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Farmers told to adopt site-specific nutrient management for tapioca

Scientists of the Central Tuber Crops Research Institute, Thiruvananthapuram, urged the farming community to adopt site-specific nutrient management for tapioca.

At a seminar organised recently by the Krishi Vigyan Kendra (KVK) in association with the ICAR – Central Tuber Crops Research Institute (CTCRI) to sensitise the tapioca growers on latest varieties, production and protection technologies, the programme coordinator of KVK, N. Sriram said tapioca is one of the important crop in Tamil Nadu and is cultivated in more than one lakh hectares. N. Elango, Joint Director of Agriculture, in his inaugural address, said that tapioca is introduced as alternate crop especially in the rain-fed areas.

Of late the farmers have learnt the skills and knowledge to improve the production, but have not developed the capacity to deal with market. He urged the scientists to develop starch rich, short duration and drought tolerate tapioca varieties for the improving the livelihood status of the rain fed farmers.

Mr. Elango released the site specific nutrient management for tapioca CD and pamphlet. M. N. Sheela, Principal Scientist and Head, Crop Improvement Division of CTCRI, distributed new tapioca variety namely Sree Pavithra to the farmers as alternate variety for Mulluvadi and H266 varieties.

V. Ravi, Head, Crop Production Division, presented the site specific nutrient management strategies for tapioca. Dr. Ravi also shared the research experience on mulching technology in tapioca to manage weeds and other related problems.

R. Muthuraj, senior scientist, seed technology, shared his research experience on different tapioca planting methods to effectively utilise the available seed materials. Farmers and scientists interaction session also formed part of the seminar.

Mini exhibition on tapioca technologies attracted the participants.

E-auction soon at turmeric complex in Karumandisellipalayam



Handy:First portable low-cost device developed for rapid detection of aflatoxins in Medak.–Photo: By arrangement

A new technology that detects aflatoxins on location was developed by International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and it was formally released on Tuesday. The rapid test kit device is also affordable at under US\$ 2.

This exciting advancement combined with a mobile extraction kit that will be ready in two months, will be the first portable cost-effective way for farmers and others to detect aflatoxins instantly.

With funding from the McKnight Foundation and in collaboration with partners including the National Smallholder Farmers Association of Malawi-NASFAM, Farmers Union Malawi (FUM), Kamuzu Central Hospital and Nkhoma Hospital, Malawi, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) developed the rapid test kit for aflatoxins. It is a simple non-laboratory based kit that can be used directly by non-technical people such as farmers, agro-dealers and food processors. Currently, the test can be applied to detect aflatoxin in groundnuts.

The test kit launched officially by Dr. Wilkson Makumba, Director, Department of Agricultural Research Services (DARS), Lilongwe at ICRISAT-Malawi, requires limited technical knowledge or training and can be done on location.

The new test is simple to perform and can detect contamination at levels of 10 parts per billion (ppb) in less than 15 minutes. “The device will contribute to manage and reduce the entry of aflatoxins in the food value chains, improve diagnosis for local and export trade and support the food processing industry to maintain low exposure levels in food products in our local markets as well as for export markets,” said Dr. Anitha Seetha, Scientist, ICRISAT, Malawi. Groundnut, maize, sorghum, pearl millet, chilies, pistachios, cassava and other food products are contaminated by aflatoxin each year.

“ICRISAT has been working with smallholder farmers in Africa to combat the aflatoxin problem. This kit will enable rapid and cost-effective deployment by the government and private sector to protect public health and also improve the export prospects for African countries,” said Dr. David Bergvinson, Director General, ICRISAT.

Sensors to monitor, regulate moisture content in fields



Economy: A scientist showing the water-saving balls at a field in Agricultural Engineering College and Research Institute in Kumulur near Tiruchi.— Photo: A.Muralitharan

The Tamil Nadu Agricultural University's Agricultural Engineering College and Research Institute at Kumulur near here has developed a couple of sensors to monitor and regulate water and moisture content in agricultural fields.

The sensors can be effectively used for ascertaining whether the plants are too dry and require irrigation.

Water is often wasted extensively by many farmers due to the misconception that more water will ensure higher yield and quality. K. Ramaswamy, Dean of the Institute, observed that the two devices could be effectively used by farmers to maintain optimum level of irrigation and conserve water. The Institute has planned to sensitise the farmers to the importance of conserving water and avoiding excess supply through the use of the devices.

The water sensor contains two balls which act as a switch. Once there is excess flow, the balls starts floating thereby switching off the electrical circuit.

The components can be easily maintained in case of any fault or technical snag. The GSM- based controller has been linked with sensor unit for switching on or switching off the agricultural pumpset. It can also be operated using mobile phone, said Mr. Ramaswamy. Field tests were conducted to evaluate the efficiency of water level sensor in different fields. Crop yield was found to enhance even while achieving economy of water used for irrigation.

The moisture sensor can be utilised to maintain the moisture content at the desired level. Once the moisture level is achieved, the water supply could be switched off.

Australia ready to share expertise in various fields with Haryana

Australia has agreed to share its expertise with Haryana in the field of agriculture, horticulture, dairy sector, infrastructure, smart cities and sports particularly in prevention and treatment of sports injuries.

Australian High Commissioner to India, Harinder Sidhu, who called on Chief Minister Manohar Lal Khattar here on Tuesday, discussed various issues of mutual cooperation between Australia and Haryana, an official release said.

The High Commissioner evinced keen interest in the developmental strides made by Haryana and offered cooperation of Australia in further strengthening bilateral relations.

The Chief Minister described Haryana as a leading state in sports and sought cooperation of Australia to develop Motilal School of Sports at Rai.

The CM said Haryana is also developing as a medical tourism hub, especially in Gurgaon.

However, he said there was ample scope to improve the facilities in the field of sports injuries.

Envoy all praise for sports culture in the State

The Australian High Commissioner was all praise for the sports culture in Haryana and said the State is also being recognised as a developing sports economy which could offer many jobs in sports sector like trainers, coaches, sports manager, fitness trainers and fitness advisers. The Chief Minister also invited Mr Sidhu to join the Golden Jubilee celebrations of Haryana beginning November 1.

The State government is planning various initiatives for the year long celebrations and a horticulture university was also being set up in Karnal, he said.

It was also informed in the meeting that the State was also developing integrated multi-modal logistic hub including a dry port as part of the Delhi-Mumbai Industrial Corridor Project.

“This ambitious project will prove to be a driver for the future growth of the State in which Australia can also make commercial ties by sharing their skills and expertise,” the release added. - PTI

Poultry litter generates toxic biocycle in fish tanks

Authorities have failed to address this serious problem, says scientist



CHILLING FACTS

- Andhra Pradesh generates **23,82,720 tonnes** of poultry litter every year
- Current disposal method shows that poultry waste is left in the ground for **six to 12 months** before use
- To promote poultry compost, the government should give incentives to farmers.

Highly putrefied poultry litter being used as feed in fish tanks in Andhra Pradesh is generating a toxic biocycle.

The litter, when added to fish tanks, contaminates the water and increases the fluctuation of biological oxygen demand (BOD). It also accentuates the ectoparasite problem, leading to ulcers in fish. To control the parasite, fish farmers use highly toxic pesticides which penetrate into the biocycle posing a serious health hazard to the end consumer.

Andhra Pradesh ranks first in poultry egg layer rearing with 4.8 crore poultry layers and Krishna and Guntur districts alone account for 1 crore layers in the commercial sector.

About 1, 200 poultry farmers in the State grow birds in cages allowing their litter (excreta) to accumulate at the bottom of the farms/cages. The litter is cleaned and removed once a year. Every 1,000 birds generate nearly 1.5 tonnes of litter every year. Krishna and West Godavari districts account for 4, 96,400 tonnes of litter every year and 90 per cent of this is dumped in fish farms as feed. The rest is used as manure.

“The problem has been there for the last few decades but the authorities concerned have been soft-peddalling the issue. Not that the poultry farmers or fish-rearers are unaware of the serious harm involved, but both have found easy solutions — the former’s concern is to dispose it the easy way and the latter sees it as a low-cost way of increasing the phytoplankton in their tanks,” explains city-based agricultural scientist R. Suresh Kumar.

Poultry litter, when accumulated for a long period, releases polluted gases with bad odour causing pollution in air and ground water besides turning the place a breeding ground for housefly maggots which survive on litter and release greenhouse gases (GHG) — ammonia, methane, carbon dioxide, nitrous oxide and hydrogen sulphide — in the environment.

“Most of these pesticides are based on the organic phosphorous group and synthetic pyrethroids, which cause neuro-toxic effect on fish consumers and also these pesticides are carcinogenic,” says Mr. Kumar.

A fresh challenge is that the fish ectoparasites have developed resistance to the existing pesticides and farmers are going for new toxic chemicals. To control housefly maggots, farmers use highly toxic pesticides which contaminate poultry litter used as fish feed.

Suggesting methods to utilise the manure, Mr. Suresh Kumar says biomethanation, incineration and composting could help overcome the problem in addition to generating power.

Increase milk price: producers

The members of the Tamil Nadu Milk Producers Union affiliated to the Tamil Nadu Vivasayigal Sangam (CPI-M), staged a demonstration in front of the Collectorate here on Tuesday demanding that the government increase the procurement price of cow milk to Rs. 35 a litre and buffalo milk to Rs. 45. The agitation was also to press their other eleven point charter of demands.

The union demanded the government to direct the cooperative milk societies attached to Aavin to procure the entire quantity of milk being supplied by the farmers.

The government should include milk in the menu of the nutritious noon-meal centres and expand the marketing network of Aavin.

In **Erode** , functionaries and members of cooperative milk producers' societies staged a demonstration in front of the Aavin Plant at Chithode demanding procurement of entire quantity and settlement of pending dues. The protestors wanted Aavin to scale up its processing capacity to 50 lakh litres from the existing level of 30 lakh litres of milk. They demanded steps for increasing processing capacity, provision of quality feed at 50 per cent subsidy.

Widespread rain brings down temperature



MOST WELCOME:Continuous rainfall in Monday, and Tuesday inundated parts of low-lying roads in Erode.– PHOTO: M. GOVARTHAN

Widespread rainfall in the district during the intervening night of Monday-Tuesday brought down the morning temperature noticeably.

Large sheets of water in low-lying parts indicated the impact of the overnight rainfall that brought relief to farmers since they will now be in a position to salvage sugarcane and banana crops on thousands of acres.

The crops started withering due to the delay in release of water from Bhavani Sagar reservoir for irrigation into the Thadapalli-Arakankottai and Kalingarayan canals.

The rainfall will also be ideal for starting cultivation of turmeric, farmers said.

Varattupallam received the highest rainfall of 80 mm in the last 24 hours ending 8.00 a.m. on Tuesday.

Rainfall in other places: Modakurichi - 70, Ammapettai - 67.6, Kodiveri - 56.60, Bhavani - 52.2, Chennimalai - 38, Erode 30, Sathy - 22, Perudnurai and Kavindapadi - 21, Gobi - 17, Gunderipallam 14, Nambiyur - 13, Thalavadi - 12, and Bhavani Sagar - 11.8 mm.

With an inflow of 888 cusecs, the level at Bhavani Sagar Reservoir stood at 59.62 cusecs with storage of 7.1 tmc.

In view of the rainfall, discharge into Bhavani river for drinking purpose was reduced from 150 to 50 cusecs, and five cusecs was released into the Lower Bhavani Project canal as usual.

Flood alert in Hosur

Flood alert has been issued in five villages, following a rise in water level in Kelavarapalli dam. The water level in the dam increased to 42.44 ft.

The outflow of water from the dam was 800 cusecs.

The revenue officials have issued a flood alert in Nayanakonda agraharam, Sathakottai, Ramapuram, Gopachandram, and Ramapuram villages.

New milk dairy to come up at Uppoor village



K. Raviraj Hegde, president of Dakshina Kannada Cooperative Milk Producers Union, speaking at a meeting in Udupi on Tuesday.

K. Raviraj Hegde, president of Dakshina Kannada Cooperative Milk Producers Union, said on Tuesday that the union had decided to construct a new milk dairy at Uppoor village instead of expanding the existing milk dairy at Manipal. He was speaking at a meeting here of office-bearers of milk producers societies of Udupi taluk.

Mr. Hegde said that the new milk dairy at Uppoor was expected to be ready in two-and-a-half years at an estimated cost of Rs. 71 crore. The union was in the top bracket in the State. It was giving Rs. 27.17 per litre of milk to dairy farmers. The union had increased its production by 20 per cent last year and 21 per cent this year.

There was great demand in Kerala for its “Trupti” brand of milk, which remained fresh without refrigeration for 90 days.

In 2015-16, the union had a turnover of Rs. 695 crore and a net profit of Rs. 4.29 crore. The union had provided Rs. 2.24 crore as incentive to dairy farmers and spent Rs. 3.6 crore for various programmes.

As many as 56,000 dairy farmers had been brought under the Janashree Yojane, he said.

Janaki Hande, Uday S. Kotian, T. Surya Shetty, H. Rajeev Shetty, Neere Krishna Shetty, directors of the union, were present.

K. Diwakar Shetty, director of the union, welcomed the gathering. Ashok Kumar Shetty, director, proposed a vote of thanks.

Aquaculturists upbeat in Prakasam

Cut in power tariff and better price in global market bring cheer to them

Aquaculturists in Prakasam district are a happier lot with the State government recognising the sector as a growth engine and their produce getting relatively better price in the international market. But, what they need is more support from the central and State governments to compete in the tough global market marked by fluctuating fortunes in the long run, opine a group of aquaculturists in the coastal village of Tangutur. The Vannamei shrimp price ruling steady at Rs. 400 per kg for a 40-count in the export market is a good development, they say. The State government slashing power tariff by 20 per cent to Rs. 3.75 per unit has come as a big relief as also 24 x 7 power supply, which has helped them do away with generators for energising aerators, they say, adding another welcome development is that they are able to get an encouraging price of Rs. 220 per kg for a 100-count during week-end and Rs. 210 per kg in the week beginning in the domestic market.

The State government should ensure setting up of at least two aquatic quarantine facilities, one in south coastal Andhra Pradesh and another one in north coastal Andhra Pradesh by the Centre, to ensure Specific Pathogen Free (SPF) broodstock, says Andhra Pradesh State Prawn Farmers' Welfare Association secretary A. Kondal Rayudu while talking to *The Hindu*. Hitherto, they depended upon the Rajiv Gandhi Centre for Aquaculture near Chennai which, they say, is unable to meet their demand fully.

Spurious seed

“We spend sleepless nights owing to spurious seed,” complains an aquaculturist Ch.Venkateswarlu. The present dryspell, which affects the growth of shrimp, also adds to our worries over outbreak of viral infection, says another aquaculturist Ch. Murali while pressing for dredging of the sea-mouth to reduce the salinity in creeks.

The Centre should form a commodity board for aquaculture under the Union Commerce Ministry on the lines of the one for tobacco to intervene in the

market as and when needed and regulate the crop after assessing the domestic and overseas demand for shrimp, suggests another aquaculturist Tella Ramaiah. Pointing out that feed accounts for 70 per cent of the cost of production, they want the State government to ensure them quality feed and regulate its price as well. The government should also set up cold chains and develop domestic market for protein-rich shrimp to shed their over-dependence on the international market, they add.

Pig farmers warned

The Animal Husbandry Department has warned pig farmers of stringent action if they allow the animals roam freely on roads in the Vizianagaram municipal limits. The action includes bind-over cases under Section 107 on pig farmers. At a meeting on Tuesday, Joint Director (AH) Y. Simhachalam asked officials to put a check on pig menace in the fort town.

Monsoon brings good tidings for farm sector in Karnataka

SOWING IN THE STATE *	
☉ 2015-16	49.39 lakh
☉ 2014-15	37.11 lakh
☉ 2013-14	43.62 lakh
☉ 2012-13	28.65 lakh
* in hectares, as on July 25	



This year's target area for sowing pulses is 12.13 lakh hectares in the State, said Minister for Agriculture Krishna Byre Gowda.— FILE PHOTO

The agricultural sector is showing signs of recovery after a long spell of drought, with most parts of the State experiencing normal monsoon this year. Sowing touched 49.39 lakh hectares on July 25, as against 34.59 lakh hectares recorded on this day last year.

Minister for Agriculture Krishna Byre Gowda said on Tuesday that the target of the department was 73 lakh hectares.

“Banking on the forecast of normal monsoon, the State government has targeted foodgrain production of 100.72 lakh tonnes during the year.

The State received 558.44 mm rainfall from April to July,” he said.

According to Mr. Gowda , there is no shortage of fertilizer in the State and 12.95 lakh tonnes of fertilizer has been supplied to the needy farmers so far, compared with 12.27 lakh tonnes supplied during this period last year.

Sowing of pulses is showing an increasing trend this year.

Compared with last year (5.48 lakh hectares), this year's target area for sowing pulses is 12.13 lakh hectares, he said.

There is some good news for farmers who lost their crop in the kharif season last year, as they are all set to receive Rs. 694.12 crore crop insurance amount released by insurance companies, according to Mr. Gowda.



Maharashtra: Area under pulses has increased by over 46 per cent

This year, the area has gone up to 13.94 lakh ha, according to statistics provided by Agriculture Commissioner Vikas Deshmukh.



THANKS to the good price fetched by arhar (tuar) and the special emphasis by state government on increasing the area under pulses, the area of the crop has increased by over 46 per cent compared to last year in the state.

The crop was sown on 8.5 lakh hectare (ha) compared to average area of about 12 lakh ha. This year, the area has gone up to 13.94 lakh ha, according to statistics provided by Agriculture Commissioner Vikas Deshmukh.

“And, we still have 10 per cent of sowing to go in paddy areas of Vidarbha and Konkan. So, the area under the crop will go further up by a few thousand hectare,” Deshmukh told The Indian Express.

Deshmukh added, “The state government has also been emphasising on promoting pulses by spending over Rs 2,500 crore on a ‘demonstration and distribution’ programme by selecting plots of about 100 ha each in selected villages and providing free inputs to farmers.”

In Vidarbha, the government has been promoting arhar crop on the paddy bunds too as a kind of intercrop since the last few years.

Apart from arhar, moong (green gram) and udid (black gram) sowing has also gone up taking the overall area under pulses from 14.9 lakh ha last year to 23.5 lakh ha. The average area under pulses in the state is 21.82 lakh ha.

“Good price fetched by the crop is the most important factor behind this growth,” Deshmukh added.

The increase in pulses is mainly at the expense of cotton, whose area has come down from an average of 41 lakh ha to 36 lakh ha, Deshmukh said.

The bulk increase — happened in Amravati division of Vidarbha with the average arhar area of four lakh ha — has gone up from 3.91 lakh ha last year to 4.91 lak ha, an increase of one lakh ha.

The division, which is the state’s main cotton bowl, has seen a drop in cotton area from 9.5 lakh ha last year to 8.7 lakh ha this year. Soyabean has dropped from 15.35 to 14.30 lakh ha.

Among the crops that yielded area to pulses are also cereals and soyabean, according to Joint Director (Agriculture) S R Sardar.

In Amravati, moong has gone up from 78,000 ha last year to 1.1 lakh ha this year. Comparative udid figures are 54,800 and 1.01 lakh ha.

No sign of let up in pulses imports



Trade pegs imports at 6-6.5 million tonnes

India's pulses imports are expected to remain high in the current financial year despite brighter prospects for the domestic harvest as farmers have chosen to plant more of these grain legumes in the ongoing kharif season.

The Indian Pulses and Grains Association (IPGA), the apex trade body, has projected imports for the current financial year to be at 6-6.5 million tonnes (mt) — up from actual imports of 5.7 mt last fiscal year.

Attributing the high imports to rising consumption, IGPA Chairman Pravin Dongre said the next chana crop will be harvested in March 2017 and import estimates are for April 2016-March 2017. “Any reduced imports will reflect in 2017-18 and not in 2016-17,” he said.

A weak monsoon and adverse weather had impacted the chana crop this year (chana accounts for about half the pulses output of 17 million tonnes) resulting in a major deficit.

IPGA estimates that the chana crop harvested in March 2016 was about 15-20 per cent lower than the Centre's estimate of 7.48 mt, a trend reflected in the mandi arrivals.

The trade has contracted 3 mt for imports, which will arrive between September and December, Dongre said. Peas imports between September and December will be approximately 1.5 mt, while the import of chana and arhar during the period are pegged at 0.8 mt and 1.5 lakh tonnes respectively.

Prospects this year

Dongre said pulses output in the current kharif season would be 40-50 per cent higher over last year's 5.49 mt.

The projected higher output is based on the increased acreage as record prices have prompted farmers across the country to migrate to pulses from cotton and soyabean. Pulses acreage till last week was up 39 per cent at 90 lakh hectares. Even the global crop is higher this year.

In Canada, production is up 40 per cent, while in Australia the forthcoming crop is 50 per cent higher. In Africa, the crop is up 15-20 per cent.

"We believe there will be a sharp correction in prices on larger availability of pulses," Dongre said.

India is the largest producer, consumer and importer of pulses in the world. Pulses are the major source of protein for a large section of the population and the country still relies on the imports to meet demand.

The government made pulses imports duty free last December after a surge in prices had fuelled food inflation.

Rising population and income levels have been driving consumption, which is estimated to be growing at 2-3 per cent annually.

‘Whitefly damage to cotton crop unlikely to spread’

Cotton farmers in Punjab will not suffer as much as last year from the whitefly infestation as the attack on the crop this year is in a limited area and unlikely to spread, a senior official has said.

“The pest attack is directly related to dryness, and rain weakens it. This year, about 4,400 hectares got affected in the Fazilka district. With adequate rains, it will not spread further,” Agriculture Secretary SK Pattanayak told *BusinessLine*.

The Central team that visited the whitefly-affected districts has reported that the situation was under control as subsequent rains had washed away and restricted the movement of the flies.

But, it said that the situation needed monitoring.

New pesticides

Agriculture experts in the Central team have advised cotton farmers on measures to be taken to avoid the flies, the Secretary added.

It includes spraying certain new pesticides as the ones used earlier did not work in some cases.

In Punjab, 1.36 lakh hectares out of a total of 4.50 lakh hectares of cotton acreage was attacked by the whitefly last season and output had dropped by 40 per cent.

“The effect of the whitefly attack was damaging as rains last year were scarce. This year the case is different as we have had good rains,” said another official from the Agriculture Ministry.

Cotton acreage dips

Once bitten, twice shy, farmers have already started shifting from cotton to other crops such as pulses this year.

While cotton acreage in the country till July 2 this kharif season has gone down to 86.86 lakh hectares from 99.52 lakh hectares in the same period last year, in Punjab it has declined to 2.45 lakh hectares from 4.5 lakh hectares.

“The decline in acreage under cotton is also due to low global prices. Farmers in some States are finding switching over to other crops more lucrative,” the official added. Agriculture experts will keep monitoring the cotton crop in Punjab this year to ensure that whiteflies don’t cause further damage, he said.

Crop safety: this \$2 kit can detect Aflatoxin contamination in just 15 minutes



The low-cost device for rapid detection of aflatoxins is seen in Medak

The carcinogenic affects 25% of all crops globally: FAO

A simple, rapid test that can detect aflatoxins and costs under \$2 has been developed by consortia, including the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), here.

Identifying aflatoxins which contaminate several food products on location can save lives and open export markets for the African and Asian countries. It will be combined with a mobile extraction kit that will be ready in two months.

The simple, non-laboratory based kit will be the first portable cost-effective way for farmers, agro dealers and food processors and other non-technical people to detect aflatoxin contamination instantly, according to a press release from the ICRISAT.

The consortia got funding from the McKnight Foundation and included the National Smallholder Farmers Association of Malawi-NASFAM, Farmers Union Malawi (FUM), Kamuzu Central Hospital and Nkhoma Hospital, Malawi.

The kit was officially launched today by Wilkson Makumba, Director, Department of Agricultural Research Services (DARS), Lilongwe at ICRISAT-Malawi.

Aflatoxin issue

Aflatoxin is carcinogenic. The Food and Agriculture Organization (FAO) estimates that 25 per cent of all crops in the world are affected. The WHO recently estimated that in 2010 around 20,000 people died globally from aflatoxin poisoning and an equal number fell ill.

Groundnut, maize, sorghum, pearl millet, chillies, pistachios, cassava and other food products are contaminated by aflatoxin each year. They not only affect human and livestock health but can also the marketability of food products.

Many countries reject imports of agricultural products that exceed certain levels of aflatoxin, costing farmers millions of dollars every year.

The test can detect contamination at levels of 10 parts per billion (ppb) in less than 15 minutes. While the competitive Enzyme-Linked Immunosorbent Assay (cELISA) test, developed in 2000 also by ICRISAT, which has to be done in a laboratory by trained technicians, and other analytical tests can take up to 2 days, the release added.

The compact portable device is based on the lateral flow immunoassay test (popularly known as the strip test like that used to detect glucose in human blood). If aflatoxin is present in the sample, then one pink line appears on the strip, whereas if the sample doesn't have any aflatoxin, two pink lines will appear.

“The device will contribute to manage and reduce the entry of aflatoxins in the food value chains, improve diagnosis for local and export trade and support the food processing industry to maintain low exposure levels in food products in our local markets as well as for export markets,” said Anitha Seetha, Scientist, ICRISAT, Malawi.

“ICRISAT has been working with smallholder farmers in Africa to combat the aflatoxin problem. This kit will enable rapid and cost-effective deployment by the government and private sector to protect public health and also improve the export prospects for African countries,” said David Bergvinson, Director General, ICRISAT.

Monsoon likely to see a revival from next week



Parts of peninsular India have been receiving showers over the past few days in what is considered a timid revival of the monsoon even as heavy showers remain confined in North and East India.

A more organised revival may materialise from next week, coinciding with the first few days of August, according to the European Centre for Medium-Range Weather Forecasts.

Pacific Typhoon

This is hinged on the formation of a typhoon (cyclone) in the South China Sea, west of the Philippines, and its track further west towards Hong Kong and adjoining South-West China.

The westward movement of typhoons in the North-West Pacific/South China Sea is considered beneficial to the Indian monsoon in terms of their impact on the Bay of Bengal.

In the instant case, the European Centre says the typhoon will send in a 'pulse' that will go on to set up a much-awaited low-pressure area in the Bay in early August (next week).

This 'low' will expectedly stimulate the monsoon and bring the rains back to peninsular India, most of which has been going through a lean phase since the first week of July.

Extended outlook

The US Climate Prediction Centre, too, shares the outlook, signalling heavy to very heavy rain on the West Coast right from Konkan-Mumbai to Coastal Karnataka from July 25 to 31.

Parts of the interior peninsular region, including Marathwada, Madhya Maharashtra, west Madhya Pradesh, east Rajasthan, Uttar Pradesh and Bihar, too, are forecast to receive above-normal rain.

The week that follows may witness excess showers over Telangana, Vidarbha, Madhya Pradesh, Chhattisgarh, Jharkhand, Punjab, Uttarakhand and Himachal Pradesh, apart from the West Coast.

Meanwhile, the European Centre, in its extended outlook, suggests that the monsoon will hold up mostly normal in August and September with excess rain indicated for parts of peninsular India.

Good sale of turmeric

Nearly 75 per cent of the arrived turmeric was sold at Erode markets for a higher price. "Only 4,000 bags of medium variety turmeric arrived for sale and traders who have upcountry orders purchased good quality turmeric," said RKV

Ravishankar, President, Erode Turmeric Merchants Association. At the Erode Turmeric Merchants Association, the finger variety went for 7,779-9,244 a quintal and the root variety at 7,119-8,588. Of the 1,316 bags, 1,064 were sold.



THE TIMES OF INDIA

Purdue University student startup creates agricultural drones

A group of Purdue University students have created a drone start-up company called Aerial Agriculture LLC that can help farmers reduce excess fertilizer and input costs, and increase yields, helping them save some money on the farm. The students are building drones that deploy specialized cameras to convert images into a vegetative index that measures relative crop health. This data will help agronomists write variable-rate nitrogen prescriptions that can place fertilizer more efficiently and ratchet up yields.

Aerial Agriculture LLC, a tech startup founded by undergraduate students in Purdue's College of Engineering, developed and piloted agricultural drones that can capture specialized images of entire crop fields.

"Our technology can pinpoint crop areas that need more attention, which allows farmers to then apply more inputs and address potential crop issues immediately, as opposed to after the fact," according to co-founder Austin Dardorff, a student in Purdue's College of Engineering. "We expect our clients to get a full return on their investment, if not make money from using our service. Purdue Foundry has provided us with serious resources, as well as massive networking opportunities that you just cannot obtain otherwise".

Dardorff and his colleagues have recently upgraded the drone's camera, which is now capable of collecting four different spectral bands of imagery. They are

able to stitch images together in maps to show the crops' health in a precise and easy-to-read manner. Aerial Agriculture is the latest agribusiness venture to come out of the Purdue Foundry, a startup accelerator.

Sikh farmers flatten ravines to grow basmati



Sikh farmers who migrated from Punjab and Haryana to the drought-hit tribal district of Sheopur are growing basmati rice in what was once a bald patch in the ravines. They have revolutionized the way agriculture was done in the dust bowls by flattening ravines and irrigating land with high-power pumps.

"Every time, these migrant farmers switch on pumps, the water table dips by almost 40 feet, triggering water crisis in Sheopur. Villagers too have also taken cue and have begun sowing paddy," said S K Mohor, deputy director agriculture of Sheopur.

Last year, 93,198 tonne of paddy was cultivated in Sheopur, with Sikh farmers accounting for more than 90% of the produce.

The yield is taken to Kota mandi in neighbouring Rajasthan where they get a good price.

A few hundred Sikh farmers migrated from Punjab two decades ago by selling ancestral land at a premium and began tilling land in the Chambal region, said Satnam Singh, while spraying fertilizers in fields with knee-deep water on outskirts of Sheopur.

"Soon, more farmers from north India followed to reap a harvest in what was once parched terrain, he said. "I sold 18 bigha of land in Punjab and purchased 65 bighas here," he said with a smile.

When he arrived in Sheopur, he along with other farmers had to smoothen ragged sand mounds on large swathes of the ravines to begin cultivation.

Now, more than 200 hectares of land are being cultivated.

"After filling fields with knee-deep water, we drain out water and again replenish it after a few days as temperatures rise and crops get damaged.

We are now waiting for monsoon as our tube wells have begun drying up," he said. "Wahe Guru will help us," he said looking at the sky.

Deputy director agriculture S K Mohor said, "For three years, the area under paddy cultivation is decreasing. From 19,600 hectares in 2014, it has dipped to 18,585 in 2015.

This year, 16,000 hectares of land has been cultivated for paddy. We are growing the 1121 Sugandha basmati variety here," said Amanpal Singh, another farmer from Haryana.

Former district collector Shivnarayan Rupla had recommended to the government to ban paddy cultivation in Sheopur because of water crisis.

"We know ground water is depleting and you can imagine how much is wasted when they drain out and refill water with 16 HP water pumps," said Pannalal Solanki, district collector, Sheopur.

"There is no provision to ban crops. We can only advise them. Everybody is free to cultivate food grains and pulses of their choice," he said.

Farmer can't ship tomatoes to market



Tammanna, a farmer in Shivara village of Mandya taluk, is worried as he has been struggling to ferry his vegetables to the market in Mandya.

Farmers like Tammanna depend a lot on KSRTC buses. If they transport veggies in private vehicles, the transportation charges are higher and affects their profits.

Tammanna opted not to carry the tomatoes to the market to cut down losses and he's leaving ripened tomatoes on the plant itself. He said only KSRTC has a bus service to his village. "If the service does not resume soon, I'll incur more losses," he said. Tnn

Agri scientist Swaminathan suggests 'Flood Codes' to help farmers



President Pranab Mukherjee sharing a word with Agriculture scientist M S Swaminathan (TOI file photo)

Amid reports of floods in the riverine portions of Bihar, Assam and West Bengal, the eminent agriculture scientist M S Swaminathan on Tuesday pitched for preparation and operation of 'Flood Code' - an anticipatory code of action - for such regions.

Under the Flood Code, alternative crops must be kept ready so that as soon as the flood recedes, they can be planted in the diara land which tends to get submerged during the monsoon.

"The strategy should be planting saathi maize (60 day variety), sweet potato and rice varieties with genes for stem elongation. In this way, farmers may get atleast one crop and some income for their food and livelihood needs", said Swaminathan, known as father of Green Revolution in India.

He said, "The Flood Code would become the saviour of farm families in the flood prone areas and thereby enhance their coping mechanism to such extreme conditions".

Posting his statement, the M S Swaminathan Research Foundation noted that since flooding is not uncommon in such regions, the agriculture scientist had proposed having 'Flood Codes' over 40 years ago as floods cause not only damage to crops and property but also can lead to post-flood problems like food and famine.

"With climate change which can enhance the frequency of occurrence of drought and floods, such an anticipatory code of action supported by appropriate planting material will insulate the local communities from total loss of food and livelihood security", said Swaminathan.

THE ECONOMIC TIMES

Farmers seize offer of free registration of land sold on 'plain paper'



Around a million farmers in Telangana lack secure title to land bought this way, according to a 2014 survey carried out in the state by Landesa, a US based charity.

HYDERABAD: When Telangana announced a three-week window for free registration of land that had exchanged hands via handwritten notes on plain paper, the offer triggered more than a million applications.

All over the southern Indian state the sale of land on notes known as "sada bainamas" has been customary because of widespread inability to pay the registration fees, illiteracy or ignorance of the law.

Around a million farmers in Telangana lack secure title to land bought this way, according to a 2014 survey carried out in the state by Landesa, a US based charity .

Guram Muttaya is a beneficiary of the registration drive and one of many farmers who occupy land they have been cultivating for 30 to 40 years on the strength of informal documents.

"Registering the land will bring me government agriculture loans, compensation for crop damages and crop insurance too," Muttaya told the Thomson Reuters Foundation, holding up a torn piece of paper bearing a signature.

The piece of paper is his only proof of ownership of a fifth of a hectare of land he bought in Kannayapally village 27 years ago for \$67 and whose market value has risen to \$3,000.

Studies have shown that broadly distributed secure land rights for farmers can help to pull families out of poverty and boost sustainable economic development.

NO RECORDS

As many as 70-85 percent of those who own land purchased on plain paper are poor farmers who rely on the land for their livelihoods, according to a government-commissioned report in 2006, the latest data available.

Absent from government land records and lacking a document proving legal title, the farmers are never recognised as legal owners and are deprived of institutional benefits over decades.

More than a third of Telangana's 35 million people depend on land cultivation for their livelihood.

High labour costs, low mechanisation and reliance on rain for irrigation in more than half of cultivated land in the semi-arid state have left many farmers struggling to make ends meet.

Meanwhile, the property sector has boomed and the price of land - like Muttaya's plot - has risen steeply, prompting some descendants of those who sold their land on plain papers to refuse to honour "sada bainamas".

Almost a million land-related complaints have been filed at the state's revenue offices over the two previous years, according to the Landesa survey.

DIGITAL RECORDS

Since last year, in a bid to clean up its land records, the state has been digitalising and storing individual records using the Telangana Land Records Management System.

E. Venkatachary, a land and revenue official in Nalgonda district, told the Thomson Reuters Foundation the new online application process would help poor farmers.

"This time the scheme is wholly targeted at the disadvantaged and tribal farmers," he said.

"To ensure transparent land records for them in future and eliminate graft that illiterate farmers may be victims of, we introduced an online applications process at dedicated customer service centres."

Electronic applications include biometric authentication linked to the unique identification number(IUD)created for all Indian citizens.

"At each stage, as we scrutinise applications, upload notices to be served to applicants, and finally generate titling certificates, we can only log in with our IUD authentication," said Chandra Vadana, a tax inspector in the village of Parthy.

Venkatachary said "sada bainama" transactions constitute 5 to 10 percent of agricultural land in most villages.

"It (sada bainama) is the backbone of the land administrative system as it pertains to poorest of farmers and regularising their right is important," Venkatachary said.

Previous offers by the government to register informal land sales had attracted far fewer applicants than the one launched in June, with the one prior to that, in 2009, garnering just 70,000 applications.

This time an awareness campaign spread the message, said Venkatachary.

Landesa produced a book about "sada bainama" that explained the process of registration in the local language and the scheme was publicised by the media, he said.

There are still hurdles to be overcome though as many of the applications are likely to be found ineligible, or could lead to legal disputes.

Tax inspector Vadana said in at least 20 percent of applications, descendants of the sellers were disputing that their relative ever sold the land, alleging the signature was false or demanding the market price for land occupied for up to 20 years.

Government fixes potato MEP at USD 360/tonne



Wholesale potato prices in Agra, Uttar Pradesh has increased to Rs 15.25 per kg today from Rs 7 per kg in the year-ago period.

NEW DELHI: The government today imposed minimum export price (MEP) of USD 360 per tonne on potato to increase domestic availability and cool prices.

Wholesale potato prices in Agra, Uttar Pradesh has increased to Rs 15.25 per kg today from Rs 7 per kg in the year-ago period.

Whereas in the retail market, it is hovering in the range of Rs 30-35 per kg in the national capital.

"Export of potatoes is permitted subject to MEP of USD 360 per tonne," Directorate General of Foreign Trade (DGFT) said in a notification.

Although India was the world's second largest potato producer at 48 million tonnes in 2014-15, its exports were less than 1 per cent of the output.

India exported 1.80 lakh tonnes of potatoes in 2015-16 fiscal, which was lower than 3.05 lakh tonnes in the previous year. The production of the commodity stood at 480 lakh tonnes in 2014-15.

Sugar mills owe Rs 6,582 crore to cane farmers



The cane price arrears of Rs 3,269 crore on Fair and Remunerative Price basis and Rs 6,582 crore on State Advised Price basis are outstanding against the sugar mills

NEW DELHI: Sugar mills owe Rs 6,582 crore to cane farmers as on July 15, the government said today.

"As on July 15, 94 per cent of cane dues payable on Fair and Remunerative Price (FRP) basis for the sugar season 2015-16 has been cleared," Minister of State for Food C R Chaudhary said in a written reply to the Lok Sabha.

The cane price arrears of Rs 3,269 crore on Fair and Remunerative Price basis and Rs 6,582 crore on State Advised Price basis are outstanding against the sugar mills, he added.

FRP is the minimum price fixed by the Centre that mills have to pay to cane farmers. Some states like Uttar Pradesh announced their own cane price.

The minister said the liquidity of the sugar mills has been adversely affected due to surplus sugar production during the last four consecutive marketing years and depressed sugar prices, leading to accumulation of cane price arrears of the farmers.

Chaudhary said the government has taken several steps to help the sugar industry to resolve liquidity problems and facilitate clearance of cane price arrears of farmers.

Tea planters apprehending heavy and long term yield loss



The situation is even worse in Sikkim adjoining Darjeeling hills or many North east Region areas where rainfall has been recorded around 100% higher than normal during last week.

SILIGURI: Tea planters are apprehending heavy and long term yield loss caused by serious health problem of tea bushes taking place due to ongoing heavy spell of downpour in entire West Bengal and North Eastern Region tea belt.

According to the Meteorological department statistics, cumulative rainfall since the beginning of Monsoon season on the 1st of June in entire West Bengal teaBSE 9.87 % belt has been recorded as around 20% higher than normal.

But the downpour during last week went up to 50%. The situation is even worse in Sikkim adjoining Darjeeling hills or many North east Region areas where rainfall has been recorded around 100% higher than normal during last week.

Owing to the situation, Tea Association of India Secretary General P. K. Bhattacharjee, apprehends the production at many tea producing zones to come down by 25% in the month of July.

But, as even higher level of concern, "The damages occurring to tea bushes now, will impart its ill-effect in post monsoon seasons too," said Eminent Tea Scientist. Dr. S. E. Kabeer.

"Continuous and prolonged lack of sunshine is lowering photosynthesis, the food producing mechanism of plants. In addition, roots of bushes are now suffocating without proper aeration due to soil oversaturated with water. Naturally, tea bushes are getting highly deprived of nutrients and thus growth," he said.

But more importantly, "New roots to touch wider and deeper area soil layers are not growing. This will drastically reduce mineral and water suction. An additional and major crisis is Violet Root Rot disease that may cause severe damage to the bushes," explained Dr. Kabeer.

"All these put together will badly hamper production during next dry season after monsoon. After highly impaired production in last post winter season due to lack of rain, this second spell of yield loss due to heavy rain has become too difficult to absorb," said K K Mintri, Chairman of TeraiBSE -1.41 % Indian Planters Association.

Agriculture contributed to 18 per cent of emissions in 2010: Lok Sabha told



The gases emitted from this sector are mainly methane (CH₄) and Nitrous Oxide (N₂O)

NEW DELHI: A government research indicates that agriculture contributed to 18 per cent of the total emissions of India in 2010, Lok Sabha was informed today.

Environment Minister Anil Madhav Dave said in a written reply that human-induced emissions of

greenhouse gases (GHG), including those from the agriculture sector, are considered to be the "drivers" of observed climate change.

"While annual total GHG emissions from agriculture in 2010 are estimated to be of the order of 10-12 per cent of global anthropogenic emission,

the research conducted by the government indicates that agriculture in India contributed to 18 per cent of the total emissions of India in 2010.

"The gases emitted from this sector are mainly methane (CH₄) and Nitrous Oxide (N₂O)," Dave said.

Noting that the agriculture sector is the main source of food, he said that reducing food loss and waste lead to avoidance of unnecessary

greenhouse gas emissions and help in mitigating climate change through better management of food utilisation, distribution and sustainable lifestyle.

He said that National Mission on Sustainable Agriculture launched in 2010 under National Action Plan on Climate Change (NAPCC) addresses both mitigation and adaptation

to climate change through programmes such as System of Rice Intensification (SRI) against conventional rice cultivation and coverage of milch animals under Ration Balancing Programme.

He said that National Initiative on Climate Resilient Agriculture was launched in 2011 to address both adaptation and mitigation in the agriculture sector.

"The National Food Security Act, 2013 promulgated by the government, is aimed at ensuring, inter alia, timely and efficient procurement and distribution of food grains,

building up and maintenance of food stocks, their efficient storage, movement and delivery to the distributing agencies and monitoring of production, stock and price levels of food grains," he said.

22 states/UTs implementing Pradhan Mantri Fasal Bima Yojana



"Government has been engaging the states/UTs for implementation of the scheme for benefit of the farmers of the states/UTs," Singh said during Question Hour.

NEW DELHI: As many as 22 States and Union Territories are in the process of implementing the Pradhan Mantri Fasal Bima Yojana (PMFBY), a scheme launched by the Centre recently, Agriculture Minister Radha Mohan Singh said in Lok Sabha today.

Singh said the PMFBY has been approved for implementation in all states and UTs from Kharif 2016 season and the scheme is voluntary for states and UTs.

"Government has been engaging the states/UTs for implementation of the scheme for benefit of the farmers of the states/UTs," he said during Question Hour.

Besides, detailed guidelines for implementation of the schemes to all stakeholders, including state governments, all the requisite assistance and clarifications have been provided to the states and

UTs to prepare clusters, tender documents and finalisation of implementing insurance companies, he said.

"So far, 21 states and 1 UT have completed the tendering process for selection of insurance companies for implementing PMFBY and restructured weather based crop insurance scheme during kharif 2016 season. Tendering in Jammu and Kashmir is underway," he said.

Out of these 22 states and UTs, 19 states and UTs have already issued the notification for implementation of the scheme in Kharif 2016, he said. PTI ACB
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