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THE HINDU

TNAU develops better efficiency stoves

In India, 80 per cent of the total population lives in villages. The major energy demand of rural population is for cooking which contributes to about 98 per cent of their total energy consumption.

Wood, agricultural waste and biomass are used as fuel in rural kitchens. Conventional stoves (chulha) take more time for cooking, more difficult to fire and consume more fuel.

Traditional stoves

They also waste a lot of energy and pose many pollution hazards. Most traditional stoves can utilise only 2 – 10 per cent of the energy generated by the fuel.

The growing gap between availability and demand for firewood caused by traditional stoves forced technologists to concentrate their attention on improving the thermal efficiency of stoves.

In view of this the department of Bioenergy at the Tamil Nadu Agricultural University, Coimbatore has developed a single-pot chulha.

The single-pot chulha has a double wall with a gap of 2.5 cm. It has a grate at the bottom of the combustion chamber. The ash can be collected below the grate. The outer wall has two rectangular secondary air openings on both sides at the lower portion.

The inner wall has 1 cm diameter holes which maintain a triangular pitch of approximately 3 cm. Separate mounds are provided for holding bigger and smaller vessels.

The secondary air enters through the rectangular opening in the outer wall, gets heated in the annular chamber and distributed through the holes in the combustion chamber. The preheated air helps in proper burning of the fuel.

Double pot

Another one called double pot portable chulha (chimney-less) is made with two walls with an air gap of 2.5 cm. There are two secondary air

inlets, one on the outer wall with rectangular shape (17 cm x 1 cm) near the combustion chamber and the other a circular hole of diameter 5 cm at the bottom of the second pot. A cast iron grate is placed at the bottom of the combustion chamber.

Those interested can contact the department for further details and availability of the chulhas.

(Dr. S. Kamaraj, Professor and Head, Department of Bioenergy, TNAU, Coimbatore, Phone: 0422-6611276 (O), 94439 34139 (M))

Emergency summer action plan in place for Chittoor

The Chittoor district administration on Wednesday launched the strategic summer action plan to counter irrigation water scarcity and fodder crisis in villages in the next four months.

District Water Management Agency (DWMA) Project Director S. Rajasekhar Naidu held an emergency review meeting with officials of agriculture, horticulture, sericulture and animal husbandry departments at the Collectorate here and took stock of the prevailing conditions at the field level in the allied sectors. The meeting discussed steps to salvage tomato cultivation in over 6,000 hectares in the district through drip irrigation.

The action plan includes repairs to bore-wells and supply of water to affected areas using tankers. The DWMA official directed officials to come out with an action plan by Saturday. He said steps were initiated on a war footing to overcome shortage of fodder in the western mandals, by procuring stocks from Srikalahasti and other eastern mandals, and from the neighbouring Nellore district. The officials were also told to extensively tour rural areas.

Flower show begins tomorrow

The Agriculture Department in co-sponsorship with the Tourism Department is hosting the 29th edition of 'Flower and Farm Fiesta 2015' from March 6 to 8 at AFT Grounds.

Exotic varieties of foliage and flowering plants from different parts of the country will be on show. Besides, the Agriculture Department's own green house grown products will be displayed.

Vegetables and fruits will be an added attraction in an event which is designed to entertain and educate farmers, youth and the general public.

Chief Minister N. Rangasamy is scheduled to launch the event.

Partner institutions include the National Horticulture Board, Bengaluru, Indian Institute of Crop Processing Technology, Thanjavur, Sugarcane Research Station, Cuddalore, Vegetable Research Station, Palur, PAJANCOA and Research Institute, Karaikal, National Horticulture Mission, Puducherry, KVK, Puducherry, Agriculture Technology Management Agency, Puducherry.

The event is a platform for research institutions to showcase technological developments in floriculture for the benefit of farming community and visiting public. Various competitions are being organised and prizes given for each event.

The other objectives include showcasing products of entrepreneurs, publicising schemes of the Agriculture Department and allied sectors and providing a competitive platform to motivate farmers, students and the public.

The forum also seeks to provide an extension platform to educate the rural and urban people in technical knowhow on horticultural front, facilitate buyer and seller meets in marketing agricultural and horticultural inputs and designing marketing strategies.

‘Another revolution needed in Indian agriculture’



Highlighting nutritional security as a major issue of the current era, Padma Bhushan Rajendra Singh Paroda, chairman, Trust for Advancement of Agricultural Sciences, New Delhi, has said that increasing agricultural productivity was the only way to address hunger and malnutrition in India.

He was delivering the address at the fifth convocation of the University of Agricultural Sciences, Raichur, here on Wednesday.

He said that India would need 70 per cent more food to meet its demands by 2030 when it would be the most populous country in the world.

“Despite producing over 264 million tonnes of food grain a year, three out of every five children below 5 years of age are malnourished at present. The most protein malnourished children reside in South Asia more than sub Saharan Africa,” he said.

Considering the limited land resources, he added, there is a need to drastically improve productivity and more production with less costs through scientific farming by harnessing the fruits of Geographic Information Systems and land use planning, biotechnology and nanotechnology.

“It is the only way to eliminate malnutrition and achieve nutrient food security goals. The successive governments need to realise the challenges and come up with policy and investment support for achieving the goals,” he said.

As many as 171 undergraduates and 106 postgraduate students, including 10 doctoral degree holders, were given their degrees by Governor and Chancellor of the university VajubhaiVala.

University Gold Medals and cash prizes were distributed to toppers in various streams and courses.

GurupadalingaSwamy of Kalaburgi was honoured with ‘Farmer Scientist’ award. Achievers in teaching, non-teaching, research, extension and other fields were honoured with awards and cash prizes. Minister of Agriculture for State and Pro-Chancellor of the University Mr. Krishna Byre Gowda, Vice Chancellor Dr. P.M. Salimath and others were present

‘Fund allocation inadequate for programmes announced’

S. Narayan, former Economic Adviser to the Prime Minister of India, said the fund allocation in the union budget seemed to be inadequate for the implementation of the announced programmes. He was addressing a post-budget analysis organised here by the Cochin Chamber of Commerce and Industry, in association with Institute of Cost Accountants of India (ICAI) and Institute of Company Secretaries of India Kochi Chapter (ICSI).

He said the mismatch could affect the performance and delivery of the budget promises, including the proposed 'Make in India' campaign.

The government must focus on the revenues and they need to work towards a balance in the tax-GDP ratio. Referring to the issue of black money, he said that deterrent punishment would be essential to curb the evil.

He said that the budget presented by the finance minister had adopted a new approach.

The budget had spelt out a good design for projects related to infrastructure, agriculture and social welfare. The success of the budget would depend on its effective implementation, he said.

Agriculture price panel has nothing to do with pricing

Karnataka Agriculture Price Commission (APC), which was perceived as one of the noteworthy initiatives of the State government to protect farmers from market price fluctuation, is apparently going through a rough patch on account of increased government pressure to not take up the task of crop pricing. Ironically, that was precisely the task it was set up for.

Before the setting up of the APC, Minister of State for Agriculture Krishna Byre Gowda consistently maintained that the APC would have powers to fix minimum support price (MSP) for crops. However, after its constitution, it seems that the body has not been allowed to give priority to pricing.

The APC meeting in Bengaluru on Monday was a continuation of conflict between members and government representatives. Sources alleged that the Minister had expressed the government's inability to procure crops at a scientific MSP. He asked them to concentrate not on pricing, but on other tasks such as analysing local, national and global markets, recommending the crops to be cultivated for the year, and suggesting innovative cultivation methods to achieve greater yield at a lower cost.

Two reports

He also reportedly told the APC that the State suffered a loss of Rs. 450 crore last year as it procured maize at an MSP of Rs. 1,300 a quintal and later sold it at Rs. 800 a quintal.

The APC has, so far, submitted two reports to the government after it came into existence in July last year. Both the reports have predominantly focussed on non-pricing recommendations. While the first report recommended measures to strengthen and expand ragi and white jowar cultivation, the second one suggested steps to encourage the cultivation of 11 major crops that could make farmers economically stable.

GVMC readies to pump water from Yeleru reservoir



GVMC Commissioner Pravin Kumar observing the pumping of Godavari waters to GVMC.

With falling water levels at Yeleru reservoir, the mainstay of supply for city, precariously moving towards dead storage level in the next few weeks, Greater Visakhapatnam Municipal Corporation is biting the bullet and making arrangements for pumping.

The present level at Yeleru reservoir is 74.63 m and the dead storage level is 72.5 m. Once the dead storage is reached water does not flow by gravity from the reservoir to Yeleru Left Main Canal that runs more than 150 km to Kanithi Balancing Reservoir. Of the roughly 66 mgd, including supply to Visakhapatnam Steel Plant (VSP), required for the city, 35 to 36 mgd come from YLMC making it the lifeline. Deficit rainfall has led to the critical situation, say officials.

“Depending on agricultural supply to East Godavari district that is hovering around 800 cusecs as of now, we are gearing up to pump water anytime after 20 days. If farm supply eases, the pumping may be delayed by a few days,” Municipal Commissioner Pravin Kumar said after an on-the-spot assessment at Yeleru reservoir on Wednesday. GVMC was determined to maintain the normal supply at 115 liters per capita per day, he said.

To tide over the water situation during the three summer months from March, the Visakhapatnam Industrial Water Supply Company

(VIWSCO) will spend Rs.11 crore of which Rs.8 crore is for pumping for 90 days.

Mr. Pravin Kumar said the permission of the Chief Secretary was obtained to draw 50 cusecs more, apart from the present 150 cusecs, to maintain domestic supply as well to the steel plant.

Funds sought

About Rs.3 crore would be spent on strengthening bunds, preventing pilferage, patrolling etc. VSP would make arrangements for pumping. GVMC has sought funds from the government under the summer contingency plan.

Mr. Pravin Kumar, who visited the lift scheme of VIWSCO at Kateru near Rajahmundry, said two motors were in working condition and another was being readied. Tenders would be called for keeping the remaining two standby motors also ready and 100 cusecs would be pumped from it into Yeleru canal by pipeline.

An approach channel would be formed to improve water availability at the pumping point. It would cost Rs.49 lakh. Water availability has been low in view of the agricultural demand that is expected to continue till April 15.

Chief Engineer N. Durga Prasad, Advisor to VISCOW N. JaganmohanaRao and SE (Projects-1) A. UmamaheswaraRao accompanied the Commissioner.

Land for Adivasis: allocation hiked

The allocation for providing one acre of land to Adivasis in Wayanad has been enhanced from Rs.10 lakh to Rs.20 lakh.

A sum of Rs.35 crore will be provided this year for this purpose. Those with sickle cell anaemia will get priority, Chief Minister OommenChandy has said.

He was talking to presspersons after his weekly Cabinet meeting on Wednesday.

The Cabinet decided to allot 50 cents of land in Pallichalpanchayat in the capital district to Nemom block panchayat to set up a hi-tech dairy project.

The Chief Minister said the family of S. Shaji who died after a suicide attempt at the Thumba police station and autorickshaw driver Rajeev who was killed after an accident during a vehicle check at Kanjiramkulam would be given Rs.5 lakh each.

Three persons who were killed after a police van rammed into a crowd at Ezhamkulam, near Adoor, would also get Rs.5 lakh.

On the posting of the Secretary of the Public Service Commission, Mr. Chandy said there was no change in the stand taken by the government, and the matter was now before the Governor.

On the differences between Agriculture Minister K.P. Mohanan and Excise Minister K. Babu over Neera, Mr. Chandy said Mr. Mohanan wanted Neera to be treated as an agriculture product, while Mr. Babu was for a 'watch' by the Excise Department to prevent its misuse.

Health Department sounds alert on A(H1N1)

Health authorities in the district have sounded an alert on Influenza A(H1N1), urging people to watch out for the symptoms and follow basic directions that will help prevent occurrence or spread of the disease.

The alert comes in the wake of a recent death caused by the infection in Malappuram district and four cases tested positive in Kozhikode district in the past four months.

District Medical Officer P.K. Mohanan on Wednesday listed the following symptoms: high fever, cough, throat pain, runny nose, body pain, and severe headache.

Symptoms

If anyone shows symptoms of the influenza, they should get diagnosed by a doctor immediately and undergo the required treatment and complete rest for a week. Do not travel unless for treatment, Dr. Mohanan said. Drink plenty of water to avoid dehydration and eating nutritious food is vital to tackling the virus.

The virus spreads through the cough and sneeze droplets from an infected person. It can spread through touch also, if the infected persons had coughed or sneezed into their palms and had not washed them.

Shaking hands with such persons or touching materials they had touched heightens the risk of contracting the virus. The public must cultivate the

habit of sanitising their hands before touching the nose or mouth, in order to prevent contracting the virus. People should cough or sneeze into a handkerchief.

Pregnant women must be very cautious as they are very vulnerable to contracting the virus. The others falling in the high-risk category are diabetics, young children, the elderly, and persons who have undergone kidney transplantation, because all of them have low immunity. Kidney transplant patients are vulnerable because they are on immuno-suppressants that help prevent the rejection of the transplanted kidney.

The Department of Health Services in the district has made arrangements to treat H1N1 cases in all government hospitals above the level of Taluk hospitals, Dr. Mohanan said.

Pet food processing unit inaugurated



To develop skills in pet food preparation, and encourage students to take up it as a commercial venture, a pet food processing unit, established at a cost of Rs. 60.25 lakh, was opened at the Veterinary College and Research Institute here recently.

S. Thilagar, Vice-Chancellor, Tamil Nadu Veterinary and Animal Sciences University, inaugurated the facility at the Department of Livestock Products Technology (Meat Science).

K.A. Doraisamy, Dean of the institute, faculty, among others were present during the occasion.

The unit operates with the rationale of using spent hen meal, or meat bone meal in pet food manufacture and preparation of good quality pet food for different categories of pets according to their nutritive requirements.

The objective is to develop skills in quality pet food preparation, and impart training to students in order to help them take up it as a commercial venture, faculty said.

Appropriate manuals and guidelines will be developed for the preparation of pet foods.

Those interested will be given entrepreneurial training in pet food processing. The pet food will be sold through the Tanuvas units after the standardisation of pet food formulations, and processing procedures.

94 green houses constructed

Ninety-four solar-powered green houses have been constructed at a cost of Rs. 197.4 lakh so far in Tirumayampanchayat union in the district during 2014-15.

The plan is to construct 160 houses at a cost of Rs. 2.10 lakh each. Rest of the houses will be constructed soon, said S.Ganesh, District Collector, who inspected the construction of houses on Wednesday. Under individual toilet scheme, 999 toilets have been constructed so far. Mr.Ganesh appealed to the people to construct individual toilets in their houses under the scheme.

The Collector inspected various construction works, including individual toilets at Pulivalampanchayat, a goat shed at Kottaiyurpanchayat, and a toilet under BharathAbhiyan scheme.

He visited the middle school at Kottaiyur where he interacted with students and checked the quality of noon-meal. He also told officials to take steps to provide drinking water facility to devotees during IlanjavarMarimman festival.

Ambulance to be purchased for sheep

Karnataka Sheep and Wool Development Corporation chairman PanditraoChidri has said that steps have been taken to purchase 18 ambulances for treatment of sheep.

Mr. Chidri told presspersons here on Wednesday that every ambulance would have medicines required for immediate treatment and a doctor would be deputed during emergency. In the initial phase, it would be launched in places with more number of sheep and it would be extended to other districts in phases.

There are 1.5 crore sheep across the State and a Rs. 35-crore proposal had been sent to the government for providing them medicines, fodder and drinking water.

GCDA's kitchen garden project

Mayor Tony Chammany has extended support to the nature club initiative of the Greater Cochin Development Authority aimed at generating pesticide-free vegetables and ensuring food security.

Mr. Chammany said that the Kochi Corporation is ready to provide fertilizers free of cost besides joining hands with the authority in marketing the products. He was speaking at the distribution of seeds and fertilizers to beneficiaries under the GCDA's 'EnteAdukalathottam' (my kitchen garden) project here on Wednesday.

The Mayor said that the Corporation will extend all help to the initiative that would boost production of vegetables in the State and achieve self sufficiency, he said. GCDA Chairman N. Venugopal said that the corporation has plans to widen the scope of the project by involving the residents associations in Ernakulam. Cash prizes will be given to people, who successfully participate in the initiative, he said.

Rise in demand for tender coconut



The demand for tender coconut is expected to increase in the coming months with the onset of summer.

In view of the increased demand, the expected level of coconut is not reaching copra processors, according to the Coconut Development Board.

Conducive climatic

Though climatic conditions are conducive for making copra in major coconut growing States, arrival of coconut is not improving due to the increased demand for tender coconut. In view of the supply constraints being experienced by processing units, copra production is unlikely to improve at least for the next two to three months. Whereas export of fresh coconut to countries of the Gulf Cooperation Council, dry coconut to Pakistan and virgin coconut oil to the U.S. has showed considerable increase since December 2014. Virgin coconut oil export to the U.S. has shown an unprecedented increase since December 2014, the CDB said in a press release here on Tuesday.

The Coconut Farmer Producer Organisations (FPOs) formed in major coconut growing areas are active and many of them have started aggregation of the produce and arranging for primary processing and marketing.

Upcountry markets

In Tamil Nadu and Karnataka, the FPOs have already started making arrangements to supply fresh tender nuts to upcountry markets. It is expected that 20 to 25 per cent of the produce shall be harvested and marketed as tender nuts, which would reduce supply of mature coconut for copra making.

The Kerala Food Safety Commissioner's special drive to prevent adulteration of coconut has also started showing results. Entry of adulterated coconut oil into Kerala, which consumes the lion's share of coconut oil in the country, is on the decrease, and is expected to reflect on the price in the coming days.

Making the most of jackfruit



A training session in preparing value-added products of jackfruit was launched at the District Industries Centre in Palakkad on Wednesday. Thirty youngsters are being trained by a group of experts.

The programme, organised by the Industries Department and voluntary organisation ExpertoCrade, aims at garnering maximum returns for jackfruit growers by finding good market for their produce.

“Our aim is zero wastage of each jackfruit. Value-added products made by these trained youngsters will help in marketing the fruit properly and ensure a steady income for farmers,” said Mangaluru-based activist Shree Padre, who is leading the expert team from ExpertoCrade.

Varieties of jackfruits — varying in colour, taste, and size — were on display. Jackfruit-based ice cream, chocolate, squash, jelly, juice, bonda, papad, chips, peda, and halwa had ample number of admirers.

“The intention of the workshop is to send across a message to farmers that they can earn more by making value-addition to the crop, which is mostly underutilised. Jackfruit peda and halwa have huge demand in the international market. Jackfruit chocolates are also a hit,” said C.D. Suneesh, who is part of the team.

PadminiSivadas from M.S. Swaminathan Research Foundation, who led the demonstrations, said she could make 350 products from jackfruit. “The fruit grows abundantly in India. But we waste a lot of it. When

hoteliers conduct jackfruit festivals, plates are wiped clean in no time. But small-scale initiatives get very little support,” said Mr Padre.

“We are worried about food security. It is then criminal that we waste approximately 75 per cent of the jackfruit we produce. It can ensure food security,” he said.

The history of water management



With summer round the corner, most of us are already worried about water scarcity this season. Experts have done their bit by sounding the alarm on the depleting water table. But have you ever wondered how are ancestors used, managed and conserved this elixir of life?

When it comes to effective conservation, distribution and management of water, one cannot dispense the role of King KarikalChola, who built the Grand Anaicut across River Cauvery. There are several historical evidences to prove that ancient Tamil rulers had effective water management systems in place in their respective kingdoms.

The Pandiya kings constructed check dams across River Vaigai. King MaravarmanArikesari, also known as Koon Pandiyan, who ruled Madurai during Seventh century built a check dam across Vaigai and named it after himself. It is near the KuruvikaranSalai road and archaeologists have found a stone inscription there. Likewise, King ParakramaPandiyan constructed a check dam Sitranai in Kuruvithurai near Madurai. He also extracted granite from the nearby hill Kuruvikal and built a stone quarry. Stone inscriptions in KuruvithuraiPerumal Temple record this.

In the olden days, exclusive groups were constituted for the upkeep of the water bodies. These were the *rivariyam* (lake board) and *kalinguvariya*m (sluice board). According to B. Thirumalai and R. Sivakumar, authors of 'VaiyaiThadamThedi', the landmark ruling of Sri VallabhaPandiyan, who established the riparian rights of the lower ayacut farmers, is remembered even today. "The case of a landlord cutting off the main channel by digging a channel upstream and depriving farmers of the lower areas was brought to the King," says Sivakumar.

"The practice of creating a water body to help people has been there for ages," says C. Santhalingam. Secretary, Pandya Nadu Centre for Historical Research. Tamil Brahmi inscriptions recovered from Nadumuthalaikulam near Vikramangalam give evidence of existence of a 2000-year-old man-made lake. "Kings created water bodies and collected land tax from people. Pallavas constructed lakes across their kingdom and named the lakes after them. Some of the man-made lakes are ChithiramegaThadagam and VairamegaThadagam," he says.

There were also several lakes like the ThoosiMamandoorYeri near Kanchipuram, the biggest of the lot. "The rulers did not end with that. They appointed guards to stop people from polluting and created a corpus fund for the maintenance of the water body. The board used the money to desilt the lake and to distribute food and clothes for victims of floods. They also let the lake on contract for fishing and for ferrying people on coracles to generate funds. Many rich people also donated liberally," he says.

"For effective distribution there are different types of sluice gates like *Pulikanmadai* (which has three outlets). Depending upon the storage the water is released through these outlets. The one with seven outlets is located near Srivilliputhur. It is constructed by the Koon Pandiyan and to control the flow a pillar is erected at the centre of the main sluice gate," he says.

Lakes were given much importance in those days. They were quoted in Sangam literature to identify the geographical division of that place, like the Madakulakeezh which refers to the land irrigated by the Madakulam Lake.

"Predominantly an agrarian community dependent on water source, our ancestors knew the importance of conserving water. They were farsighted, sensitive to environmental issues and better equipped than the current times," concludes Santhalingam.

Showers bring cheer to farmers

Moderate rain in Kanyakumari district

Some parts of southern districts experienced unexpected showers on Wednesday that brought down the temperature and also brought cheers to farmers.

Showers for the past two days provided respite from the scorching heat experienced by residents. Catchment areas of Chitrar I registered the maximum rainfall of 64.2 mm till 8 a.m. on Wednesday, sources in the PWD said.

Rain with heavy wind, accompanied by lightning, lashed Eraniel, Aralvoimozhi and Thuckalay. A coconut tree in Edalakkudi caught fire after it was hit by lightning. Roadside trees were uprooted in Thiruvattar and Boothapandi affecting traffic for some time on Tuesday. Drizzle was reported in many parts of the district on Wednesday afternoon.

The showers brought cheer to farmers and local body officials heaved a sigh of relief in Dindigul district.

Kodaiakanal and Dindigul received moderate showers on Tuesday night. The hill station and Vendasandur experienced downpour on Wednesday evening also. Water stagnated in low-lying areas of Dindigul.

Already, residents of Dindigul have started to experience water shortage. Officials of Dindigul Corporation are worried that failure of rainfall will further worsen the situation. Residents of ward 32 picketed road in Dindigul on Wednesday, condemning absence of water supply for the past 15 days. Residents of RM Colony too picketed RM Colony Main Road with empty pots.

Some parts of Theni district received minor showers that would help farmers to prepare the land for the next season.

Rainfall registered till 8 a.m. on Wednesday (in mm) in Kanyakumari district: Chitrar I 64.2, Anaikidangu 32, Chitrar II 27.4, Kannimar 17.2, Pechiparai 16.2, Eraniel 13.2, Boothapandi 9.1, Aralvoimozhi 6.2, Thirparappu 5.8, Adayamadai 4, Colachel 3.6.

Water level in important dams :Pechiparai 27.3 feet, Perunchani 61.10, Chitrar I 5.18, Chitrar II 5.28, Poigai 10.5 and Mambalathurai 50.94 Total rainfall recorded in Dindigul district was 50.94 mm and the average rain

5.09 mm. Kodaikanal Boat Club recorded 21 mm rain, Kodaikanal Observatory 18.06 and Dindigul 11.88 mm.

Despite minor showers in Periyar dam, inflow into the dam was 250 cusecs. Water level stood at 112.3 feet and the discharge was 250 cusecs. Vaigai dam had 34.97 feet of water with an inflow of 76 cusecs and the discharge was 60 cusecs. Rainfall in Periyar dam was 12 mm. and Thekkadi 3.4 mm.

Wider spacing in crops helps tide over water scarcity



The challenge in increasing crop productivity is more especially in dry areas, where it is a tough task for both farmers and scientists alike. While digging ponds to store rainwater might be advised, the impracticality of doing it by small farmers with less than three acres is still an issue.

For such small farmers the krishivigyankendra in Bijapur, Karnataka, has developed a method to overcome water scarcity. It is a simple method where farmers are advised to plant their crops with a wider spacing between them.

Bijapur is situated in northern Karnataka and is frequently hit by droughts. This area receives an annual rainfall of 593.3 mm which is insufficient for most of the dry-land crops.

Narrow spacing

“In general, farmers adopt narrow row spacing for planting the crops. There is a standard procedure with farmers adopting their own measurements according to their choice. By doing so, there tends to be a stiff competition between the plants for moisture as the plant grows. The moisture requirement will be more especially during the peak flowering

and grain filling phases, but there will be less soil moisture leftover, thereby affecting the yield of the dry-land crops,” explains Dr. S.S.Nooli, scientist at the Kendra.

In collaboration with the All India Coordinated Project for Dry Land Agriculture and Regional Agricultural Research Station, 34 awareness programmes were conducted for farmers from 80 villages on the need for adopting this method.

The Kendra also conducted 108 frontline demonstrations for 270 farmers and suggested they plant the high yielding hybrids of pearl millet (bajra/cumbu) and sunflower provided by the kendra with wider row spacing.

Pearl millet

Farmers in Bijapur region started planting their crops with wider row spacing of 120 cm (between rows) x 5-10 cm (between plants) and were able to get 20-25 per cent better yield. Cases of infestations were also noticed to be quite low.

“We did a systematic study on pearl millet and sunflower since these two crops are quite common in this region. An additional net profit of Rs.3,910 per hectare was achieved in pearl millet and Rs.8,580 a hectare in sunflower over the conventional method,” says another scientist Dr. S.Y. Wali.

This technology is presently being adopted in 15,500 hectares in Bijapur, Bagalkot and Koppal districts of Karnataka.

Production

Crop productivity is largely determined by the amount of soil moisture. Crops cultivated with wider row spacing coupled with repeated deep inter cultivation helps to create dust mulch on the soil surface.

This dust mulch acts as a barrier from higher evaporation losses, which ultimately leads to better moisture availability and hence better yield.

Mr. V.B. Kinagi belongs to Muttagi village, Bagewaditaluk, Bijapur district. He grows onion, bajra, lime, maize and cotton in his seven acres.

“My region is very low in rainfall and I have been finding it difficult to maintain the needed moisture level in the soil for my crop. Digging a new well or sinking a bore well would cost me big money. It was then that the Kendra officials advised me to adopt a little wider spacing for my crops unlike what I was doing all these years. Initially I thought it would make no difference. But after some months I am able to see better crop growth and the moisture retention in my soil,” he says.

Cannot be generalised

Farmers should note that this project on pearl millet and sunflower was tested only in Bijapur region, Karnataka. It cannot be generalised for other states, according to the research team.

For further details, farmers can contact Dr. S.S. Nooli, scientist and S.Y.Wali Programme Co-ordinator, Krishi Vigyan Kendra, Vijayapur, Hittinahalli farm, Bijapur: 586101, mobile: 9448495346, Phone: 08352-230758, email: kvkbijapur@gmail.com, web: kvkbijapur.org



Green Ice creams and Gulal



Our family owned a mithai shop in Patna and Holi was the only time of the year when all the workers went on holiday. The shop would be shut for two or three days and the entire family would gather together to celebrate the festival. Most of the workers were from the Sitamarhi district of Bihar (on the Indo-Nepal border) and Holi was perhaps their biggest festival.

In the mornings, we would play geeliHoli with our friends which was basically the gandaholi with water and other liquids too extreme to mention in publication. By the evening we would sober up and play dry Holi a much more acceptable affair, with gulal, a tradition which is a family mainstay, something the entire khaandan could participate in. Treats such as fried malpua and gujiyas would dominate the festival, every piece made at home. One of our family friends owned an ice cream shop, and every Holi they would send out bhaang ice cream to their friends and family. A few bricks, an almost beguiling light shade of green, completely innocent in appearance but more ‘adult’ than any of the foreign brands purveyed today (yes, it had a ‘full’ effect). Suffice to say, each brick would be more than enough for each family. And the day. Alongside the thandaikamaal (yup, it was bhaang) which would be freshly ground, Holi was usually a coruscated blur of colour, family and happiness.

Variety of Thandai flavours add ‘colour’ to Holi celebrations



In this part of the country, like in most of northern India, Holi comes as a big ticket festival for the lovers of bacchus. So, while there is lot of colour and different hues of ‘pichkaris’ to play with, the city landscape here is set to get tipsy this Holi on friday, notwithstanding the weather which is set to play truant.

And so, as the people gear up for free flow of liquor in various colours, brands and tastes, the king of all intoxication here however continues to be ‘thandai’ – a concoction of dry fruits, saffron and select spices. A dash

of 'bhaang' is an added incentive for most old-timers in the town to let their hair down.

But with times, the thandai has undergone a sea change. As with other things involved in the festival of colours, the thandai now comes in various colours and types. And the new value addition is also a preferred one for most people as it is not only readymade, comes with a variety and is less sugary!

While the old traditional thandai, that is still in vogue at old city, means a lot of milk, black pepper powder, fennel seeds, rose petals, cashew nuts, almonds and much more, the new age thandai ready mix is certainly a preferred drink for the busy ones.

The market now offers a bevy of thandai mixtures with new flavours like 'aamimli', 'strawberry', 'lemon', 'shahikewda', 'aam', 'gulab', 'kesaria' and 'dry nut syrup'.

"This huge range of variety puts us in a better position to have our taste even while bonding with age-old traditions," veteran Pulkit Tandon, who admits having picked up a few bottles of thandai over his favourite brand of scotch this Holi, told IANS.

"While liquor is there for all times, thandai is largely for a day and we thoroughly enjoy it", said Gaurav Singh, an IT professional, advocating thandai as a better option this Holi.

However, the traditional thandai wins hands down in the old city, with people still preferring it over the new forms.

Over a dozen shops in the Chowk area are decked up for Holi with bulk orders for earthen cups (kullhads) already placed and several hundred litres of milk procured. The biggest of them all, Raja Thandai, whose clientele includes former prime minister Atal Bihari Vajpayee, is abuzz with activity.

Over 2,000 litres of milk and several kilograms of condiments have been booked for Holi to prepare what many say is a "heavenly potion".

The owners of a shop, while admitting to the rage of new-found tastes in the thandai segment, however says that his "business is brisk as ever."

“There are bulk orders and the business is good as always. This holi and all round the year,”



Megalithic community relied on farming: Study

PUNE: The excavation of iron ploughshare, sickle, copper bangle and farming tools from Khopadi village in Nagpur district has proved that agriculture was the source of livelihood of the megalithic community which belongs to the early Iron Age.

A team of the city-based Deccan College Post Graduate and Research Institute excavated the objects from the habitation site of megalithic community dating back to 300 BC. The team has been working on the site from 2013.

Researchers said the debate on whether megalithic community was engaged in farming or some other profession has been settled for once.

The Deccan College team wrapped up its excavation on Tuesday after seeking important evidences about the community. Chief investigator Kantikumar Pawar said, "During the excavation, interesting evidence in the form of iron ploughshare has been found on the mud floor along with copper bangle and a sickle. These are very important evidences unearthed for the first time from a proper mud floor level belonging to early Iron Age."

The horizontal excavation method was applied at the site on a massive scale stretching to 15 acre land in order to understand the habitation pattern of megalithic culture. Pawar said, "Earlier, evidences were found in the graves at places like Naikund and Mahurjhari in Vidarbha. The Megalithic community believed in life after death and often kept some objects inside the burial site."

Reshma Sawant, a researcher at Deccan College who was a part of this excavation, said, "Finding these agricultural tools from habitation of megalithic people has concretised the agrarian nature of early iron age megalithic communities."

Researchers said the ceramics found at this site are also very important for better understanding of evolution and development of megalithic

pottery. "The site has given the earliest clue of pottery such as micaceous red ware with thick mica flakes among others. The origin of such vessels and other forms of pottery at the site shows that the megalithic people firstly occupied the tributaries rather than the main river like Wainganga," Pawar said.

This is why Indian food is so delicious...



Widely loved for its curries, mouth-watering aromas and appetizing mix of spices, Indian food is much coveted around the world. The peppery hot meals of Andhra is just as enticing as the coconut-based cuisines of Kerala. What about the perfect blend of sweet and spicy flavors in Bengali food. And dare you forget the rich Mughlai cuisines.

But what is it that makes Indian food exquisite and so damn tasty at all times? Just like us the scientists were wondering too, but unlike us they actually do have the answers.

Researchers AnupamJaina, Rakhi N Kb, and Ganesh Bagler from the Indian Institute for Technology (Jodhpur), in an attempt to decode the delicious mystery behind the chicken tandoori or (enter a recipe,) went through several thousand recipes from a popular online recipe site called *TarlaDalal.com*. They analysed each of the recipe ingredient by ingredient, and then compared how often and heavily those ingredients influenced the flavor. Here is what the researchers have to say on why Indian food taste so uniquely good - opposites attract!

"We study food pairing in recipes of Indian cuisine to show that, in contrast to positive food pairing reported in some Western cuisines, Indian cuisine has a strong signature of negative food pairing," the researchers noted. "[The] more the extent of flavor-sharing between any two ingredients, [the] lesser their co-occurrence."

In other words, food tastes better when you use a combination of

ingredients that don't share the same qualities. It's the fewer number of overlapping flavors in ingredients that makes Indian food delicious.

The research published in Washington Post explains further, while many Western cuisines attempt to pair ingredients that share "flavor compounds" -- the minute accent that indicate something like types of sweetness or sourness or spiciness -- Indian food's signature is that it combines ingredients that don't share these qualities at all.

For example, if you find cayenne in an Indian dish, you're unlikely to find another ingredient that shares the same compounds--though you may find other spices that have complementary, but not identical, attributes. This is true across the eight different types of sub-cuisines studied, from Bengali to Punjabi to South Indian.

"Each of the spices is uniquely placed in its recipe to shape the flavor-sharing pattern with [the] rest of the ingredients, and is sensitive to replacement even with other spices."

So while the general tendency is to pile sweet on sweet or spicy on spicy, but if you want your food to be as delicious as the Indian food then keep in mind that opposite (ingredients) attracts, with a much delicious result.

Here's how to do indoor gardening



Mumbai is one of the mostly densely populated cities in the country, and has to battle a major space crunch. With buildings and offices mushrooming in every nook, there is hardly any space left for gardens and green zones. Added to this is the fact that homes are getting smaller, directly in proportion to the rising rates. And this is why indoor gardening that one can indulge in, even at small homes, is gaining popularity. Women are opting for tiny kitchen gardens with a few favourite herbs, in a bid to beckon some green into the house. A variety of chic and

colourful containers, pots and planters are being used give your home that ever green feel. Sonam Gupta, interior consultant and RashmiAttavar, from an Indo-American hybrid seed company, share some tips that can help you begin your own indoor garden...

Location

Choose a plant suitable for the location you wish to place it in. There are some plants which do well indoors or in the shade. They can be moved indoors when required.

Plant choice

Choose a plant according to your space. A balcony would look pretty with a single orchid or a hanging basket. If you have a railing, a window box with flowers plants would brighten up the space.

Maintenance

Choose plants, which are low on maintenance. Make sure planter trays are emptied at least twice a week to avoid mosquitoes and 'wet feet' for the plant.

Containers

You can use ceramic planters in vibrant colours or even metal containers to accentuate the plants.

Colour code it

Greek blue and ochre will dominate 2015, say interior designers. These colours are also getting popular when it comes to home design and when combined with rich velvet jewel tones, they give a royal look. These colours can be incorporated into your home gardens via planters, pots, plant holder etc., to give it a chic look.

Kitchen herbs

Basil

Basil requires a lot of sunlight and preferably should be grown near windows with adequate sunlight. There are different aroma and flavours that need to be checked while planting basil. It is great for Italian and Thai cooking.

Mint

Mint is one of the one of the easily home-grown Indian herbs. It grows well even in moderate light.

Coriander

With a distinct aroma all of its own, this easy-to-grow herb and is an ideal choice for kitchen gardening. Great for Indian and Mexican food.

Decorative plants

Guzmania

Guzmanias are popular indoor plants and have a great presence. They are low on maintenance and have a stunning bloom on the plants which lasts for over a month. They can be placed in the bathroom or in a planter bowl in groups. They thrive well in high humidity and low light. Water the plants twice a week and you may spray leaves with water in winter. Once the plant is done flowering, offshoots form on the sides. These can be removed with a garden knife and planted in a separate container.

Zamioculcas

Zamifolia

This is one of the fairly new entrants into the indoor plant family. The plant growth is vertical and the shiny oval leaves add to its presence. It requires weekly irrigation and does well in low light. It's great for north-facing rooms. It doesn't require watering daily.

Monstera

Monstera are probably one of the most beautiful variety of houseplants. Commonly known as the Swiss cheese plant, because of the perforations on the leaves, they thrive well under low light and make an excellent indoor plant. They can be used as an accent. A grown plant would be about 24" wide. It may be watered once in 3-4 days. When planted in the ground, they bear delicious fruit which takes a year to ripen.

THE HINDU **Business Line**

Punjab to set up organic farming board: Badal

Punjab Chief Minister Parkash Singh Badal has said that an organic farming board will be set up in his State to aid and promote chemical-free agricultural practices in the State.

“I will direct my office to create a board comprising representatives of organic farmers and experts who will advise the Government on policies ... the disastrous impact of chemical-intensive farming on peoples’ health alone is reason enough for making the shift,” he said at the closing

ceremony of the 5th National Organic Farming Convention held in Chandigarh.

National convention

“We were number one in feeding the country, and we will make Punjab number one in organic farming in India...we consider the air as our guru, water our father and earth as our mother and we have sacrificed all three for the sake of feeding the country,” said Badal.

The three-day convention, which brought together 2,500 participants from 22 States and abroad, was organised by the Organic Farming Association of India (OFAI), the National Institute of Technical Teachers’ Training and Research (NITTTR), the Alliance for Sustainable & Holistic Agriculture and the KhetiVirasat Mission (KVM).

Demo plots

The Chief Minister said similar conventions should be held in every village across the State to convince farmers that returns from organic farming were as good as chemical-intensive agriculture.

“Every village must have a demo plot that can provide farmers with proof of this. We will facilitate them through local panchayats,” he said, adding that his Government would work towards providing organic farmers with urban shops.

The festival also included scientific and technical sessions at the NITTTR with scientists from various research institutions and organisations sharing their observations and findings on soil health, plant nutrition, plant protection, water management and livestock development, at a Scientific Conference held on the sidelines.

“The convention has proved that Punjab and Haryana have the potential to reverse the destruction of land, water and biodiversity brought about through intensive farming with large doses of agro-chemicals and mindless irrigation,” said UmendraDutt, Executive Director, KVM.

Setting up national agriculture market, a clear warning for APMCs

The Budget has proposed the setting up of a national agriculture market. Agriculture in the country is a State subject and thus all the States have set up Agricultural Produce Marketing Committees (APMC) to regulate the marketing of agricultural commodities.

Thus, APMCs have been considered an inhibiting factor for establishment of a national agriculture market.

The Economic Survey said that the Centre will make attempts to persuade State governments to introduce required amendments, it also clearly mentions: “If persuasion fails (and it has been tried for a long time since 2003), it may be necessary to see what the Centre can do, taking account of the allocation of subjects under the Constitution of India”.

Power to override

The Survey acknowledges that the Constitution empowers the states to enact APMC Acts, but also says that if the States will not be co-operating then the Centre may take action in lieu of List III of the Seventh Schedule (Concurrent List) in the Constitution which empowers the Union to enact legislation for setting up a national common market for specified agricultural commodities, viz., Entry 33 which covers trade and commerce and production, supply and distribution of foodstuffs, including edible oilseeds and oils raw cotton, raw jute, etc. The other major hurdle in the form of legislative barriers to interstate trade has also been touched in the Survey. It states that “Entry 42 in the Union List, viz., ‘Interstate Trade and Commerce’ also allows a role for the union”.

Though Centre wants to establish national market in coordination with states, a harsh warning is clear with the closing paragraph of the chapter on national market.

“Once a law is passed by Parliament to regulate trading in the specified agricultural commodities, it will override the state APMC laws, paving the way for creating a national common market. But this approach could be seen as heavy-handed on the part of the Centre and contrary to the new spirit of cooperative federalism”.

Model APMC Act

So far, States where APMCs have been performing poorly took taking refuge under Model APMC Act and were introducing reform measures according to suggestions in a phased manner.

Not many States have been successful to demonstrate a better result even after introducing such reforms. The report has also targeted Model APMC Act.

The provision for empowering APMCs in imposing the *mandi* fee on buyers even if the trade is done outside of market without utilising any infrastructure of the committee is heavily criticised.

It would be, in fact, difficult for the owner of a private market to collect the market fee and pay to APMCs and that is why attracting private investment under such existing framework would be difficult.

Having a Model APMC Act developed a decade ago and not revising seems to be deterministic approach. Even model frameworks should also be of evolving in nature so that there is no instance of under exploitation of opportunities due to over protectionism.

The Karnataka way

Though APMCs are criticised for their restrictive approach, the entrepreneurial approach and the system of agricultural marketing adopted in Karnataka has been praised in the report. Like many other States, Karnataka has also introduced agricultural marketing reforms, but not directly from the Model APMC Act.

The State constituted a separate reform committee to recommend reform measures according to the need of the state and established Rashtriya e-market Services Ltd. (ReMS), a joint venture created by the State government and NCDEX Spot Exchange under the leadership of ManojRajan.

Options with APMCs

With the intention expressed in Economic Survey 2014-15, the Centre has expressed its strong desire to establish a national market for which it may go to extreme ends as well. Under such circumstances, APMCs will have to face a do or die situation where either they have to develop themselves as modern markets or they may have to vanish.

If the alternatives to the APMCs are created by the Centre, the monopoly of APMCs in many states will be compromised and if that attracts the private investment in infrastructure then it may slowly and gradually takeover the business of APMCs. However, looking over the already existing physical infrastructure, development of APMCs into modern markets is quite natural.

Either way, option remains with the APMCs only if they modernise their existing infrastructure as well as modernise their marketing system with

latest development, and if it happens, the APMCs can play a leader's role in a highly competitive marketing environment.

Business Standard

Cereal prices soared between 2005 and 2013: Study



Under the Congress-led United Progressive Alliance, the prices of paddy, wheat, gram, ragi, bajra, potatoes, milk, [meat](#) and eggs, along with a number of other things, went up the most between 2005 and 2013.

According to the report of a sub-committee on the estimation of the gross value of outputs in [agriculture](#) and allied activities, with 2012-13 as base, constituted by the government, in rise in banana prices was the steepest during this period.

The wholesale [price](#) of marine and inland fishes, too, showed a sharp increase during this period and went up from 3.2 per cent to 13 per cent and from 18.1 per cent to over 21 per cent, respectively, during this period. The [Wholesale Price](#) Index of paddy rose from 5.2 per cent in 2005-06 to 12.7 per cent in 2011-12, while that of ragi rose from 1.4 per cent to 35.8 per cent during the same time. The report of the sub-committee was submitted to the government sometime back, but it was released to the public this month.

The Centre had revised its gross domestic product (GDP) for agriculture and allied activities based on the new base for the year 2012-13 to 3.7 per cent down from 4.6 per cent in the earlier base.

“While calculating agriculture [GDP](#) with a new base we had realised that many of data sets need to be updated. We have recommended it. For

sectors like fisheries, more surveys and analysis needs to be done,” MahendraDev, director (vice-chancellor) of Indira Gandhi Institute of Development Research told Business Standard.

The report showed share of horticulture in total Gross Value of Agriculture rose from 28 per cent in 2004-05 to around 32.85 per cent in 2012-13 while that of cereal crops declined from 30.4 per cent in 2004-05 to around 28.23 per cent in 2012-13.

Fruits and vegetables constituted around 82 per cent of total Gross Value of Horticulture products. Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka and Gujarat were among the major producers of fruits in the country, while West Bengal, Uttar Pradesh, Bihar and Odisha were among the major producers of vegetables during the above mentioned period.

In the total Gross Value of Output for Livestock, [milk](#) held the maximum share, which also meant that its prices perhaps showed a most consistent increase.

The value of poultry meat from 2004-05 to 2012-13 rose from Rs 12,118 crore to Rs 20,306 crore, while that of eggs rose from Rs 5,850 crore to Rs 8,897 crore during the same period. Gross value of output is calculated by multiplying total production with price in with a certain weight assigned.

The report also showed that among all input for agriculture in the last 10 years livestock feed had the maximum share for the farmers of around 49.9 per cent, followed by fertiliser and seeds.