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DECCAN Chronicle

Say no to food after 5pm if you want to lose weight

A drastic diet to cut your daily calories by a fifth could ward off cancer and diabetes



Eating less between 8 am and 5 pm on the other hand could prevent killer diseases in old age. (Photo: Pixabay)

London: Here's a solution to shed those extra holiday kilos! Fasting for 15 hours overnight every night is key to losing weight and staying slim, says a study.

Moreover, a drastic diet to cut your daily calories by a fifth could ward off cancer and diabetes. The study, published in the journal Nature Communications, follows research showing that fasting in middle age, or going without food after dark, can help people to live longer, healthier lives.

Scientists have found it is possible to turn back the clock and live longer using extreme dieting in middle age. In monkeys, stopping them from eating between 5pm and 8am extended their lives by 10 per cent, compared to eating normally. Researchers say the findings that dieting can fight ageing will also apply to humans, who share 93 per cent of the same genes.

Restricting the food we put into our bodies appears to make them more able to fight off the illnesses which accompany old age. Lead author Professor Rozalyn Anderson, from the University of Wisconsin, said: 'Cutting your calories delays ageing, probably because the body uses energy from food differently to become more resilient.'

'By targeting aging itself we could, instead of fighting cancer or cardiovascular disease individually, target the full spectrum of disease simultaneously.'The latest study is hoped to settle a debate which has been raging for the last seven years on cutting calories.The University of Wisconsin found in 2009 that rhesus monkeys given 20 per cent less food, compared to those who ate at will, lived far longer - lasting nine years beyond the average lifespan of 26 years.

These monkeys were less likely to get cancer and cardiovascular disease, and to develop the insulin resistance which causes diabetes, leading scientists to believe calorie cutting could reverse the process of ageing.But a subsequent experiment by the National Institute on Ageing dashed their hopes after finding no impact on survival and only very negligible health benefits.

Now, however, the scientists from both teams have reviewed their work and a third study, using fewer calorie-restricted monkeys, to determine that young animals may have skewed the previous result.Professor Anderson said: 'The low-calorie intake diet worked in the rhesus monkeys in their teens and twenties, but not in monkeys started on the diet early in the pre-teen years.'This shows it may be better for people too if started in later life.'

The research team conclude that eating less, in the case of the Wisconsin study between the hours of 8am and 5pm only, increases survival.It does this by preventing the killer diseases which strike people when they get older, and which are shared by monkeys, such as cancer and dementia.The reasons why are not yet fully understood, with one theory being that eating less may send the body into survival mode so that it focuses on protecting itself.

The results of all three previous studies in monkeys suggest older men could benefit most from calorie-cutting, because males are most vulnerable to putting on weight from an unrestricted diet and developing the insulin resistance which leads to diabetes.The weight loss seen in the animals is expected to have its own impact on people's health, with people who are obese at greater risk of 13 separate types of cancer.

The study follows work by the University of Southern California, which found a four-day diet, slashing calories almost in half, reduced people's risk of diabetes and cardiovascular disease.Lead author Valter Longo said following the study: 'It's about reprogramming the body so it enters a slower ageing mode.'

Crunch in medicinal plants production in Vizag

Poor marketing policy of state is the main stumbling block.



Annually about 20,000 quintals of Ashwagandha and 6,000 Piper Longum (Pippala) are being produced in the state now.

Visakhapatnam: Despite the growing demand for medicinal plants and herbs in Andhra Pradesh, growers in the state are now reluctant to take them up for cultivation, resulting in a supply crisis.

The cultivators have complained to the Andhra Pradesh Medicinal & Aromatic Plants Board (APMAPB) that they are getting a raw deal for their produce, given the cost of cultivation and labour invested.

“Poor marketing policy of the state government and lack of primary processing units are the main stumbling blocks for the medicinal plant market in the state,” said an agricultural scientist.

Big herbal companies and many from Madhya Pradesh (Neemuch) are said to have been minting good money, buying medicinal plants at cheaper prices. Moreover, outsourcing the process of collecting the raw material of the medicinal plants and the research work to a few selected private companies is starting a monopoly in the medicinal plant market.

When contacted, APMPAB deputy executive officer M. Ravi Sankara Sarma said, “The crunch in medicinal plant production is because production is not surging as per demand. The growers of the medicinal plants are not happy over the returns from their produce. We have been providing subsidies to the cultivators and efforts are on to ensure good rates for the medicinal plant produce.”

He pointed out that the board was not receiving enough funds from the state government for the conservation and marketing of the medicinal plants. About 15 tree species and 25 herb and shrub species are being cultivated in Andhra Pradesh, according to the Andhra Pradesh Medicinal and Aromatic Plants

Board. However, Ashwa-gandha and Piper longum (Pipp-ala) species are being cultivated extensively in Vizag and Kurnool.

About 70 per cent of the medicinal plant and herb species growing in the state are on the verge of extinction in the state, according to the AP Medicinal & Aromatic Plants Board.

As many as 312 medicinal plant species in the state have commercial trade potential. “The trading of biological resources, including medicinal plantation, runs to around Rs 10,000 crore in the state,” said former chairperson of the AP Biodiversity Board R. Hampaiah.

Agrarian crisis bigger issue: TNAU Vice-Chancellor

Expert in livestock and farming for more than three decades shared his views on jallikattu and the conservation of native TN bulls.



VC K. Ramasamy

Chennai: In an interview with DC, Tamil Nadu Agricultural University vice chancellor Dr K. Ramasamy, who has been an expert in livestock and farming for more than three decades shared his views on jallikattu and the conservation of native TN bulls.

Q: Jallikattu has become a major political issue and the demand for the sport has been gaining momentum explaining that it will protect native breeds. Your take on this?

Traditional sports are important for our cultural values. Jallikattu should be held, but it should not be allowed to overshadow more critical aspects of protecting native bulls. Even as the state is in the grip of Tamil nationalistic fervour over the existing ban on the bull sport during Pongal festivities, there are more aspects in protecting native species.

Q: Will jallikattu help to protect all the native bull species of Tamil Nadu?

We have endemic species like Kangayam, Umbalachery, Poorani, Bargur and Ongole and all species are facing the threat of extinction. Jallikattu will help to conserve cattle only to a minimal extent in some villages. The bull taming will

not serve the entire purpose of protecting all native breeds. Agrarian crisis and lifestyle changes are the major threats to our native breeds and not just the ban on jallikattu.

Q: Disappearance of bulls had increased unemployment in the farm sector as dependence on tractors had gone up, your take on this?

It is a fact. The farming crisis has led to unemployment. The villager is more protective towards their cows than the bulls. Cow helps in the rural economy, whereas the bull is not economically helpful. Except a few bulls reared for jallikattu, bulls are always village nomads maintained by temples. The native livestock lost their value several decades back even before jallikattu ban thanks to commercial practices among farmers and villagers.



A desi bull

Q: What are the suggestion you recommend for protecting native breeds Whether it is cattle or dogs, there are ongoing conservation schemes in Tamil Nadu sponsored by the Centre?

Our university has been maintaining breed stock of bulls and their germ plasm. But the public has to start rearing livestock at villages and they should be converted back as farm animals only then the lost biodiversity can be retrieved in TN villages.

Q: Is there are an alternative for jallikattu?

Yes, our ancient practice had other forms of Pongal sports involving bulls. Like in Pudukottai district, there was a race between the bull and the youngsters running parallel without handling the animal. Further the bull owners can also tie, the prize money on its horns and release the animal in open streets without organising jallikattu, so that whoever takes the bull by its horn can take away the prize money and this practice were called as Pongal parisu maadu viduthal.

Endangered darters found in Kollam wetlands

The district also records higher number of birds, including 32 migratory species.



Eurasian Curlew and Whimbrel

Kollam: The Asian Waterbird Census 2017 conducted in Kollam by WWF-India in association with the social forestry wing of Kerala forests and wildlife department on Tuesday spotted 55 Oriental Darters which are designated as endangered by the International Union for Conservation of Nature (IUCN) in the Polachira wetlands here. It has also found a higher number of birds and bird species in the district - 9,378 birds belonging to 65 species including 32 migratory species. In 2016, it was only 5,303 birds of 59 species. They surveyed areas like Polachira wetlands near Chathannoor, Karali Marshes, Chittumala Chira, Sakthikulangara and Neendakara harbours, Pallikkodi, Vellanathuruthu, and Kandachira, an extension of Ashtamudi Lake.

In Polachira, they spotted migratory birds including 197 Eurasian Coots, 70 Spot-billed Ducks, and 110 Garganey Ducks. They reported 260 Purple Swamp Hens, 560 Lesser Whistling Ducks, the resident species, nine Eurasian Spoonbills and 40 Pheasant-tailed Jacanas, apart from 55 'Oriental Darters'. The wetland is also home to 185 Eurasian Coots, 25 Spot-billed Ducks, 219 Purple Swamp Hens and 262 Lesser Whistling Ducks and 25 Oriental Darters. In the Karali Marshes and Chittumala Chira, there were ten Eurasian Spoonbills, 280 Garganey Ducks, and 205 Whiskered Terns and 193 Purple Swamp Hens and observed that the marshes were recovering its bird-richness ruined by unchecked sand mining.

The Sakthikulangara - Neendakara Harbor and Pallikkodi areas confirmed their avian abundance with the highest count with 1,442 Little Egrets, 169 Little Cormorants, 182 Intermediate Egrets, 214 Cattle Egrets, and 275 Brahmini Kites which are resident species and 78 Northern Pintails and 76 Whiskered Terns along with few other migratory ones. "Though there is a considerable hike, both in the number and species diversity of water birds in the district,

most of the sites are facing habitat loss and degradation. Many regular birding areas are under severe threats like pollution, land reclamation, invasive species, lack of agriculture, and unscientific developmental activities,” A.K. Sivakumar, senior education officer with the WWF-India, who led the team, told DC.

Business Standard

As demand swells, Robusta beans prices rise to \$2,200 per tonne

Economic slowdown forces customers to switch from Arabica to less expensive coffee



Image via Shutterstock

The price of Robusta, a major variety of coffee grown in the country, has increased by a little more than 57 per cent year-on-year to \$2,200 a tonne, after a spell of price drops and bad weather.

Growers said that this will help them to break even, but production has dropped 20 per cent.

Ramesh Rajah, president of the Coffee Exporters Association, said the price had touched \$2,200 a tonne from \$1,400 a year ago.

The current price is the highest in the past 52 weeks.

The price increase was mainly because of the demand exceeding the supply. Traditionally the demand for Arabica varieties, which are costlier than Robusta, is high. But, as many developed and developing economies are going through a slowdown, people have become cost-conscious and are preferring inexpensive varieties of coffee, which is pushing the demand for Robusta, according to Rajah.

According to the International Coffee Organisation (ICO), global coffee production in 2016-17 is expected to remain relatively stable, up 0.1 per cent to 151.6 million bags (internationally one bag is 60 kg and in the domestic market it is 50 kg). As a result, world consumption for 2015-16 has been revised to 155.7 million bags, up 2.6 per cent over the 2014-15 figure. This is a significant deficit compared to the production of 151.4 million bags in 2015-16.

The production of Arabica is up by 4.4 per cent to 93.5 million bags in 2015-16 (3.9 million bags more than last year), while Robusta's production is expected to fall by six per cent or 3.7 million bags to 58.2 million bags, lower mainly due to the drop in production at Brazil and Vietnam, where buyers will now look at importing more from India since production in the two countries is down. The low production is making export difficult because exporters are not able to expand beyond their traditional markets.

CHEAPER VARIETY SEES DEMAND		
Exports from India during financial year		
Financial year	Apr 2015-Jan 2016	Apr 2016-Jan 2017
Permits issued (Tonnes)	2,326,479	277,279
Value (\$ mn)	595	637
Value (₹ cr)	38,455	4,275
Exports from India during coffee year		
Coffee year	Oct 2015-Jan 2016	Oct 2016-Jan 2017
Permits issued (Tonnes)	73,348	90,279
Value (\$ mn)	178	220
Value (₹ cr)	1,172	1,485
<small>Source: Coffee Board of India</small>		
Global production		
Year	Output (in thousand bags)	
2013	152,130	
2014	148,724	
2015	51,438	
2016*	151,624	
<small>Note: January data till Jan 16; * Estimated; Source: International Coffee Organisation</small>		

Italy is the largest buyer, accounting for close to a fourth of Indian coffee shipments, followed by Germany, Russia and Belgium.

Coffee export in 2016 touched a new high of 360,000 tonnes, an increase of around 17 per cent. But the realisation, in dollar terms, was down around three per cent due to the rupee fluctuating against the dollar.

In 2016, Arabica shipments grew around 18 per cent to 51,648 tonnes (43,785 tonnes in 2015), while robusta exports were up around 20 per cent at 201,000 tonnes (167,000 tonnes in 2015).

Dairies' margins under pressure on 20% hike in milk procurement cost

At the farm gate, cost has risen by at least a fifth this year

Faced with a sharp increase in milk procurement costs, private dairies and co-operatives are facing margin pressures this season. After dips over recent years, milk prices have risen sharply. At the farm gate, the procurement cost has risen by at least a fifth this year, to Rs 27-28 a litre for Gujarat Co-operative Milk Marketing Federation, producer of the Amul brand of products, from Rs 21-22 a litre last year. "Milk procurement cost has gone up because of drought in some parts of Maharashtra,"

THE TIMES OF INDIA

Andhra Pradesh, Telangana among top 10 farmer-friendly states



HYDERABAD: Andhra Pradesh and Telangana have been declared among the top 10 most farmer friendly states in the country, according to the NITI Aayog's index on reforms in the farm sector. This is the first time that NITI Aayog has prepared an 'Agriculture Marketing and Farmer Friendly Reforms

Index' based on initiatives taken by the states in implementing agriculture marketing reforms.

It has identified three key areas and 12 reforms to rate states. The areas identified for immediate reforms include agricultural markets, land and reforms related to forestry on private land, felling and transit of trees with a maximum score of 100.

According to the report, no state in the country implemented the entire set of market reforms. Also, land leasing and harvest and marketing of some tree species on private farm land are subjected to various degrees of restrictions in almost all the states/UTs. Detailed study in various states and UTs show that reforms have remained patchy, partial and sporadic or have been implemented in a diluted form, it said.

However Andhra Pradesh with 56.2% and Telangana with 54.3% weightage occupied the 7th and 9th positions among the states.

The 12 reforms for which ranking have been given include contract farming, direct sale by producers to processing industries/exports/ bulk buyers, delinking the provisions of compulsory requirement of shop/space for registration of traders/market functionaries, and taking fruits and vegetables out of the Agriculture Produce Market Committee (APMC) Act.

IFFCO's mobile app a hit among farmers

Aurangabad: The mobile app offering instant help for farming-related issues along with a SIM card that facilitates sharing of expert advice through calls and SMSes — both initiative of Indian Farmers Fertiliser Cooperative (IFFCO) —

have found growing number of takers from the farming community across the country.

Speaking to ToI on the sidelines of an event, IFFCO business operation manager Raju Hiras said the mobile app, IFFCO Kisan, has been downloaded by nearly 2.23 lakh farmers in the last one year.

"The mobile app is proving to be a hit among farmers as it is helping them in taking well-informed decisions by accessing customised agricultural information related to their need. It also provides them latest market prices, weather forecast, agricultural advisory, best practices tips related to agriculture, animal husbandry and horticulture," Hiras said.

The application also offers a buyer-and-seller platform, agriculture-related news and information about government schemes for farmers at their fingertips.

Elaborating upon newly added feature, Ask our experts, Hiras said, "It can be termed as key attraction of the mobile application. Using this feature, farmers can talk to experts seek desired advice in no time. The farmers can also send pictures of their crops in case of any attack for better understanding of the experts. It has been proving very useful for farmers who have difficulties in writing."

Among other feature, many farmers have been reaping benefits of the Market place — a buyer and seller meeting platform. "A buyer or seller can register his or her buying or selling requirement. It is sort of communication group among stakeholders. It will help them to buy or sell faster with higher profitability," Hiras said.

The Green SIM card, another farmer-centric initiative of IFFCO, is said to have opted by 35 lakh farmers across the country, including 1.29 lakh from Maharashtra.

"We have tied up with private network providers for mobile signals and farmers can buy the SIM card by one-time payment of Rs 50. We make four calls to farmers for sharing crucial advices and messages using the registered numbers," authorities said.

The advices are related to weather updates, crops safety, horticulture, animal husbandry, market prices, personal health and government schemes. "The service is absolutely free to farmers and enjoyed by lakhs," he said.

The IFFCO on Tuesday held farmers meet in the city to mark its golden jubilee celebrations. Speaking on the occasion IFFCO managing director Udaykumar Awasthi urged farmers to keep themselves updated with modern techniques. "At our end, we have been introducing several digital intuitive and farmers are appealed to take benefit of it for desired yield," he said.

Government: Efforts on to provide 100% crop loss compensation



COIMBATORE: A group of ministers on Monday assured farmers that the state government was making efforts to provide 100 per cent compensation for the losses they incurred following failure of monsoon and also a drought like situation across Tamil Nadu.

In an interactive meeting with the representatives of farmers and also farmers' associations of seven districts of Coimbatore, Tirupur, Erode, Salem, Namakkal, Dharmapuri and Krishnagiri, the ministers said a survey was being carried out across the state to assess the actual loss due to the drought.

The ministers interacted with the farmers on their demands, agriculture related issues and problems, man-human conflict and steps to prevent it, desilting of water bodies and also providing drought assistance, an official release said.

Considering the acute shortage of water in the state, the farmers were advised to take up cultivation of drought-resistant varieties.

They also assured the farming community that the state government would extend similar support to them on agriculture related issues as was extended by the government led by former chief minister, Jayalithaa.

District collector T N Hariharan, A K Selvaraj, MP, P R G Arunkumar, Amman K Arjunan (both MLAs) and leaders of several farmers' associations in seven districts, participated in the meeting.

20 percent potato crop destroyed in the district

Agra: Nearly 20% of potato crop have been destroyed in the district due to harsh weather conditions. Farmers are miffed as they may have to face losses

in case the weather conditions do not improve in the next few days. This season, potatoes were sown in around one lakh hectare of land.

Agra is a major hub of potato production in the country. The district holds 10% of India's cold storage capacity, and almost the entire capacity is used to store potatoes. There are around 240 cold storages in Agra region with a capacity to store more than 4.5 crore packets of potato of 50 kg each. Superior quality of potato is directly supplied to around 15 states of the country and to major vegetable markets of Delhi and Mumbai.

“This season, the weather conditions in November and December were suitable for potato cultivation. During that time, soil had the right amount of moisture for the development of crops. After a long time farmers were expecting bumper potato production. But sudden change in weather has been a serious setback. Around 20% of crop has withered due to wind, dew and fog. If such conditions prevail in the next few days, we fear that the size of the potatoes will remain small, and reduce the net production,” said Bharatiya Kisan Union district head Shyam Singh Chahar, adding that maximum losses have taken place in Etmadpur, Fatehabad, Khandauli, Shamshabad, Bah and Kiraoli blocks.

Deputy director of agriculture Gaurav Yadav said, “We are assessing crop loss due to harsh weather condition. The meteorological parameters are not suitable for potato crop. But farmers can save their crop by ensuring suitable irrigation and spray of potash. Apart from adverse weather condition since last week, the temperature this year has been better as compared to past years. High production is expected to take place this year.”

Meanwhile, the city remained under the grip of cold on Tuesday. Met officials said that fog is expected from Wednesday onwards, but the temperature will remain slightly above normal for the next three days.

NABARD launches Sheep Rearing Scheme

To benefit 1,410 farmers in Medak, Sangareddy and Siddipet districts

The National Bank for Agriculture and Rural Development (NABARD) launched Sheep Rearing Scheme with an outlay of Rs. 14.1 crore. This is expected to benefit about 1,410 farmers in Medak, Sangareddy and Siddipet districts.

Under the scheme, each farmer's family would be provided with two 10+1 sheep rearing units with an outlay of Rs. 1.10 lakh.

U.S. Shevde, DGM, NABARD, and Chitti Devender Reddy, President, DCCB, formally launched the scheme.

“Integrated/multi enterprise farming will reduce the risk in agriculture and double the farmers' income over a period of five years. The NABARD is assisting the State government in the creation of irrigation infrastructure, storage and social infrastructure which will help farmers improve their yield and quality of life to take up multi enterprises and double their income. The dairy, poultry and vegetable pandal schemes are successfully implemented and the Sheep Rearing Scheme is another such initiative,” said Mr. Shevde.

Mr. Devender Reddy said dairy, poultry, vegetable pandals and sheep rearing loans through the DCCB would help farmers increase their income.

He informed that the bank was opening 15 new branches and has already commenced nine Financial Literacy Centres.

G. Ramesh Kumar, AGM, NABARD, M. Srinivas, CEO, DCCB and others were also present.

DROUGHT-TN

TN seeks Rs 39,565 crore from Centre to tackle drought

Drought-hit Tamil Nadu on Monday urged the Centre to sanction Rs 39,565 crore from the National Disaster Response Fund towards mitigation measures, with Chief Minister O Panneerselvam seeking Rs 1,000 crore urgently as the state government does not have sufficient funds to meet the challenge. Panneerselvam also urged Prime Minister Narendra Modi to depute a Central

team “to study the extensive damage caused to agriculture crops and to take stock of the drinking water scarcity in the state”.

Soil in Dakshina Kannada lacks contents for good productivity

Farmland across the district facing a dearth of borax, zinc sulphate and phosphorous

The ongoing soil health test in Dakshina Kannada for issuing soil health cards under a government scheme has revealed that farmland across the district is facing a dearth of borax, zinc sulphate and phosphorous contents required for good crop productivity.

Also, the pH value of soil is less than six making it acidic in nature due to heavy rainfall across the district.

The ideal range of pH value should be between 6.5 and 7.5 for the proper crop growth and production. Less borax, zinc sulphate and phosphorous contents too affected the productivity of crops.

H Kempe Gowda, Joint Director, Agriculture, Dakshina Kannada attributed the soil lacking enough borax, zinc sulphate and phosphorous to lack of application of micro-nutrients through organic manure in the district for over three to four decades.

“Chemical fertilizer should be applied like pickle in a meal. The meal should be organic manure. But it has become reverse in farming sector in the district,” he told *The Hindu* .

Recommending application of organic manure, Mr. Gowda said that the Agriculture Department too supplied manure with zinc sulphate and borax contents. Farmers can purchase them from the department at subsidised rate. The farmers should apply farm lime as 200 kg per acre to maintain the balanced pH value of the soil.

Mr. Gowda said that if the pH value was less than 6.5 or more than 7.5 even if farmers applied manures the crops would not be able to absorb them. Hence, balance should be maintained.

Mr. Gowda said that the government had set a target of testing 48,000 soil samples in the district by making grids for 2016-18.

“Now, the department has collected 20,000 samples. A sample represented the condition of soil in the farmland of five to 10 farmers as samples are taken by forming grids. Details of the samples analysed are entered in the Union government’s soil health portal. So far details of 6,500 samples have been entered,” he said.

Mr. Gowda said that of 40,000 cards printed, some had been distributed.

A soil health card in A 4 size contained details of extent of farmland of the farmer, survey number, crop details, results of soil test and recommendations for maintaining soil health.

Survey indicates presence of more endosulfan victims

256 persons in 368 houses have after-effects of pesticide spraying

If a field survey conducted in four villages of the locality this week by students is any indication, the number of people still suffering from the residual harm caused by the indiscriminate spraying of pesticide endosulfan in the mango orchards of Muthalamada and surrounding grama panchayats in the district before its global ban four years ago is far higher than the official figures.

Conducted in the background of the recent Supreme Court order ensuring compensation and rehabilitation for over 5,000 victims affected by endosulfan spraying in Kasaragod district, the survey was held in Mamballam, Kizhakkekkad, Mallankulambu and Pallam villages in the Muthalamada grama panchayat.

It was conducted by students of Master of Social Work (MSW) at Mercy College in Palakkad, in association with Ashrayam Rural Development Society (ARDS).

“It was a small initiative with very limited resources. But it indicates the need of conducting a comprehensive survey not just in Muthalamada but also in the adjoining Elavanchery, Kozhinjampara, Velanthavalam, Vadakarapathi, Eruthempathy, Nenmara, and Nelliampathy grama panchayats,” said S. Guruvayurappan, environmentalist and chairman of the ARDS.

11 dead

Among the 368 houses we have covered, there were 256 persons identified with severe after-effects of the spraying of endosulfan. While a few of them have apparent physical illnesses, some have severe birth deformities, cancer, cerebral palsy, mental disorders, skin diseases, and vision loss. Eleven people had died in the past four years without any medical attention or rehabilitation,” said S. Sharanya, an MSW student who took part in the survey.

“The selected villages were located far away from the mango orchards. But their elder members constituted the farm workers engaged in cultivation of mangoes and spraying of the pesticide,” said Mr. Guruvayurappan.

An unofficial survey conducted two years ago by the Chittur Taluk Endosulfan Virudha Samara Samithy had found 613 children, whose growth was crippled by the effects of the pesticide in the entire taluk.

Poor families

“Most of the victims hail from low income families. They appear to be neglected, devoid of any governmental support,” said Mr. Guruvayurappan.

It has been over two years since the National Human Rights Commission (NHRC) directed the Chief Secretary and Palakkad District Collector to pay compensation to the Muthalamada victims. But no governmental agency has so far contacted any of the victims. Though the Agriculture Department had given a detailed report to the State government last month stressing the need to rehabilitate Muthalamada victims, the State government is yet to act on it.

From banker to urban farmer, an organic leap



Retired enthusiast in Mangaluru grows vegetables on 14 cents of land and runs a car boot store

: Retired bank employee Pradeep Soori’s family in Kulai-Hosabettu here has not purchased vegetables from the market for a decade. Mr. Soori grows chemical-free vegetables in this residential colony on 14 cents (about 7,000 sq. ft.) of land that he bought for the purpose.

With the rising demand for organic products in cities, consumers swarm his four-wheeler on Panje Mangesh Rao Road in the heart of the city on Sundays, when he arrives to sell them at the weekly shandy (market). The sale has been organised over the last two-and-half years by the Savayava Krishika Grahaka Balaga (SKGB), a like-minded group of consumers and organic farmers. Mr.

Soori's vegetables are grabbed by consumers within an hour, says K. Ratnakar Kulai, secretary of the Balaga.

Mr. Soori, who retired from Canara Bank a year ago, mainly cultivates leafy vegetables, gourds, brinjal, papaya, banana, beans, green chilli and brahmi (a herb). He does not employ labourers.

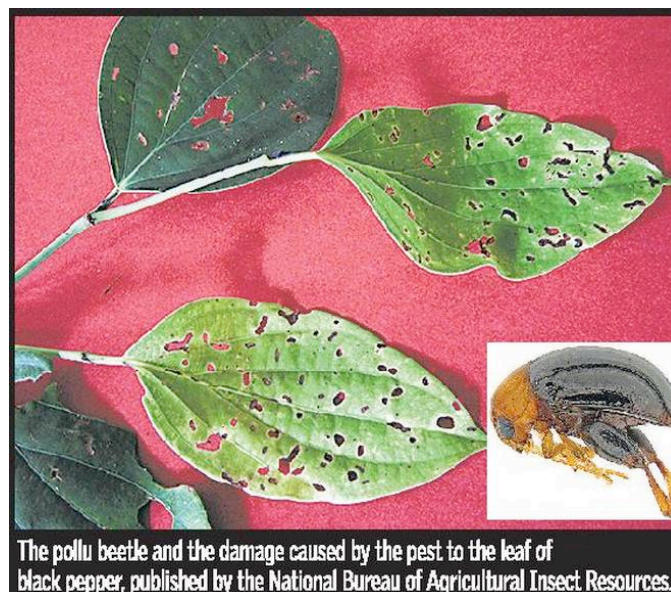
While he was in service, it was bank colleagues and some outsiders who bought his produce. The 'urban farmer' told *The Hindu* of his recent discovery that rotten banana helped control pests that attacked vegetables. "Hang out a plastic bag with rotten bananas in it. You can control pests to a great extent," he advised. The organic farming enthusiast also uses cow's urine, neem oil and sour butter milk as pesticides.

After his agricultural efforts became a success, Mr. Soori expanded cultivation to the terrace of his house, where a grapevine has started yielding fruit now. He grows other vegetables in grow bags.

Plenty of scope

"There is enough scope to grow organic vegetables on small patches of land in cities, like I do, and there is good demand for organic produce now," Mr. Soori said, adding that he never suffered losses as there is plenty of demand. Moreover, his farming is not labour-dependent, and he prepares his own organic manure. SKGB facilitates direct sale of organic vegetables grown by 12 such farmers on the road on Sundays, which is allowed only after the cultivation processes are verified. "There is enough demand; it is supply that falls short," said president Addor Krishna Rao.

Findings on pest menace under a cloud



KAU scientist says CIARI findings on pollu beetle in Andamans false

The Central Island Agricultural Research Institute (CIARI), Port Blair, one of the premier institutions under the Indian Council for Agricultural Research (ICAR), is in the eye of a storm over allegations of research misconduct and fabrication of scientific data on the occurrence of pollu beetle, a pest infesting black pepper.

The charges against scientists at the CIARI surfaced in a scientific paper by K.D. Prathapan of the Department of Agricultural Entomology, Kerala Agricultural University, challenging their claim to have identified the pollu beetle (*Longitarsus nigripennis*) as a major pest of black pepper on the Andaman and Nicobar Islands.

It was in 2011 that a team of researchers at the CIARI, led by Ajanta Birah, published their work in the Indian Journal of Entomology. Countering the finding, Dr. Prathapan, who is credited with the taxonomic identification of the pollu beetle as *Lanka ramakrishnai* , argued that three field surveys and review of literature had failed to provide evidence of the occurrence of the pest on the islands.

In his paper published in the same journal, he maintained that the CIARI had failed to produce taxonomic or photographic evidence of the beetle or any symptom of infestation on berries or leaves of pepper.

Repeated requests for permission to examine the specimens or visit the research farm of the institute to confirm the presence of the pest and its damage were reportedly turned down by the institute citing issues of copyright and intellectual property rights, he said.

Gaining traction

Dr. Prathapan's charges gained traction with the publication of another paper in the Current Science journal on December 25, 2016, accusing the CIARI of research misconduct. Titled 'The pollu beetle in the Andamans — Do several lies make a truth', the paper by S. Ramani, former scientist at the National Bureau of Agricultural Insect Resources pointed out that CIARI's recommendation to spray quinalphos, a broad spectrum nerve poison to control the pollu beetle, would harm the fragile island ecosystem and thwart any attempt to market organic pepper from the islands.

Reacting to the charges, Director, CIARI, S. Dam Roy told *The Hindu* that Dr. Prathapan's conclusion was based on limited surveys and suffered from the required technical perfection to rule out the non- occurrence of the pollu beetle on the Andaman Islands. "Basically, ours was a work on pest management and not a taxonomical study," he said.

Dr. Roy explained that the occurrence of the pollu beetle on the islands had been reported way back in 1973 by the Central Plantation Crop Research Institute, Port Blair, and confirmed last year by scientists at the Uttar Banga Krishi Viswa Vidyalaya, Bengal. The National Horticulture Mission had also identified it as a major pest affecting the pepper crop. He, however, admits the need for a systematic study by experts to establish the occurrence of the beetle in the islands.

Moisture stress hits crops in Kurnool, Anantapur districts

Scanty rainfall under the influence of North-East monsoon and during the winter season has resulted in crops suffering from moisture stress in Kurnool and Anantapur.

With rabi crop being sown in 16.21 lakh hectares in the 13 districts of Andhra Pradesh and levels in the major reservoirs being low, water management is going to be a formidable task for the State government.

Groundwater, which was an average 11 metres below the ground level, might not be sufficient to bail out farmers with standing crop.

The water levels in the major reservoirs of Srisailem and Nagarjuna Sagar are also low.

The amount of water available in the important major reservoirs is Srisailem 103.4 tmcft, Nagarjuna Sagar 114.6 tmcft and Pulichintala 0.5 tmcft.

While paddy was sown in 4.59 lakh hectares till today, coarse grains (wheat, jowar, bajra, maize, ragi and minor millets) were sown in 2.66 lakh hectares.

The area in which pulses were sown is 9.21 lakh hectares.

Officials of the Agriculture Department said that blackgram and groundnut crop in Kurnool district that were either in the vegetative or the sensitive flowering stage were suffering from moisture stress.

Similarly, Bengalgram in Anantapur was under moisture stress in Anantapur district. Officials said that there would be a drastic reduction in yields due to dry spell this year of these two crops.

Jowar, bajra, maize, Bengalgram, groundnut and sesamum that were sown were still in the vegetative stage. The greengram and blackgram were entering the flowering stage.

Cash crops

The two cash crops -- chillies and tobacco -- were also entering the flowering stage. Paddy was in the transplantation stage in the Godavari and Penna deltas and Niger was the only crop that was ready to be harvested.

“Paddy sown in rabi will require at least two more wettings. Paddy farmers with land in Budameru ayacut are cultivating with sewage water. Farmers with access to groundwater are using it out of desperation,” said K. Hanumantha Rao, a farmer from Kankipadu mandal.

TN seeks Rs. 39,565 cr. for drought relief from Centre



Out of 16,682 revenue villages in the State, 13,305 villages have been identified as drought-affected.

The Tamil Nadu government, which recently declared all 32 districts as drought-affected, has urged the Centre to sanction a sum of Rs. 39,565 crore from the National Disaster Response Fund to provide relief to the farmers for the damage caused due to the drought situation.

The sum was necessary to provide relief to the farmers for the damage caused to the crops due to the failure of the monsoon; to ensure drinking water supply; for maintaining adequate fodder availability; and for generating employment programmes, Chief Minister O. Panneerselvam has said in a letter to Prime Minister Narendra Modi.

An official release issued on Monday said, Mr. Panneerselvam requested the Prime Minister to depute a team from the Centre to study the extensive damage caused to agriculture crops and to take stock of the drinking water scarcity in the State. The Chief Minister sought an urgent sanctioning of a sum of Rs.

1,000 crore as ‘on account’ payment from the NDRF to enable taking up immediate relief and rehabilitation measures to mitigate the drought situation.

The Chief Minister referred to the damage incurred by the State due to the heavy floods in 2015 and cyclone ‘Vardah’ in December last year and said the funds available with the State government was “not sufficient to meet the situation”. The State was in “urgent need of assistance” from the NDRF to take up immediate relief and rehabilitation measures.

Out of 16,682 revenue villages in the State, 13,305 villages have been identified as drought-affected. The ground assessment exercise carried out in 1,564 villages revealed that in about 87 per cent of the area, the extent of damage was more than 50 per cent indicating that the drought is ‘severe’ in a majority of villages. “The situation is likely to worsen in the ensuing months as the North-East monsoon has come to an end and further rains are not part of the normal pattern,” he said.

The Chief Minister added that the drought situation in Tamil Nadu has been exacerbated by the non-release of water by Karnataka in accordance with the final order of the Cauvery Water Disputes Tribunal.

A detailed memorandum from the Tamil Nadu government along with the Chief Minister’s letter was submitted at the Prime Minister’s Office in Delhi by Commissioner of Revenue Administration K. Satyagopal and Revenue Secretary B. Chandra Mohan on Monday, the release said.

IFFCO Kisan SEZ ordered to return tank to farmers



District Collector conducts inquiry after prolonged agitation and court order

NELLORE: After a prolonged agitation, the farmers of Racharlapadu and Regadi Chelika villages near Nellore city could get orders from the district administration in favour of them with regard to the rights over the large village tank spread in an extent of over 60 acres in the Racharlapadu panchayat limits.

This tank land has been in the possession of the IFFCO Kisan SEZ (special economic zone) which has taken over this land years ago for using it for the industries and factories to be developed in the SEZ lands.

The farmers began an agitation later stating that their livelihoods would be lost totally if the village tank was to be given for industrial development.

After years of agitation, the farmers' leaders approached the High Court and filed a petition saying that their rights were encroached upon with their village tank being taken away by the Kisan SEZ in the name of bringing in industries and factories.

The court had directed the district administration a few weeks ago to conduct a full enquiry and order the Kisan SEZ management to ensure justice to the farmers.

Following this, District Collector R. Mutyala Raju along with officials from the irrigation, panchayat raj, revenue departments and the Andhra Pradesh Pollution Control Board (APPCB) visited the IFFCO Kisan SEZ and inspected the entire stretch of over 2,774 acres land given to it way back in 1996 itself.

Mr. Raju and his team of officials also interacted with the farmers and received their feedback on the status of the 60 acres village tank at Racharlapadu. After considering the details from both sides, Mr. Raju ordered the Kisan SEZ management to vacate and hand over the tank to farmers.

“Yes, these orders have been issued already. We have also received a copy here. The SEZ management is expected to take action soon in this regard,” said D. Ramakrishna, Tehsildar, Kodavaluru mandal, in which SEZ lands are located.

Urea factory controversy

Since the beginning, the Kisan SEZ has been embroiled in a series of controversies. The initial concept was to develop a huge urea factory in the SEZ centre for which 2,774 acres were acquired in 1996. This comprised patta, government and endowment land.

The farmers expected huge benefit if the factory materialized. But the management could not show any progress in regard to the setting up of the urea factory.

Following protests from farmers, the government gave up the idea and decided to develop Kisan SEZ in this land, the objective being development of agricultural production related industries.

Farmers want inter-linking of rivers

A total of 22 farmers, including seven men and 15 women agricultural labourers, were honoured at a function organised by Thilagavathiar Tiruvarul Adheenam here on the occasion of 'Pongal' festival on Thursday.

The farmers were identified during the course of surprise visit to the fields by a group of office-bearers of the Adheenam last week. This is the tenth consecutive year that the Adheenam has been organising the celebration to honour the farmers.

Speaking on the occasion, Dayananda Chandrasekara Swamigal, head of the Adheenam, said farmers were seen toiling hard in four villages -- Therkku Thoppupatti, Kovilur, Vamban Four Road area and Kothakottai. Severe drought-prone condition had been a challenge to them, he said.

R. Kaliyaperumla, secretary of Navalar Naattar College, honoured the farmers with 'Pongal' gift that included jaggery, sweets, sugarcane and clothes, besides a certificate.

S. Ramadas, chairman of Ponmari group of educational institutions and R. Vairavan, chairman of Chenduran group of educational institutions offered felicitations.

The farmers, in their feedback, said that interlinking of the Cauvery-Kundaru-Vaigai project should be implemented for improving agricultural prospects in Pudukottai district. Kanagaraj, a farmer of Kothakottai, said that though the project had been mooted decades ago, it was yet to be implemented. The project, if implemented, would not only ensure assured irrigation for Pudukottai and neighbouring districts but also stabilise ground water table.

Papathi Ganesan, another farmer from Theruku Thoppupatti said that a survey was conducted, after the floods in 2005, for diverting the surplus water from Coleroon in Tiruchi to the water-starved Pudukottai district. In 2005, large volume of water was let off into the Bay of Bengal.

They explained that the drought-prone condition had forced the agricultural labourers to rely on the Mahatma Gandhi National Rural Employment Guarantee Scheme.

Farm technology platforms in focus

Discussions on development of open agricultural technology platforms that are easily accessible and affordable to farmers in all rural areas in the State were held on Sunday, the second day of the FOSS Young Professional Meet (FYPM).

The meet, held at Mascot Hotel in the capital, was organised by ICFOSS, an autonomous institution of the government of Kerala, mandated with the propagation, promotion, and development of Free and Open Source Software (FOSS) and related domains.

350 delegates

More than 350 delegates consisting of students, young software developers, and enthusiasts delivered presentations on a variety of emerging areas under the lead theme 'FOSS for sustainable development' and participated in a project contest on the theme.



Temperature falls to -7°C in Kashmir: In freezing Valley, anger over erratic power supply

"We live in a metered area. Despite that we get electricity for hardly a few hours," a Srinagar resident said.



After heavy snowfall at Harwan in Srinagar on Tuesday. Shuaib Masoodi
Anger is brewing in Kashmir over a major power crisis. Most parts of the Valley receive less than six hours of electricity daily even as the mercury has plummeted to as low as -7°C this season. Frequent and long power cuts have triggered sporadic protests over the past two weeks. Residents have accused the

government of “revenge”, saying they were being punished for the four-month-long protests in summer.

“This is the worst power crisis in more than two decades,” said Nisar Ahmad, a Srinagar resident. “We live in a metered area. Despite that we get electricity for hardly a few hours.’”

The situation in north and south Kashmir is not much different, with metered areas getting less than six hours of electricity. “We get electricity for 15 minutes and then it goes off for two or more hours,” said Niyaz Ahmad Mir, a Sopore resident. “Over the last month, I have not seen bulbs glowing for more than two hours at a stretch. The situation in the non-metered areas surrounding us is worse.’”

A Power Development Department official expressed his helplessness, but added that they are able to supply power for almost six hours daily. “We are helpless. We have to properly distribute distribute what we are being supplied. While we provide electricity to one area, we switch it off in the other,” he said.

Shahnaz Majeed, a college student in Srinagar, said, “We are being punished for what happened during summer. If they (government) can supply uninterrupted power to Jammu and Leh, why cannot they supply it to us for at least 12 hours a day?’”

Minister Nayeem Akhtar passed the buck. “We feel ashamed, sorry but we cannot help unless the people cooperate and reduce the consumption, especially during peak hours,” he told The Indian Express. “When we were in power in 2002, we had promised round-the-clock electricity for metered areas. The people voluntarily came forward and there was discipline... But in 2008 elections, the slogan (of NC) was meter hatao, heater jalao (remove meters and switch on the heaters) and that culture was broken.’” He denied allegations of revenge. “It is not only funny but also cruel,” he added.

In Jammu, the NC staged a walkout from the legislative assembly. “There has been no electricity in many areas of Kashmir for the last two to three days,” said NC lawmaker Ali Mohammad Sagar.

Deputy CM Nirmal Singh, who is in charge of the power portfolio, claimed that 80 per cent electricity supply infrastructure had been restored.

THE HINDU BusinessLine

Industry expects sales of 4.20 crore packets next kharif

Hyderabad, January 17:

After losing out about 20 per cent area to pulses, cotton is set to regain the lost ground in the upcoming kharif season.

With prices of pulses crashing, farmers are expected to go back for cotton next season. The seed industry expects a growth of 20 per cent in sales next season over the 3.6 crore packets it sold last year, or an increase of 60-65 lakh packets.

Dramatic increase in cotton prices this year too is likely to make farmers to come back to the crop. After a disastrous season the previous year, cotton prices touched ₹6,100 a quintal at the peak in September 2016, as against ₹1,500-2,000 in September 2015. Those grew cotton this season reaped good returns.

However, farmers found pulses hard to be remunerative. “We expect a big shift in North India. Cotton will make a return in those areas. Those farmers who shifted to pulses over the last three years because of higher prices of those commodities, will come back to cotton as prices have fallen,” P Satheesh Kumar, former president of Seedsmen Association of Andhra Pradesh, told *BusinessLine*.

Though the industry pegged sales of 4.40 crore packets in the beginning of the season in 2016, actual numbers showed that farmers consumed only 3.60 crore packets because of increased interest among farmers in pulses. In the Telangana, it was redgram that made a dent into cotton area, along with pulses in some areas.

The north consumed 50-55 lakh packets as against the normal acreage of 80 lakh packets. The industry expects a consumption level of 75 lakh packets in the region. Cotton acreage fell down to about 103 lakh hectares in 2016-17

from 116 lakh ha in 2015-16, resulting in a drop of production to 351 lakh bales from 338 lakh bales during the period.

The area saw a peak in 15 years in 2014-15 as farmers grew cotton in a record 128.46 lakh ha that year. This resulted in a bounty for the cottonseed industry. It registered sales of over 5 crore packets that year. We have been seeing a decline ever since.

This time, however, the industry foresees a re-bounce of interest in cotton. This is despite huge number of deaths reported in cotton-growing areas in seven States.

With pink bollworm developing resistance to Bollgard-II technology and attractive prices in other crops resulted in a drop of area in the last two years.

“Though we don’t expect it to grow to the highest level, the acreage would certainly grow by at least 20 per cent,” Satheesh said.

Inventory

The industry sees no problem in the availability of seeds. “There are no issues on (seed) production front. There were good rains and irrigation facilities. The industry has good inventories too to back up,” Satheesh said.

Jaipal, a farmer from Warangal, said favourable weather in 2016 and a good market helped farmers get good prices. “The Centre had asked the farmers not to grow cotton keeping in view a very bad season in the previous year. Fear of poor performance of Bt cotton too, made some farmers keep off from cotton. But favourable weather has changed it all. We got good prices this time and we hope the trend will continue next year as well,” he said.

Vizag’s Anakapalle jaggery market back on even keel



The Jaggery market at Anakapalle in Visakhapatnam district has returned to normal two months after demonetisation, and the trade, farmers and the labour are now quite comfortable with cashless transactions.

For a month after demonetisation, according to the trade and farmers' representatives, the going was very difficult and there were apprehensions that the season might be ruined, but "fortunately those apprehensions have not come true and the market has absorbed the shock", according to KV Sarat, the president of the Anakapalle Jaggery Merchants' Association.

At present, after the Sankranti festival, the market reopened on Tuesday and the rates for black Jaggery are in the range of ₹270-280 per lump (weighing on the aggregate 16 kg or so) and the better varieties are fetching ₹320-330 per lump. The arrivals are 15,000-16,000 per day and the trade expects the trend to continue till the second week of April and then the arrivals taper off. By the second week of May the season will be over.

Learning the hard way

Sarat said cash transactions were going on almost 100 per cent at the market yard, "before the shock administered by Prime Minister Modi. Initially it was extremely difficult, almost impossible, to transact business. But most of the farmers have since opened bank accounts, and now we are paying by cheque or through fund transfer. Now there are no hassles."

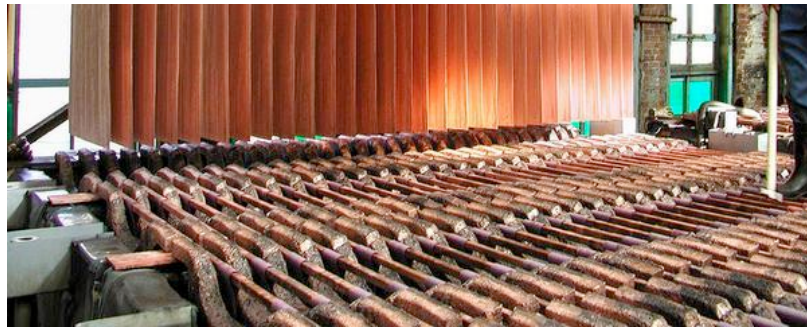
Paying the labour at the market yard proved a bit more difficult, but "the problem has been resolved. We now pay the money into the account of the 'maistri' (heading a group of 15 labourers or so) and he in turn issues cheques to the individual labourers."

P Govind, another merchant who sells Jaggery to upcountry markets in West Bengal, Odisha and Jharkhand, said the markets there also had settled down and "now we are facing no problems in transacting business. Hopefully, there will be no further shocks."

Welcoming the hike in cash withdrawal limits coming into effect from Tuesday, he said, "The daily ATM withdrawal limit of ₹10,000 is most welcome. It may be more than enough for the farmers or workers. But the merchants should be allowed to draw more through the current accounts."

During the last season, 29 lakh lumps of Jaggery were sold at the market yard and the number this season may approximately be the same, according to him.

Downside limited for MCX-Zinc



The Zinc futures contract traded on the Multi Commodity Exchange (MCX) made a high of ₹189.7 per kg on Friday and has come-off from there.

It is currently trading near ₹183. Key support is in the band between ₹182 and ₹181 which is holding well. The next important support is at ₹179. As long as the contract sustains above ₹179, a rise to ₹190 is possible in the coming days. In such a scenario, a range bound move between ₹179 and ₹190 can be seen for some time. Within this range, the bias would remain bullish. A subsequent break above ₹190 can boost the bullish momentum. Such a break can trigger a fresh rally to ₹200 and ₹205 once again.

Short-term traders can make use of dips to go long near ₹181. Stop-loss can be placed at ₹176 for the target of ₹190. Revise the stop-loss higher to ₹184 as soon as the contract moves up to ₹188.

The contract will come under renewed pressure if it declines below ₹179 decisively. Such a break, though looks less probable at the moment can take the MCX-Zinc futures contract lower to ₹175 initially. It will also increase the possibility of the contract testing ₹170 levels once again.

Note: The recommendations are based on technical analysis and there is a risk of loss in trading

Coconut oil prices up on rising demand, supply crunch

Kochi, January 17:

Corporate entry to purchase copra at higher levels perked up coconut oil prices this week.

It is reported that a leading Mumbai-based company engaged in branded coconut oil has offered an increased price of ₹600 per quintal to copra.

This has pushed up prices of coconut oil, touching ₹11,200 per quintal in Kerala. Copra prices also increased to ₹7,800 per quintal from ₹7,500 last

week. However, due to Pongal Holidays, coconut oil trading was not active in Tamil Nadu.

Besides corporate buying, prevailing drought conditions in Tamil Nadu also affected copra arrivals from various production centres. The supply crunch due to the raw material availability was another reason for the hike, Thalath Mahmood, President, Cochin Oil Merchants Association (COMA) said. The market, he said, is witnessing strong upcountry demand and there are reports that certain companies have increased copra intake to tide over supply shortage, at higher prices, to meet production requirements. In this emerging scenario, he said the market is likely to go up in the coming weeks.

However, the currency demonetisation and subsequent cash crunch made its impact on the farming community badly, as the transactions in the traditional coconut oil sector usually takes place through a cash-and-carry mode. Farmers are facing innumerable difficulties in making their payments for copra loads due to cash restrictions imposed by the banks.

Bharat Khona, former Board member, COMA, wondered whether these corporate companies that which made higher offer prices for copra may go for continuous buying . The surge in copra prices is evident in the loose oil market, which stood at ₹1,800 for 15 kg.

Gujarat govt starts tur purchase at MSP

Ahmedabad, January 17:

The Gujarat government on Tuesday announced commencement of the procurement of pulses (tur) at the minimum support price (MSP) levels as the market prices continued to dwindle amid higher crop estimates.

Government agencies through the Centrally appointed nodal agencies NAFED and FCI started tur procurement at MSP rates ₹1,010 per 20 kg or ₹5,050 per quintal at Jamjodhpur or Jamnagar district in presence of State agriculture minister Chimanbhai Sapariya. In Gujarat, GujCot and Gujarat State Warehousing Corporation started the tur procurement at the MSP rates.

According to the government statement, tur sowing has touched 3.36 lakh hectares this year, which will see production of tur at 3,52,000 tonnes.

For the year 2016-17, the Centre has fixed tur MSP at ₹4,625 and additional ₹425 as bonus, which works out to Rs. 5050 per quintal. However, market prices remained lower than the MSP rates amid higher crop prospects, the government decided to procure at MSP, benefiting farmers.

Giving an update on the groundnut procurement at the MSP rates, the minister Sapariya stated that so far state government agencies have procured groundnut

to the tune of 1.62 lakh tonnes worth ₹680 crore. The price is being paid to the farmers through RTGS directly in their accounts, the minister informed in a statement.

An app that makes life easier for aqua farmers

Hyderabad, Jan 17:

Here is what two aqua farmers developed for folks here. Ramachandra Raju and Venu Dantuluri comes up with an app that helps aqua farmers improve yields and quality of the produce. The app, Aqua App, targets 75,000 aqua farmers along the Andhra Pradesh coast, listing out manufacturers of the feed and avoiding the middlemen in transactions.

Venu, along with investor Prakash Dantuluri has put in a seed fund of \$1,00,000 to develop the app.

Available in in Android and iOS app stores, the app also provides information about the weather, latest information in the aqua industry and market prices, giving the farmers visibility of the complete ecosystem.

“Over 1,000 farmers have downloaded the app so far. They have seen value in the app as it provides real-time information on weather and prices,” Venu Dantuluri said in a statement on Tuesday.

"Farmers get advice on feed, get direct access to top manufacturers and daily market prices," Ramachandra Raju, who is the President of Delta Fish Farmers Welfare Association, said.

Venu said the team would like to reach out to all the 75,000 aqua farmers in the State in the next few months. “After getting good numbers in Andhra Pradesh, we would like to target the aqua farmers in Odisha and West Bengal,” Venu said.