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# THE HINDU

## Rain shelter vegetable cultivation a rage in Kochi



The concept of rain shelters for round-the-year cultivation of vegetables is growing popular in the district with even individual home-owners eagerly adopting the practice though government now offers financial assistance only to those setting up units that are over 100 sq.m.

Information from the Department of Agriculture is that Ernakulam district has been sanctioned 28 rain shelters of 100 sq.m. each.

And Rs. 5 lakh has been sanctioned towards subsidy for the units that cost Rs. 50,000 per piece. These units have evenly been distributed in the 15 blocks of the district, said an official.

The government subsidy apart, effort by officials of the department of agriculture has seen home-owners, who face space constraint, taking to the concept eagerly.

More than 100 homes have adopted vegetable cultivation using rain shelters within the Corporation of Cochin area, said an official.

Similar interest has been shown by people living in other parts of the district.

People are experimenting with rain shelter vegetable cultivation in Pallippuram panchayat, said an official. Most of them are building the rain shelters on terraces because of the lack of space.

A department of agriculture official said that rain shelters came much cheaper than high-tech polyhouses, which had mostly caught the fancy of professional farmers in a big way in the State. While high-tech polyhouses have been used mostly for high value crops, rain shelters are easy to build and maintain and are handy for cultivating vegetables of everyday use.

Promotion of vegetable cultivation using rain shelters has been taken up in the State under the Vegetable Development Programme 2014-15 with a total outlay of Rs. 1 crore to foot the subsidy bill.

They are meant to protect vegetable crops from extreme weather conditions like heat and rain.

The concept is being promoted to strengthen family farming as well as to cut down on dangerous pesticides widely used in commercial cultivation of food crops. Rain shelters are naturally ventilated and are similar to green houses, made using GI pipes or wooden or bamboo poles with roofs made up of transparent UV-stabilised low density polyethylene film.

### **Gingelly cultivation in full swing**



Gingelly cultivation has been in full swing in Uppliyapuram block during the past two weeks and farmers are busy drying the crop on rural roads in the block.

Uppliyapuram and Thuraiyur are major blocks where the crop is raised using assured irrigation facility. About 100 hectares was brought under the crop this season. According to Agriculture Department sources, farmers raise gingelly as a crop rotation in groundnut fields.

“The crop registers a good harvest where the irrigation is assured using wells. The area is scattered all over the blocks indicating the soil condition in these two blocks is suitable for the crop,” says the official. The average yield is expected to be around 500 kg per hectare.

The crop is being raised in different seasons. While it is cultivated during the Tamil month of ‘Karthigai’ in Uppliyapuram and Thuraiyur blocks, the crop is raised in Lalgudi block during April. Farmers raised ‘TMV 3’ and ‘TMV 4’ variety which are black and brown in colour with a duration of 110 days. The white gingelly is not grown in the district.

### **Centre’s nod for Rs. 500 cr. corpus**

*To manage prices of onions and potatoes now*

The Union Agriculture Ministry on Friday approved the setting up of a price stabilisation fund (PSF) that had been announced by Finance Minister Arun Jaitley in his July 2014 budget.

The fund, with a corpus of Rs. 500 crore, will be used to support market interventions for managing prices of perishable agri-horticultural commodities.

Initially, the fund is proposed to be used for onion and potato only. Losses incurred, if any, in the operations will be shared between the Centre and the States.

The PSF will be used to advance interest-free loans to State governments and Central agencies to support their working capital and other expenses on procurement and distribution interventions for such commodities, the Ministry said in a statement.

These commodities will be procured directly from farmers or farmers’ organisations right at the farm gate or mandi levels and be made available at reasonable prices to consumers.

### **Revolving fund**

For this purpose, the statement said, the States will set up a revolving fund to which the Centre and State will contribute equally. The ratio of Centre-State contribution to the State-level corpus in respect of northeast States will, however, be 75:25.

The revolving fund is being mooted so that requirements for all future interventions can be decided and met at the State level itself, it explained. The Central agencies will, however, set up their revolving fund entirely with advance from the Centre.

On March 18, *The Hindu* had reported that Union Agriculture Minister Radha Mohan was planning to advise States to draw from the Rs.500-crore PSF for onions and potatoes.

### **Thammampatti market sees arrival of Kollimalai tamarind**



The Thammampatti weekly market, one of the major tamarind markets in the western districts, received 150 baskets of tamarind from Kollimalai hills in Namakkal district this week.

The villages on the Kollimalai hills accounted for a large number of tamarind trees.

About 150 baskets of tamarind, each comprising about 20 to 35 kg, arrived at the Thammampatti market this week.

The price of a kg of tamarind with seeds ranged between Rs. 30 and 35. Usually, the market receives about 250 baskets of tamarind every week.

Since the season has just begun, the arrival is less. It is expected to pick up in the weeks to come.

Normally, the tamarind season begins by February end, while this year it has begun a little late. The tribal farmers expect the season to continue till April end.



## **Timmapuram ryots all for tobacco cultivation**



Timmapuram villagers are among the very few who still continue to cultivate tobacco.

This year, more number of farmers switched over to tobacco compared to previous year due to non-availability of water to take up paddy cultivation.

The area of tobacco cultivation in district is put at 44 hectares, and Timmapuram village alone cultivates 30 hectares every year. This year, farmers have increased tobacco cultivation in about 65 hectares.

Vemulakonda Janaiah, a farmer, said every farmer has increased tobacco cultivation this year since the crop can sustain even with once in a week water supply while paddy needs it every day. Mr. Janaiah further said water used for one acre paddy can be utilised for five acres of tobacco. Tobacco was among the major crops in the village along with cotton and paddy. The total area under cultivation was 700 hectares.

Another farmer, Chamakuri Maraiah, said that they invest Rs. 20,000 on an acre of tobacco cultivation and get Rs. 55,000 profit after deducting the investment, which could be possible on two crops of paddy cultivation.

The villagers either sell the produce to local middlemen or they transport it to Guntur or Vinukonda in Andhra Pradesh. Apart from Timmapuram, Kunchamarthi village of Jajireddygudem mandal, and Elkaram village of Suryapet mandal, are also among the very few villages that are still cultivating tobacco in Nalgonda.

Mandal Agriculture Officer Sarath Chandra said that they are seriously studying the issue of sudden shift in farming pattern. However, he attributed it to scanty rainfall.

Jajireddygudem mandal recorded 62 per cent of scanty rainfall this year.

### **No meters for irrigation pump sets: Siddaramaiah**

Contrary to the stand of the Karnataka Electricity Regulatory Commission (KERC) on metering Irrigation Pump (IP) sets, Chief Minister Siddaramaiah on Saturday assured farmers that meters would not be installed.

He told farmers at the Raithara Rakshisi-Vidyut Ulisi (Protect Farmers and Save Energy) interaction programme that the government had not hinted at installing meters to IP sets at any point of time. The Energy Department had organised the event to seek the views of farmers on installing meters to their IP sets.

The KERC had asked the Electricity Supply Companies (Escoms) to ensure that all IP sets have meters to determine the exact quantum of electricity used for agriculture. Energy Minister D.K. Shivakumar had even announced on the floor of the House that the government had decided to bear the installation cost.

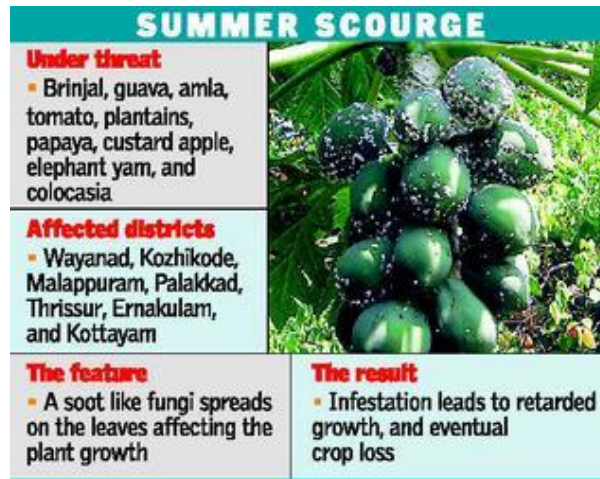
“The government will not take any decision that will be detrimental to the interest of farmers. We are only asking for suggestions from them, considering the energy crisis in the State,” he clarified.

The State legislature approved the metering of IP sets in Karnataka after entering into an agreement with farmers that they would not be charged for power consumption in February.

Mr. Shivakumar had put forward the proposal following a suggestion by Leader of Opposition K.S. Eshwarappa. The 14th Finance Commission had also favoured metering IP sets.

However, stressing on the need to audit the electricity being supplied to farmers, the Chief Minister said the government had spent Rs. 6,224 crore to supply power to IP sets, and had earmarked Rs. 7,500 crore for the 2015-16 fiscal. With an increase in the number of unauthorised IP sets, metering them was one of the ways to get a realistic estimate of the ground situation.

## Mealybug attack may intensify in summer



Agriculture experts have warned that the mealybug attack on crops, which has been reported from many parts of the State, may intensify in the coming months .

The pest attack has been reported in a large number of cultivated plants, including brinjal, guava, amla, tomato, plantains, custard apple, elephant yam and colocasia, across the State.

### Seven districts hit

Surveys carried out by the researchers at the All India Network Project on Agricultural Ornithology (AINPAO) of the College of Horticulture, Thrissur, have confirmed the pest attack in seven districts, including Wayanad, Kozhikode, Malappuram, Palakkad, Thrissur, Ernakulam and Kottayam districts.

Cash crops, medicinal plants and fruit trees are susceptible to the pest attack. The infestation can lead to retarded growth of the affected plants and eventually crop loss.

The infestation will suppress the plant growth as the pests feed on plant juice. A black soot-like fungi spreads on the leaves affecting the plant growth, researchers said.

It is estimated that there can be crop loss to the tune of 10 to 15 per cent. The pest attack may increase significantly during the peak summer months of April and May, said Mani Chellappan, a researcher at the college.

The warm and sunny days are conducive for the spread of the bug. The intensity of the attack may recede during the rainy season.

### **Papaya mealybug**

It was in 2009 that the State witnessed widespread mealybug attack. Researchers had identified the pest Papaya mealybug as responsible for the infestation, which caused widespread damage to a large number of agricultural crops. The infestation was brought under control with the help of three species of imported parasitoids.

Parasitoids, the organisms that “live in or on the body of a single host individual, eventually killing that individual,” were imported from Puerto Rico and released in the State. The bio control measure proved effective in the State as it could check the pest attack, according to some researchers.

Researchers had earlier identified the presence of nine species of mealybug in the State.

With fresh reports of outbreak of infestation coming in, those at the AINPAO unit at the Kerala Agricultural University have started a mealybug attack mapping project.

The areas of pest attack, infected plants and stages of infestation and species of mealybug responsible for the attack would be mapped during the process. The natural predators for the bugs will also be identified during the process, he said.

### **Centre will stand by rain-hit farmers: Jaitley**

Union Finance Minister Arun Jaitley on Sunday said the Centre would provide all possible help to farmers whose crops had been damaged in the unseasonal rains and hail, even if it meant relaxing the norms for compensation.

“We will go beyond the rules and provide relief to farmers on humanitarian ground,” he told reporters here after visiting Kota and Bundi districts which were the worst affected in the recent rains.

The Centre would work with the States to raise the compensation limit for affected farmers. “Prime Minister Narendra Modi is deeply concerned about



the loss to the farmers. The government will raise the compensation limit,” Mr. Jaitley told farmers in Timeli, one of the worst affected villages, about 65 km from district headquarters.

“We take the responsibility to help you stand up again after this huge loss of crops and livestock,” the Finance Minister assured the farmers. Mr. Jaitley said Mr. Modi had directed the Union Ministers to visit the most affected areas.

The Finance Minister said he was briefed by the State government on the extent of damage and he would send an inter-ministerial team to assess it within three days based on which the compensation would be announced.

The Rajasthan government made out a case for extending relief work beyond 90 days, providing 200 days of work under MGNREGA and relaxing rules for providing compensation to all farmers based on the loss rather than to only those who had lost more than 50 per cent of the crop.

The State also sought relaxation in utilising more money for relief from the MPLAD Fund and the Chief Minister’s Calamity Relief Fund.

The former Chief Minister, Ashok Gehlot, said the conditions in Rajasthan were serious and maximum support should be provided to the State government to bail out the farmers.

### **When temperature soars, drink up and stay cool**



Are you a summer person, who likes to or has to roam about under the clear blue skies?

If so, then ensure you get enough hydration through the summer, since dehydration is a serious risk for everyone at this time.

Dehydration is the excess loss of fluid, leading to metabolic imbalances. If left unchecked, it can lead to more serious problems, say doctors. During the summer months, especially in humid places like Chennai, people are more prone to dehydration. To prevent these problems, doctors advice against consuming food high in sugar, or salt, including soft drinks.

According to Jaichitra Suresh, consultant general physician at SRM Institutes for Medical Science, even glucose supplements are a bad idea.

“Glucose is only for people who have lost energy through strenuous exercise, or those who need more energy, and not for mere rehydration. Instead, oral rehydration solutions are recommended,” she said.

“It is better to stick to drinks like buttermilk, tender coconut water, or even plain water during the summer. For adults, around 3-4 litres of water a day is ideal,” said Dr. Suresh.

Kannan Bhaktavatsalam, a resident of Thoraipakkam, said the doctor has advised him to stay off soft drinks, and instead drink more water and eat fruits.

This year, he has decided to switch from aerated drinks to more traditional options, including tender coconut water, buttermilk, *padhaneer* (from the palm tree) and rice soaked in water overnight, to cool off.

Many residents across the city have also taken the decision to stick to the advice of their forefathers to keep cool during summer.

R.K. Raghunath, a resident of T. Nagar, and his wife plan to have *ragi* (a millet) porridge or rice soaked in water overnight, with raw onions and curds, every morning, till the end of summer. “We have had this routine for a while and find it comfortable in the heat. We start by February end and continue to have this breakfast till July,” he said.

Since it is also an apt time to lose weight, people like Kavinmalar said they eat plenty of watermelon and sprouts this time of the year.

For people who are looking to lose weight during summer, Dr. Suresh recommends avoiding fruit juices since studies indicate fruit juices can increase the risk of diabetes.

“To make a single glass of fruit juice, a large number of fruits is used, which means a lot more sugar is ingested. Juices also have lesser fibre than regular fruits,” she said, adding, simply eating fruits like watermelon, apples, guava and sweet lime are the best options for summer.



### **Diet diary : Non-celiac gluten intolerance — silent trouble**



GLUTEN — a protein in wheat, oats, barley and rye (European cereal) — is known to cause a condition called celiac disease. *It* is a condition in which gluten damages the intestines and reduces the ability of intestines to absorb food. The individuals with this condition can manifest typical or atypical symptoms or may have hardly any symptoms also called silent celiacs.

Typical symptoms of celiac disease include diarrhoea, gastrointestinal disturbances like abdominal distension, bloating, burping, reflux, flatulence,

pain, constipation; nausea, vomiting; growth *problems*; stunting, weight loss; anaemia, lethargy, tiredness, but not everyone has these.

Absence of typical symptoms makes the *diagnosis* difficult and often leads to ill *health* and life threatening maladies. Celiac disease can creep up silently on just *about* anyone – across age, gender, *class* and race — and turn fatal if undiagnosed. Celiac disease is diagnosed through a simple blood test and confirmed through the gold standard intestinal biopsy, which shows damage to the intestinal lining (villi).

However, another form of sensitivity to wheat called non-celiac gluten sensitivity (NCGS) has been identified. The relatively new entity is now being recognized by healthcare practitioners and it is important to understand the difference between these conditions even though they may all respond to a gluten-free diet. You may develop it at any age even if you have been consuming gluten all your life.

Non-celiac gluten sensitivity has been coined to describe those individuals who cannot tolerate gluten and experience symptoms similar to those with celiac disease but who lack the same antibodies and intestinal damage as seen in celiac disease. Research suggests that non-celiac gluten sensitivity is an innate immune response, as opposed to an autoimmune or allergic reaction. Individuals with non-celiac gluten sensitivity may also have a high prevalence of extra-intestinal or non-gastro-intestinal symptoms such as headache, “foggy mind,” joint pain, and numbness in the legs, arms or fingers. Symptoms typically appear hours or days after gluten has been ingested.

Individuals with non-celiac gluten sensitivity would also not test positive for celiac disease based on blood testing, nor do they have the same type of

intestinal damage found in individuals with celiac disease. Some individuals may experience minimal intestinal damage, and this goes away with a gluten-free diet.

The word of caution is to seek professional help, if in doubt. Self diagnosis and going off gluten can lead to a missed diagnosis of more serious celiac disease. Although gluten-free diets are gaining popularity and are warranted in celiac disease and non-celiac gluten intolerance, it must not become a fad.

### **Empower, don't patronise, the farmer**



The government's attempt to amend the UPA's *land* acquisition law is facing stiff resistance in Parliament and outside. The *Land* Acquisition, Rehabilitation and Resettlement (LARR) Act, 2013, combined three different approaches to resolve conflict over land. One is to let money speak. *It* increased compensation amounts significantly. The second is to let farmers speak. Projects involving private *companies* had to earn the consent of 80 per cent of affected households. The third approach is to let bureaucrats speak. Compulsory acquisition must be vetted by experts doing social impact assessment.



The result fits quite well the *definition* of a donkey, which is a horse designed by committee. In trying to please bureaucrats, civil society activists and farmers at the same time, the 2013 law made *land* acquisition not only expensive but also cumbersome and slow.

The proposed amendments drop consent and social impact assessment for certain projects like defence and infrastructure.

The outrage over the withdrawal of the consent requirement rings hollow. According to the LARR Act, consent is needed only if a private company is involved in the project. If an airport is to be built by the Airports Authority of India, the opinion of farmers who lose land does not count. If the project is awarded to a private company like GMR to get around public sector inefficiency and funding crunch, grassroots democracy suddenly becomes sacrosanct.

This reflexive statism is ironic if we look at history. Less than 10 per cent of forcible land acquisition in post-Independence India was for industry. Most of it was for public sector projects like dams, roads, railways and administrative buildings. Where were the protesters when the government exempted itself from consent or higher compensation in the 2013 act, which is like the wolf protecting the henhouse from everyone but itself?

It is also time we reflected on what “public purpose” really stands for. Does an airport or expressway serve the common man who travels on the roof of trains? Will a private textile mill not generate low-skilled jobs and supply cheap, mass-produced consumption goods to low-income households? What logic dictates that the government can grab land to fly the rich but not clothe the poor?

The fundamental problem that eminent domain was designed to address is that it is difficult to purchase huge amounts of contiguous land from the market. Any large project, whether in the public or private sector, faces the risk of getting stuck, or worse, not even started due to this problem.

This is why a gentle helping hand from the state is needed. The challenge is to come up with a method of determining compensation that makes farmers the beneficiaries of land conversion rather than victims or obstructionists. That is the crux of the matter, not irrelevant squabbles over the definition of public purpose or need for expert committees. Unfortunately, the 2013 act got it wrong where it matters.

Even setting aside the fact that the price of land transactions is often underreported and poorly recorded, compensation according to past market price (as specified in the now defunct 1894 law) was unfair. If a factory or SEZ is to be set up in a poor agricultural region, it immediately becomes a game-changer and can cause a real-estate boom almost overnight.

If people have to surrender their land to the government at old agricultural prices while neighbours or outsiders made a windfall selling to private parties at new industrial prices, they will protest. Compensation should be linked to the emerging market price rather than what exists on the records. Without having a clue how to measure this, the previous government decreed that recorded prices should be multiplied by four to determine compensation. There is simply no logic behind this.

There are ways to assess a more contemporary and relevant price without relying on the guesswork of lawmakers and bureaucrats.

Once news about the upcoming project is made public, the government should buy some land in and around the project site through an auction. All landowners in the region can be required to submit asking prices for their plots and the cheapest offers accepted. Some of the project land will be acquired in the auction itself. Remaining landowners can be given plots purchased around the project site instead of paying them in cash.

What robs land acquisition of legitimacy is the fact that the price is dictated by the state. Unless farmers can participate in the determination of price, the problem will not go away. If you ask farmers for how much money they are willing to give up their land, they may ask for the moon. The key to a workable solution is to combine participation with competition.

Competition can be generated by a provision to move some people to off-site land and also by a willingness to move the project. For example, if the government outlined two or three different corridors as potential sites for the Yamuna Expressway and announced that it would use the one where farmers were willing to give land at the lowest price, it could attract honest bids and minimise coercion.

Many of our current troubles spring from the inability to put a price on valuable natural resources like land, minerals, natural gas and airwaves. The lesson to be drawn from the UPA's scandals is that relying on the discretion of politicians, bureaucrats and expert committees leads to ignorant guesswork at best and corruption at worst. The best way to put a price on a scarce resource is through transparent and competitive bidding among its many claimants.

Unfortunately we refuse to extend this lesson to land. We demand SIAs, forgetting the track record of experts and officials wielding discretionary powers. We insist on farmers having the right to vote on arbitrary prices determined in Lutyens Delhi but not the right to bid on their own land reflecting local conditions and opportunities. The LARR Act patronised farmers. It did not empower them.

The byzantine process of land acquisition the UPA created needs to be simplified but unless its successor can find a way of determining compensation from the ground up rather than top down, development will be held hostage by the same old conflicts.



## **THE TIMES OF INDIA**

### **Nano-tech is science of future : Experts**

A world congress on green nano-technology and its role in sustainable agriculture concluded at Jacob School of Biotechnology and Bioengineering, Sam Higginbottom Institute of Agriculture, Technology and Sciences (SHIATS), on Friday. During the celebrations, the experts claimed that nano-technology was the science of the future and elaborated upon its many uses, including in modern farming.

The event was organised in collaboration with the [University of Missouri, Columbia, US](#).

The technical session of the congress was chaired by Prof Newman Fernandes wherein Prof Florian F Bauer of the Institute for Wine Biotechnology, University of Stellenbosch, Cape Town, South Africa, delivered a lecture on nano-technology in the wine industry. Stating that it was the science of the future, he highlighted the numerous potential applications of nanotechnology in diverse wine industry, and suggested various ways in which fields such as synthetic biology and nanotechnology, or combinations thereof, may revolutionize the making of wine.

Head, food chemistry division, department of food science and technology, faculty of agriculture technology, Bogor Agricultural University, Indonesia, Prof Christofora Hanny Wijaya talked on implementation of nano-technology in herbal-based functional drink and carotenoid rich functional ingredient.

In the second technical session, founder director of IIT-Kanpur Dr Sandip Patil talked about use of nano-fibre technology in agriculture application and elaborated upon electro-spinning nano-fibre technology for agricultural applications.

Associate professor, faculty of Veterinary Medicine, Beni-Seuf University, Egypt, Dr Saber Mohamed Abd-Allah, expressed his views on applications of nano-particles on animal reproductive cells. He gave a historic prospective of nano-material application to animal reproductive biology and the most recent developments in this field. He also focused on effect of nano-particles on antioxidant activity and spermatogenesis process in testicular tissues and emphasized on the potential benefits, threats, and challenges of nano-particles in animal reproductive organs.

Professor of pharmaceutical technology at the department of pharmacy and pharmaceutical technology, School of Pharmacy, University of Navarra, Pamplona, Spain, Prof Juan M Irache, delivered a lecture on food protein-based nano-particles for oral delivery of bioactives. He showed some of the capabilities of nano-particles, based on either casein or zein, as carriers for BACs (Biologically active compounds) and their potential use for food (functional), nutraceutical, and pharmaceutical purposes.

### **Agricultural waste may power future cars**

Agricultural by-products, such as straw, sawdust and corncobs, can be used to create environment friendly biofuel to power cars, scientists say.

Researchers from the University of East Anglia (UEA) have identified five strains of yeast capable of turning agricultural by-products into bioethanol - a well-known alcohol-based biofuel.

Researchers estimated that more than 400 billion litres of bioethanol could be produced each year from crop wastage.



Processes to generate bioethanol from straw and other by-products are currently complex and inefficient. This is because high temperatures and acid conditions are necessary in the glucose-release process.

But this treatment process causes the waste to breakdown into compounds which are toxic to yeast (furfural and hydroxymethylfurfural) - making fermentation difficult.

One way to avoid these problems is to use genetically modified yeasts. However, the new research has found five strains of naturally occurring yeasts which could be used successfully in the fermentation process.

"Bioethanol is a very attractive biofuel to the automotive industry as it mixes well with petrol and can be used in lower concentration blends in vehicles with no modifications," said lead researcher Dr Tom Clarke, from UEA's School of Biological Sciences.

"In Brazil, vehicles which run purely on bioethanol have been on the roads since 1979.

"Breaking down agricultural waste has previously been difficult because many strains of yeast necessary for fermentation are inhibited by compounds in the straw. Their toxic effects lead to reduced ethanol production," Clarke said.

The research team investigated more than 70 strains of yeast to find the most tolerant. They found five strains which were resistant to the toxic compound furfural, and which produced the highest ethanol yield.

Of the five furfural tolerant strains *S cerevisiae* NCYC 3451 displayed the greatest furfural resistance. The genomic lineage of this strain links it to yeast used in the production of the Japanese rice wine Sake.

"These strains represent good candidates for further research, development and use in bioethanol production," said Clarke.

The research is published in the journal *Biotechnology for Biofuels*.

## **NIF, ICAR join hands to promote agricultural innovations**

National Innovation Foundation, India (NIF) has entered into an understanding with the Indian Council of Agricultural Research (ICAR) to verify, validate and promote innovations from the agricultural sector.

The agreement was signed by Prof Anil K Gupta, Executive Vice Chair, National Innovation Foundation - India and Dr S Ayyappan, Secretary, DARE and Director General, Indian Council of Agricultural Research earlier this month at New Delhi in presence of R. Rajagopalan, Secretary, ICAR, Dr SN Mauria, Additional Director General, ICAR, Dr Vipin Kumar, Director and Chief Innovation Officer, NIF and other distinguished scientists.

NIF, an autonomous body of the Department of Science and Technology, Govt of India is engaged in scouting, documentation, augmenting and adding value to the innovations at the grassroots level where ICAR, is engaged in conducting research and development in agriculture and allied sectors in a number of institutions spread all over the country.

Under the agreement, NIF will share with ICAR, promising technologies from its database comprising innovative agricultural machineries, plant protection practices, improved plant varieties, farm practices *etc.*, which will be verified and validated through ICAR's available R&D facilities. A Joint Implementation Committee (JIC) chaired by Director General ICAR will monitor and steer the activities proposed under the agreement. This collaboration is expected to convert many of ideas and innovations from the grassroots to the value added products and generate wealth for innovators, and value for society. These technologies will also generate livelihood options for the youth and self- help groups in rural areas.

## **5 food processing plants to come up in Punjab**

Punjab will set up five primary processing/collection centers and pack houses at various places for proposed multi product mega food park being set up by Punjab Agro Industries on 100 acres at Ladhawal, Ludhiana at a cost of Rs 140 crore.

An official spokesperson disclosed that Punjab has been growing rapidly in the area of food processing, which will definitely witness transformation in the current beleaguered agriculture sector in the state. He said five collection centers would be set up at village Muskabad (Samrala), Saholi (Nabha), Kangmai (Hoshiarpur), Lalgarh (Samana) and Babri (Gurdaspur). Besides,

state is going to identify five more such centers to develop world class fruits and vegetables clusters.

A State Food Processing Development Council has been constituted to facilitate the investors, farmers and industrialists. "To facilitate industry in ensuring back-end supplies of raw material, contract farming act-2012 has been enacted and APMC Act is being amended.

He said the food processing activities would be in a position to liberate farmers from vicious crop cycle along financial crisis by extending value addition of various crops. To train the farmers state government would setup agricultural marketing extension and training institute.

## THE HINDU BusinessLine

### **Specially cultivated for the keg**



### **Barley to brewery Arrivals at a Saanji Unnati centre in Chomu, Jaipur**

At first glance, she appears as just another Rajasthani woman dressed in colourful attire, a veil pulled right down to her belly. But away from the gaze of a large group of male farmers in a village in Chomu tehsil in Jaipur district, when Neelam lifts her veil, there emerges a confident young female farmer. The 27-year-old is doing something unheard of in her village — a post-graduation in political science. The mother of two is part of a 60-member joint family of largely illiterate farmers that grows wheat, mustard, vegetables and barley.

The family is among several in Rajasthan that are assisted by beer manufacturer SABMiller India, under its Saanjhi Unnati (progress through partnership) project launched in 2005, to upgrade their barley crop from cattle-feed to malt quality, as well as improve other local crops such as sorghum and cassava that are used in alcohol making. Government and non-profit organisations are involved in the effort.

“Barley crop in India is feed-grade and not remunerative enough for farmers, which is why we initiated this project for improving our barley supply chain and securing a long-term, reliable source of locally grown malt-quality crop,” says Arvind Verma, Senior Manager, Barley Procurement, SABMiller India.

The company has offered farmers an ‘assured market’ for malt barley at a fixed price of Rs. 1,300 per tonne, higher than the Rs. 1,100 per tonne quoted in mandis.

Barley cultivation requires less water compared to, say, wheat, making it ideal for water-deficit States such as Rajasthan. As many as 37 Saanjhi Unnati centres are present across Rajasthan, Madhya Pradesh, Haryana, Uttarakhand, Uttar Pradesh and Punjab, covering more than 9,500 farmers and 31,000 acres.

In 2013-14, SABMiller India planned to buy 45,000-50,000 million tonnes (mt) of malt barley, with 36,822 mt targeted from its 19 centres in Rajasthan alone. The company sold 1,309 mt of certified seeds to farmers, compared to 165 mt in 2005-06, when it had only three centres.

As the company requires about 80,000 mt, it has attempted to improve yields at a research centre set up at its Neemrana bottling plant in 2012-13 at a cost of Rs. 5 crore. New strains of barley are developed to fetch a higher yield.

Through Saanjhi Unnati, the company is able to source 65 per cent of its barley requirement, from just five per cent in 2005-06.

Many of the farming families seemed happy as the project provides them a ready market and the right price. “The company people come to us, lift the crop from our fields and pay us,” says Neelam.

Some farmers in Itawa Bhogji village, however, seemed dissatisfied. “Water is such a problem. So when there is low productivity or a slight variation in

quality, we suffer. Ultimately, we use the barley to feed our cattle,” says Birju.

SABMiller India’s Verma said the company does lift slightly low-quality barley, but at lower prices.

Farmer Shivnarain conceded that his income had risen after joining the project, but higher urea prices and untimely rains had played spoilsport this year. For an enduring and profitable partnership, the company and barley growers would need to jointly tackle the threat posed by climate change and crop damage.

## **Business Standard**

### **Sowing Area under Rabi Rice and Summer Crops**

As per the latest reports received from States, the area under rabi rice as on today stands at 39.43 lakh hectare as compared to 43.55 lakh hectare at this time last year. Total area under rabi rice and summer crops moves to 52.20 lakh hectare as compared to 55.28 lakh hectare at this time last year.

It is reported that 0.53 lakh hectare area has been covered under summer pulses in Bihar followed by Gujraat (0.30 lakh ha), Utter Pradesh (0.20 lakh ha), West Bengal (0.17lakh ha), Karnataka (0.15 lakh ha), and Madhya Pradesh (0.05 lakh ha). Sowing of summer oilseeds has been reported from the state of Karnataka (2.19 lakh ha), West Bengal (1.85 lakh ha), Odisha (1.26 lakh ha), (Gujarat (0.98 lakh ha), Tamil Nadu (0.68 lakh ha), Maharashtra (0.38 lakh ha), Andhra Pradesh (0.34 lakh ha), Chhatisgarh (0.25 lakh ha), and Telangana (0.21 lakh ha).