses in food items across the country, with the highest number of failed samples being that of vegetables.

The situation is reportedly said to be more alarming in New Delhi and Mumbai.

Of the 629 samples analysed in the national Capital, 223 reportedly contained residues while 20 of them had levels above the permitted residue level.

Among the 1,149 samples collected in Mumbai and Kolkata, 352 contained residue, while 22 reported levels above the permitted.

## Scientist of famed high-yielding tomato variety honoured

The scientist, who played a key role in developing the country's famed high-yielding tomato variety *Arka Rakshak,* was honoured with a national award on the occasion of the University of Agricultural Sciences-Bengaluru's 50th Foundation Day celebrations here.

A.T. Sadashiva, head of vegetable crops division of the Indian Institute of Horticultural Research, who headed a team of researchers which developed *Arka Rakshak* variety, was presented with the Dr. Kalayya Krishnamurthy National Award for the Best Agricultural Research Award of the UAS-B.

The variety has created waves in the horticultural sector as several farmers have got yields ranging from 19 to 20 kg a plant, under open-field conditions. According to Dr. Sadashiva, this variety reduces the cost of cultivation by 10 to 15 per cent in terms of expenses of fungicides and

pesticides, as it has resistance to leaf curl virus, bacterial wilt and early blight. *Arka Rakshak* has been getting inquiries from the U.S., France, Vietnam, the Netherlands, Mauritius, Zimbabwe, South Africa, Pakistan, Nigeria, Malaysia and Taiwan, he told *The Hindu* . It is learnt that the Centre has decided to ask the National Seed Corporation to get the seeds from the IIHR and supply to these countries.

## New variety of paddy yields good returns

Agriculture officials inspect the paddy field at Balasamuthiram near Palani in Dindigul district.

Farmers in Palani area are betting on a new variety of paddy, CO-51, thanks to high tillers and large quantum of grains in each tiller raised on a trial field. “The crop raised on the trial field is ready for harvesting. I expect to get 12 tonnes,” said S. Manoharan, a farmer who has raised this variety on six acres at Balasamuthiram village. “Unlike other varieties with a gestation period of 140 days, this new variety is ready for harvest in 105-110 days. I not only save 30 days but there is also reduction in production cost, use of water, fertilizers and other inputs,” he said.

Even if there was a delay in transplantation owing to delay in release of water or late arrival of monsoon, the crop could be harvested. Such delays would have adverse effects on other varieties of paddy.

Above all, CO-51 was tolerant to blast disease that affected yield drastically. It could withstand adverse weather conditions, he said.

While his crops stood erect, paddy crops in nearby fields were battered down by the recent rain. His fields have become a model farm as many farmers come and inspect it.

Having impressed by the successful trials, Agriculture Department officials plan to procure his entire produce for multiplication and distribution. The procured grains will be processed at a seed processing unit and distributed to farmers for multiplication. Though farmers in Virudhunagar district had already placed orders for the seeds, priority would be given to farmers in Dindigul district, said M. Thangasamy, Deputy Director of Agriculture.
'We received breeder seeds from Tamil Nadu Agricultural University and distributed them to farmers for field trials. The system of rice intensification (SRI) method has helped in increasing the yield. The new variety is well suited for 'kuruvai,' late samba and 'navarai' seasons," he said. To maintain physical purity in grains, farmers should remove 'rogue' (other variety of paddy) from the trial field. Training would be imparted to workers to identity other varieties.

Failure in detecting the foreign variety would affect the seed quality, said Assistant Director Suruliappan.

Adoption of latest technologies, maximising use of organic and green manure and split application of chemical fertilizers were behind the farmer's success, he added.

Palani, Athoor, Batlagundu and Nilakottai blocks are the major paddy producing centres in Dindigul district where paddy has been raised on 20,000 hectares.

***Unlike other varieties with a gestation period of 140 days, this new variety is ready for harvest in 105-110 days***

## Adopt scientific techniques, farmers told

An agricultural awareness programme and Kshetrotsava was held for farmers at Brahmavar in Udupi district on Friday.

K.M. Udupa, Managing Trustee of Bharatiya Vikas Trust, said on Friday that farmers should use scientific farming techniques to increase their produce.

He was speaking at the inaugural function of the one-day agricultural awareness programme and “Ksehtrotsava” for farmers, organized by the Zonal Agricultural and Horticultural Research Station (ZAHRS) at Brahmavar in Udupi district.


Only 25 per cent of farmers in the country were following scientific farmers. The agricultural sector had seen its heyday during the Green Revolution in the 1960s, which had made the country self sufficient in foodgrain production. But the scenario was changing, he said.

The Union and State governments should provide minimum support price to all agricultural produce. This would help the farmers, Mr. Udupa said.

Presiding over the inaugural function, C. Vasudevappa, Vice Chancellor of University of Agricultural and Horticultural Sciences (UAHS), Shivamogga, said it was essential to give farmers confidence so that they did not commit suicide.

The government provided financial incentives to industry but hesitated to provide the same to agriculture. Though the university had started a Diploma in Agriculture at ZAHRS, there were very few local students. “We require at least 60 per cent of local students to start an agricultural college here,” he said.

Mallika Balakrishna, Arun Shetty, Gopi K. Naik, Zilla Panchayat members, Saraswati Naik, President of Chantar Gram Panchayat, Nityananda B.R., President of Varamabally Gram Panchayat, and others were present. An exhibition of various varieties of paddy, cashew, and agriculture equipment, was held at the venue.

## Farmers advised to be wary of pest attack on groundnut

With the groundnut cultivation season on in Vellore district, the Agriculture Department has issued an advisory for farmers to take up control measures for groundnut leaf miner attack.

Officials said they were asking farmers to take up precautionary measures as leaf miner pest regularly attacked groundnut crops. “As of now, the incidence is very less. But we are informing farmers on the control measures through our block level field officers,” an officer said. Around 32,000 hectares are under groundnut cultivation this kharif season, he said.

The department has told farmers about the symptoms of damage caused by the pest attack, how to identify the pest and take up control measures. Severely attacked fields will look burnt from a distance, R. Jayasundar, joint director of Agriculture, Vellore said in a press release.

On identifying the pest, the official said the eggs are shiny white and are laid singly on the underside of the leaflets, while the larvae is green in colour

with dark head and the adult is a brownish grey moth, 6 mm long with 10 mm wing span.

Farmers have been asked to set up light traps – 12 per hectare, spray neem seed kernel extract and apply any one of the recommended insecticides such as dimethiate and malathion for managing the pest, he added in the release.

***Around 32,000 hectares are under groundnut cultivation this kharif season***

## 'Cashew appropriate alternative to tobacco'

Can cashew crop an appropriate alternative to tobacco? The answer, according to horticulture expert, A.B. Patil, who is engaged in extension activities, is yes. In the present context, the crop can be a morale booster to farmers in rain-dependent land, he said, at a programme on promoting cashew cultivation at the College of Horticulture here recently.

Especially in Mysuru which is one of the largest producers of tobacco in the State, the crop can emerge as an ideal alternative to tobacco, he suggested.

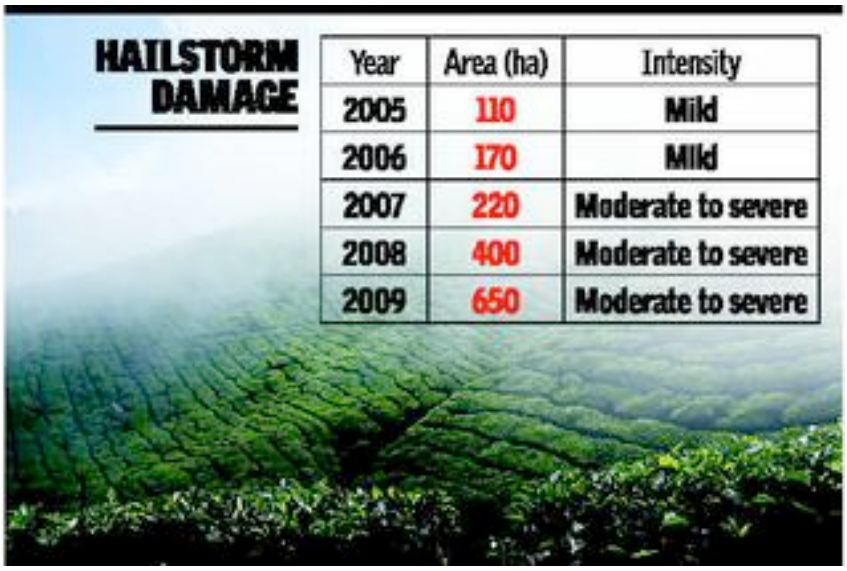
By 2020, India has to reduce tobacco cultivation as it is a signatory to the Framework Convention on Tobacco Control (FCTC) and therefore it is under obligation to bring down the production. India is among the 150 countries that are signatories to the FCTC, sponsored by the World Health Organisation (WHO). Anti-tobacco activists have urging tobacco farmers to switch over to other crops.

Tobacco is cultivated in about 1 lakh hectares in Mysuru district by over 45,000 farmers. At least, 80 per cent of the tobacco grown in Mysuru is exported. An average price for 1 kg of tobacco in Mysuru market is around Rs. 130 and the average yield per acre is around 600 to 700 kg.

More than 1 lakh small and marginal farmers in Mysuru, Hassan and Chamarajanagar districts are dependent on Flue Cured Virginia Tobacco

(FCV) crop for their livelihood. Apart from farm families, over 4 lakh farm workers are depending on the crop.

## Climate-change threat for tea estates




Increasing incidences of pest outbreaks, prolonged periods of drought, change in the pattern of rain distribution, and rising number of hailstorms are harbingers of climate change for the already struggling tea industry sector.

“Climate change will definitely have a great impact on tea ecosystems and affect photosynthesis and crop productivity. However, the effect will be different for each region,” says the paper Climate Change and its Impact on Tea Plantations by B. Radhakrishnan, director, Tea Research Foundation under the United Planters’ Association of South India.

### Nilgiri plantation

The paper said that analysis of data on the impact of weather change on the Nilgiri tea plantations showed no change in the quantum of rain received.

However, its distribution pattern had changed. The change in pattern was “drastic,” the paper said.

The increase in temperature over the plantation area had risen 0.5 Celsius; the number of dry days had shown an increase and frost and hailstorm damage to standing crop was seen in more places, the paper said.

Both protracted dry periods and untimely rain hit crop productivity. Untimely rain hindered sunlight, resulting in increase in incidence of diseases such as blister blight and grey blight. Untimely rain also intensified attacks by red spider mite and tea mosquito, which favoured wet conditions.

The paper pointed out that rising level of atmospheric carbon dioxide and increasing temperature were the two most visible and "incontrovertible manifestations of climate change." Measures to mitigate climate change impact include better planting materials, improvement in organic matter, soil and water conservation measures and establishment of vegetative barriers.
"Conservation of biodiversity, especially in terms of crop plants and shade trees is a must," the paper recommended as it called for "a drastic change in shade policy in tea" in which both temporary and permanent shade trees are "inevitable" at recommended spacing.

***Change in rain distribution pattern drastic, says a paper on impact of climate change***

## Veggie prices seen rising on short supply

**Growing prices** (Horticorp price Rs./Kg)

| | |
|---|---|
| Nendran banana | 29 |
| Bhindi | 38 |
| French beans | 40 |
| Vegetable cowpea | 43 |
| Tomato | 28 |
| Ginger | 55 |
| Green chilly | 28 |
| Potato | 25 |
| Big onion | 52 (Pune) |
| Big onion | 42 (TN) |
| Cabbage | 23 |

After a lull of about a month, vegetable prices are seen rising on short supplies attributed to heavy rains in vegetable-growing areas of Tamil Nadu.

Vegetable wholesaler N.H. Shameed said vegetable arrivals had gone down considerably for a week now. He said vegetable suppliers had attributed the reduced arrivals to rains in the neighbouring State where crop operations had been hit by the weather conditions.

Sources in the Kerala State Horticultural Products Development Corporation (Horticorp) said there was shortage of produce coming in from places such as Nagercoil in Tamil Nadu, where heavy rains had been reported.

The rising prices were mostly reflected in vegetable cowpea, bhindi, beans and carrot, said the wholesaler. He said this week most of the vegetables were being sold about Rs.5 to Rs.6 higher than a week ago. Vegetable cowpea was selling for Rs.45 a kg in the retail market; bhindi costs Rs.40; best quality French bean costs Rs.50 a kg. The price of carrot is up by about Rs.5 a kg at Rs.42 a kg in the retail market.

At the same time, the arrival of the red variety of big onions from Tamil Nadu has helped cool the price of the bulb, though the premium quality sourced from Pune continues to sell for over Rs.50 a kg in the retail market. The Tamil Nadu variety sells between Rs.35 and Rs.40 a kg.

Kerala sources most of its imported vegetables from places such as Ottamchatram, Coimbatore, Ootty and Mettuppalayam. These centres supply produce such as green chilli, bhindi, beans and snake gourd. Karnataka is a source for tomato, cucumber, cabbage and beans while Andhra Pradesh is a source for ginger, lemon and pickling lemon. Pulianpetti and Sathyamangalam are sources of vegetable cowpea, bhindi and cabbage.

Horticorp sources said the availability of locally-grown vegetables had visibly increased.

## Farmers show interest in cashew cultivation

Even as emphasis is being laid on promoting substitute crops for making farming sustainable, especially in the light of farmers' suicides, several farmers from old Mysuru region have shown interest in taking up cashew cultivation, which is being promoted as a "workable" option.

Farmers from Kodagu and Mandya too had shown enthusiasm to switch over to cashew cultivation, adopting modern and scientific practices.

As many as 125 farmers from Mysuru, Mandya, Chamarajnagar, Hassan and Kodagu districts attended a programme on cashew cultivation at the College of Horticulture here recently and collected details on the advantages of cashew cultivation from scientists, experts and cashew farmers.

Karnataka Horticulture University Vice-chancellor, D.L. Maheshwar, said that cashew cultivation will become a suitable alternative crop in the years ahead as it can be grown in areas which receive deficient rains.

“In the next five to 10 years, I am sure Karnataka will become one of the major producers of cashew in the country,” he said.

He advised cashew growers to constitute growers’ groups like coffee and arecanut growers to ensure better price for their produce.

He called upon the Karnataka Cashew Development Board, the Cashew Research Board and the Directorate for Cashew and Cocoa and the Department of Horticulture to come up with schemes for small and medium farmers to encourage cashew cultivation.

**Growers speak**

On the occasion, cashew grower from Puttur, Subash Rai, advised farmers to take up cashew cultivation without any doubts about its sustainability and said he would extend all possible help in this part of the region.

Giving valuable suggestions on cashew cultivation, Mr Rai narrated his experiences as a cashew farmer and how he made it possible with hard work and dedication. Another cashew grower, Ramesh Kikkeri, spoke on value addition to cashew cultivation and advised farmers to work in fields for at least eight hours to reap a rich harvest.

***Farmers from Mysuru, Mandya, Chamarajnagar, Hassan and Kodagu districts attend programme on cashew cultivation***

## Rice productivity

*Funds sanctioned*

A total of Rs.81 crore has been sanctioned for a programme to improve rice productivity in the State during the current financial year under the Rashtriya Krishi Vikas Yojana (RKVY).

The amount has been sanctioned to complement the subsidy under the Comprehensive Development of Rice programme and the Sustainable Development of Rice programme 2015-16, which is being allotted Rs.15,000 per hectare, said a posting on the Department of Agriculture website. An additional Rs.45,000 per hectare will be given away as input subsidy for a total area of 1,80,000 hectares during 2015-16 under the RKVY.

The top districts that will be covered under the programme are: Palakkad (72,000 hectares); Alappuzha (36,000 hectares); Kottayam (16,000 hectares); and Thrissur (19,000 hectares).

## Deficiency of rainfall may hit rural income

Even though deficiency of rainfall is likely to impact rural economy, as vulnerability of domestic farm sector continues, its impact on food prices is expected to be less compared to the previous years.

For the second year in a row, India has had a deficient monsoon. In June, the Indian Meteorological Department (IMD) had forecast 12 per cent shortfall in rains, and the actual deficit turned out to be 14 per cent.

“The weak south-west monsoon this time is particularly worrying for the economy, especially the farm sector, because it is the third straight shock after deficient rains in June-September 2014 and the unseasonal downpour in March 2015,” said Crisil, a leading rating agency in a report on current year’s monsoon.

Rainfall deficiency was most acute in the north-west region at 17 per cent, followed by central at 16 per cent, south peninsula at 15 per cent and east and north-east at 8 per cent. In the north-west and east and north-east, rainfall deficiency was lower compared with last year. But for central India and the south peninsula, the deficiency is higher. This time, five States have seen a rainfall deficiency of 20 per cent or more. “The sensitivity of agriculture sector to monsoon has been moderating due to continued improvement in yield, rising share of irrigation, increased global linkages and pro-active food management policies by government, said Anurag Jha, Citi Economist, while talking to *The Hindu.*

In this year, though the cumulative rainfall was 14 per cent deficient in the southwest monsoon, “the timely onset had led to an increase in sowing of kharif crops especially that of pulses and oilseeds”, Mr. Jha added.

However, he said, due to poor rainfall after July, the water storage in key reservoirs are around 22 per cent lower than last year, which could possibly impact the rabi crops.

According to Crisil, there are three key reasons for this year’s decline in food inflation: Proactive food management by the government by clamping down on hoarding and allowing imports of pulses, prices of which are lower abroad; restricted hikes in minimum support prices (MSP) contributing significantly to low inflation in food-grains; and the sharp fall in global prices of agri-commodities following a supply glut, which kept domestic food prices low.

This is especially true of commodities such as oilseeds where global prices have fallen nearly 20 per cent so far, and, where import dependence is almost 62 per cent.

Restrictive fiscal policy also helped in keeping demand under check.

As regards inflation, said Mr. Jha, though prices tend to be impacted by both actual and anticipated shortfall in production, "we expect the food inflation to remain contained" on benign global prices — as seen in UN FAO index; moderate hikes in MSP; and adequate level of food stocks.

"We expect Consumer Price Index (CPI) inflation or retail inflation to track an average 5 per cent in 2015-16 and 4.8 per cent in 2016-17, which could open the space for further 25-50 basis points (bps) easing in 2016. Key will be further progress on fiscal and transmission front," Mr. Jha added. "The impact of a monsoon shock is accentuated due to high vulnerability of the farm sector stemming from disproportionately high dependence on agriculture income, high agricultural indebtedness and farmer suicides, low irrigation buffer and poor crop insurance cover," said Crisil.

Almost half of India's GDP comes from rural areas. About 40 per cent of India's households engage in agriculture and within this group, two-thirds are heavily reliant on it. As agriculture suffers, Crisil report says the biggest impact will be on rural demand, which has already slowed in the past few years.

## Wild animals thrive at Chernobyl

It is unique evidence of wildlife's resilience in the face of chronic radiation stress.

Three decades after the world's worst nuclear accident turned a vast area around Chernobyl into an uninhabitable "exclusion zone," scientists are surprised to find it packed with wildlife. Wolves, elks, lynx, red deer and wild boar have reclaimed this abandoned site despite the radiation exposure, finds a study published in *Current Biology* .

As many as 116,000 people were evacuated from the Chernobyl exclusion zone after the nuclear disaster in 1986. The proliferation of animals is "unique evidence of wildlife's resilience in the face of chronic radiation

stress," says the paper. While there may be some effects on individual animals, the populations are thriving, particularly in the absence of people, co-author J.T. Smith, Professor at School of Earth & Environmental Sciences, University of Portsmouth told this Correspondent.

A helicopter survey revealed rising numbers of elk, roe deer and wild boar 10 years after the accident. But most notably, the wolf density was found to be seven times higher in the exclusion zone than it is in other nature reserves in the region. "Before the Chernobyl accident, mammal population densities were likely depressed due to hunting, forestry and agriculture," say the authors. The study also looked at animal tracks on the snow to test whether the more contaminated routes had fewer tracks. "We didn't find a correlation. We couldn't see a difference in the number of tracks between more and less contaminated areas," says Prof. Smith. The winter track censuses identified over a dozen species including, weasel, lynx, pine marten, raccoon dog, mink, ermine, stone marten, polecat, European hare and red squirrel.

Radiation is known to damage DNA, "but we have to remember that radiation dose rates now are more than 100 times less than in the first days after the accident," says Prof Smith. "While still very significant, the radiation levels we see now aren't expected to do major damage to animals' physiology and reproductive systems."

The very high radiation dose rates during the first six months after the accident "significantly affected animal health and reproduction at Chernobyl," but long-term radiation damage to wildlife "is not apparent from our trend analysis of large mammal abundances," the paper concludes.

## Coimbatore Corporation begins composting organic waste

Coimbatore generates close to 900 tonnes of waste a day.— Photo: M. Periasamy

The Coimbatore Corporation has begun composting organic waste at its facility in the Vellalore dump yard.

According to the sources, the Corporation has a separate facility – other than the one run by Coimbatore Integrated Waste Management Company Pvt. Ltd. – to manage 450 – 500 tonnes of waste a day. The city generates close to 900 tonnes of waste a day. Nearly 400 tonnes of it goes to the Company's facility and the rest the Corporation manages.

At this facility, the civic body processes over 50 tonnes of organic waste a day – collected from wards, markets and restaurants.

The Corporation uses exclusive vehicles to transport the organic waste and dumps it in an open yard measuring 2,800 sq.m. at the facility. The waste will remain in the open for 21 days. Effective microorganism and culture solutions are sprayed to fasten decomposing.

On the 22nd day, the waste will be shifted to tanks with earthworms. At the end of four weeks, the Corporation will take out the compost to be used at its parks, the sources say.

**Biomethanation plants**

Even as it goes about readying the organic waste, the Corporation has also repaired two biomethanation plants of three tonne capacity each. It will start diverting a portion of its composted waste to the plant to power street lights or small machinery at the Vellalore yard, the sources say.

For every 100 tonnes of waste the civic body composts, it gets 20 tonnes of manure.

The Indian EXPRESS
JOURNALISM OF COURAGE

## Express Recipes: How to make Almond and Saffron Phirni

Phirni is a feast for the eye and the taste buds. And it's so easy that you can make it while sipping on your morning cup of coffee, refrigerate it and enjoy it chilled during dinner.

It is time to start thinking festive. Diwali is still a month away but I am already thinking ahead of all the sweets I want to make at home. This almond and saffron phirni is definitely going in the Diwali dinner menu. Phirni is a feast for the eye and the taste buds. And it's so easy that you can make it while sipping on your morning cup of coffee, refrigerate it and enjoy it chilled during dinner.

### Almond and Saffron Phirni

Preparation Time: 10 mins (+soaking time) | Cooking Time: 30 mins| Serves 8

### Ingredients

1 litre whole milk
½ cup rice, soaked overnight
6-8 almonds, soaked overnight
8 tbsps sugar
½ tsp cardamom powder
1 pinch of saffron, soaked in warm water
A few strands of saffron for garnish

### Method

* Put milk on heat in a deep bottom pot.

* Drain the rice and blend it to a coarse paste using a little water. This step is best done if you have a small spice mixer. I don't have a spice mixer, but my hand blender worked just fine. It took a little longer but the end result was same.
* Once the milk comes to a boil; add about a cup of it to the rice batter. Mix well and then add the rice mix to the remaining milk in the pot. This way there are no lumps formed. In case you still get lumps, you can just run a hand blender in the entire milk just enough to break the lumps.
* Simmer and cook for about 10 minutes until the milk thickens.
* Meanwhile peel the soaked almond and cut into slivers.
* Add sugar and cardamom powder. Stir continuously until the sugar dissolves.
* Add in slivered almonds and saffron water. Mix well. Remove from heat and pour into earthen pots.
* Garnish each pot with just a strand of saffron. You can garnish with more chopped almonds but I like just a strand of saffron; make them look like small diyas or lamps.
* Set aside to cook. Once cool put them in refrigerator. Serve chilled.

THE TIMES OF INDIA

## APSSDC gave spurious seeds, say farmers

Chirumamilla Narayana, a green gram farmer from Chandapuram village in Nandigama mandal, is battling a financial crunch after his crop failed mainly because of the spurious seeds bought from Andhra Pradesh State Seeds Development Corporation (APSSDC).

In the fourth week of July, Narayana decided to sow green gram in his four-acre plot. About Rs 15,000 per acre as investment and 70 days later, all his hopes crashed. "The crop was growing in size but there was no yield at all. Only recently I found out that spurious seeds were to blame," he explained. Now Narayana is left with no option but to clear the failed crop.

Hundreds of farmers from Kanchikacherla, Veerulapadu and Nandigama are in similar distress. Crops in 1000-2000 acres have not brought any cheer. With the seeds failing to give them yield, they are getting their fields ready for the rabi season.

"I invested a huge amount that was borrowed from a private lender at a high rate. I cultivated green gram in six acres of land. As it is a three-month crop, I was hoping for at least some profit. But in the end the seeds turned out to be of very poor quality," said a dejected Gandi Koteswara Rao from Mogulur village in Kanchikacherla mandal.

Koteswara Rao who spent close to Rs 90,000 on his crop rued: "What can we do now? Three months of hard work were all in vain. I don't even know how to repay the loans."

While the seeds at least germinated for some of the farmers, the ones brought by M Venkateswara Rao from Gani Atkur village from Kanchikacherla mandal even failed to germinate. His 5-acre land almost looks barren. "I commenced sowing operations between July 26 and 30 and waited for germination. Usually it takes about ten days depending on the weather. So I waited till August 15. Later, I was told by the local authorities that the seeds were of no use," he said.

When contacted, the mandal agriculture officer Venu Madhav said that an inquiry is on. "Agriculture scientists from LAM agriculture research station have already visited the area. We have collected samples to check the health of the soil. We are also checking if there is something wrong with the seeds. Once we get the reports, we will act accordingly," he assured.

APSSDC Krishna district officer K Prasad refuted the allegations made by the farmers. "The seeds are absolutely fine. Anyway, we have not received any complaints from farmers till date," he told TOI.

However, farmers maintained that the soil health is fine. They have been running around various agriculture offices to get justice. "If it was the case of poor soil health, how will 1000-2000 acres be affected across three different mandals? They are just trying to cover up the issue. Who will bail us out from this situation now?" the affected farmers demanded to know.

## As dues mount, cane farmers switch to other crops

Disillusioned over non-payment of dues, sugarcane growers in the state are switching to cultivating other crops. This is evident as the 'command area' of production of the crop has witnessed a noticeable reduction for last three years. The highest shrinkage of the command area production has been in Haridwar district, which is known as a "sugar bowl" of Uttarakhand.

Sugarcane is grown mostly in the plain districts of Haridwar, Dehradun, Udham Singh Nagar and Nainital.

According to sources in the cane development and sugar industry department, the area under cane cultivation has reduced by 13,600 hectares in the command area of the state. "And the production of sugarcane in last three years, from 2012-14, has dipped by around nine lakh tonnes," said Anand Srivastava, head of the department.

Haridwar district, which is a leading producer of sugarcane, has, reportedly experienced the biggest dip in production as well as shrinkage of area under cultivation. "From 58,400 hectare in 2012-13, culitivation has now shrunk to 44,923 hectare," said district sugarcane officer Ajay Chauhan. The production of sugarcane in 2012 was around 31 lakh tonnes which is expected to be around 24 lakh tonnes in the 2015-16 crushing session.

Of the nine sugar mills in the state, three are privately owned and six are state-controlled units. All the private mills are in Haridwar district. The

sugar mills owe a total of around Rs 356 crore to cane farmers for 2014-15 purchase. Of this amount, private mills have to clear dues to the tune of Rs 200 while state-controlled units have to clear the rest.

"We have been staging a continuous dharna outside the SDM's office at Roorkee for the past 100 daysBut it seems that government is working hand in glove with these private sugar mills. Then why should we not drift from this crop to other crops," said Sanjay Chaudhary, a head of Bhartiya Kisan Union of Garhwal zone.

On their part, sugar mills cited low market price of sugar and high cost of production. "Sugarcane is grown mostly in the plain districts of Haridwar, Dehradun, Udham Singh Nagar and Nainital of the state. But it is those district where land has been used for purpose of industrialization and other development in big way after the formation of Uttarakhand. Therefore, price of land in these districts has increased manifold since. So a reduction of land for any agriculture activity is inevitable," said Lokendra Lamba, general manager (cane) of Uttam Sugar Mills at Libberheri.

"The price of sugar in the market is very low in comparison to our production cost, so from where will we get money to pay our creditors," said Lamba.

However, farmers alleged that sugar mills, particularly private ones, are not making losses. Rakesh Agarwal, a state farmer leader, said state government had given licences to these mills for production of power and setting up breweries to supplement their income. "These mills make profit from production of power and breweries. Should this profit not be distributed among farmers first as the production sugar and other byproducts are derived from this commodity," said Agarwal.

State government said it was very serious about develop a mechanism in the interest of cane growers vis-a-viz sugar mills. "Chief minister Harish Rawat has given instructions recently to all sugarcane departments concerned that they develop clear cut polices for early payment to farmers and promotion for cultivation of the crop," said a source based at the office of the chief minister.

## 5 teas that make you slim!

It's widely known that just one cup of tea can prevent strokes, arthritis, tooth decay and even keep cancer at bay. While it's regarded as nature's tranquiliser for its soothing properties, the brew also has another great benefit - it helps shed weight. Scientists have shown that tea has high levels of compounds that battle the absorption of fat.

Here are 5 teas that can result in a slimmer you...

**Star anise tea: promotes digestion**

Star anise, the fruit of a small evergreen tree (Illicium verum) native to China, can be used in the treatment of digestive troubles such an upset

stomach, diarrhea, nausea etc. One may drink a tea made from it by steeping a whole pod in one cup of hot water for 10 minutes. Strain this and sweeten it if required. Sip on this slowly when an upset stomach occurs.

**Peppermint tea: controls what you eat**

If you like peppermint tea then try and rotate that with a green tea drink as both speed up digestion and thus help you burn more calories. The peppermint leaves can be used to make a light, refreshing tea, which can be drunk either hot or chilled. To prepare the tea, take a tablespoon of fresh or dried leaves and add them to boiling water and let it steep for four to five minutes. Strain and add honey, if needed.

**Green tea: builds metabolism**

Research says the chemical EGCG found in green tea that speeds up the body's metabolism, is responsible for helping people lose the kilos - it can burn a whopping 70 calories a day! Green tea also raises the level of antioxidants. It's believed the antioxidant catechins in green tea boost metabolism and helps burn fat (can burn a whopping 70 calories a day!) Steeping time for the tea: two to three minutes at 85 Degrees Celsius.

**Rose tea: prevents constipation**

One of the oldest flavouring teas available, rose tea - made by mixing fresh roses and the bud of the tea - has a major therapeutic effect on the human body. Apart from clearing toxins and beautifying the skin, rose tea contains vitamins A, B3, C, D and E and is known to act against infections. It also prevents constipation and helps one lose weight.

**Oolong tea: guards against obesity**

Research reveals that oolong, a semi-fermented tea may have a stronger effect than even green tea. It promotes fat burning is said to help reduce cholesterol and the concentration of fat in the body. About two cups per day is recommended. Steep oolong tea anywhere from 30 seconds to five minutes, for a more full-bodied cup.

THE HINDU BusinessLine

## WTO effect: India may halt export subsidies for raw sugar

Buckling under pressure from countries such as Australia and Brazil at the World Trade Organisation (WTO), India is considering discontinuing direct export subsidies for raw sugar which are banned under the multilateral trade rules. It may instead give incentives that are compatible with the regime.

A government official told *BusinessLine*: "The mandate in the government is to move away from export subsidies. The Department of Food and Public Distribution is in consultation with the Commerce Ministry to explore other options for helping the sugar industry. The message is clear that export subsidies cannot be the answer to the problems facing the industry." The subsidy of ₹4,000 a tonne for export of raw sugar, which expired on September 30, has not been extended, much to the disappointment of sugar millers. Millers say that without incentives from the government it would

not be possible to export the 4 million tonnes (mt) of sugar that the government has mandated for the current sugar year (October-September 2015-16) as world prices are ruling much below domestic prices.

**Need for proper schemes**

The subsidies that the WTO allows for exported sugar are either for transportation or marketing. “If subsidies are to be extended for transportation and marketing, proper schemes have to be devised so that these can’t be questioned,” the official said.

The Agriculture Ministry has been announcing subsidies for export of raw sugar for the past two years to help ease the sugar glut in the country and enable millers pay the mounting dues to cane farmers.

However, these subsidies have increasingly come under the scanner of the WTO, with several members claiming that these could distort global prices. New Delhi has got away so far by claiming that it has not disbursed the subsidies to exporters yet, but it faces the danger of being dragged to dispute at the WTO if it is established that such sops are being doled out.

At the recent meeting of the Committee on Agriculture at the WTO, Australia pointed out that if the mandated 4 million tonnes of raw sugar takes place at a subsidised price, it could have an effect on world prices as the amount was equivalent to almost a tenth of world trade.

Through mandatory sugar exports, India aims to reduce the glut in the domestic market and help millers pay cane arrears to farmers, which stood at ₹14,000 crore at the end of August.

According to industry estimates, because of higher supplies, there would be a carryover stock of about 10.2 mt in the new season. With sugar output in 2015-16 expected at 28 mt, the total supply next season is pegged at 38.2 mt.

# Andrew Yule opens tea lounge in Kolkata

Andrew Yule & Co – that owns 15 tea gardens in West Bengal and Assam – inaugurated its model tea garden and tea lounge (for serving tea) at Eco Park, New Town, on the northern fringes of the city today.

The inauguration was done by the Chief Minister Mamata Banerjee over video conferencing. The (model) tea garden will produce around 300 kg of hand-made tea annually.

According to Sunil Munshi, Director-Personnel and Head of Tea Division, Andrew Yule, the (model) tea garden, made on an acre of land, came up with an estimated investment of ₹1.1 crore. Investments are made jointly by Andrew Yule and HIDCO.

"If successful the model will be replicated on a macro (larger) scale in Bengal and neighbouring States," Munshi said. Some of the areas where the model can be replicated include Siliguri and Darjeeling in West Bengal and in Assam.

In order to recreate the right environment (soil texture and otherwise), some 40 trucks carrying soil from the Dooars region of North Bengal were brought in. The just inaugurated tea lounge has three areas – AC, non-AC, and a tent – and looks to recreate the ambience of a tea garden here in the city.

Business Standard

To provide a safety net to growers of pulses, which could also help boost production, the Centre's proposed newcrop insurance policy has pegged the burden of premium on pulses at a moderate two per cent of the sum insured.

Officials said according to the broad contours of the new crop insurance scheme, which has been prepared and is now awaiting Cabinet nod, the premium on horticulture crops has been fixed at five-six per cent of the sum insured or on actuarial basis, whichever is lower, while that on non-horticulture crops has been fixed at two-three per cent.

The difference between the actual premium charged by the insurance company and what the farmer pays will be subsided by the Centre, officials added.

This means that if a farmer gets his pulses crop insured for Rs 200,000, his annually premium would be somewhere around Rs 4,000 or even lower. At present, the average crop insurance premium on pulses, which a farmer has to pay ranges between 10-12 per cent of the sum insured, which acts a big deterrent. The scheme would be a combination of weather-based and yield-based insurance for crops.

The government has been working on a new crop insurance scheme for a long time, but there has been some differences over the premium to be charged from the farmers and its impact on the Centre's subsidy. However, officials said the premiums have been finalised after much deliberation.

The financial burden on insurance companies would also be minimised as participants would be invited through open tenders conducted by the state governments.

"In the currently operational modified National Agriculture Insurance Scheme, premium is charged at market rates due to which for some crop the farmer burden is as high as 10 per cent of the sum insured. The new improved crop will lower this burden," another official remarked.

Village or block could continue to remain as a unit for measurement of insurance claim as with the existing schemes.

According to a study by private weather forecasting agency Skymet along with industry association Assocham, less than 20 per cent of India's 130

million farmer families have crop insurance, which is why a vast majority of them are exposed to the vagaries of weather.

Even among loanee farmers, insurance penetration is not 100 per cent, for whom it is mandatory to get an insurance cover as soon as they avail of a crop loan.

"Of the un-insured farmers, 46 per cent were found to be aware but not interested while 24 per cent said the facility was not available to them," the study showed.

Only 11 per cent felt they could not afford to pay the insurance premium.

Poor design of insurance products, particularly related to claims settlement, has led to farmers not being covered, despite significant government subsidy, the study pointed out.

According to rules, farmers' insurance claims have to settle within 45 days of the risk assessment. However, often, claims are not attended even after six months. This was one of the factors behind farmers' not opting for crop insurance.

However, there are some aberrations as well and in some states such as Rajasthan and Bihar, where 40-50 per cent of total area under crop is covered through insurance.