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Efforts on to make tea industry climate-smart



Rainfall has traditionally been plentiful for growing tea, especially in India but with recent changes in the climate, surface and ground water are becoming important irrigation systems.

At a time when climate-change is impacting tea-cultivation in a major way, efforts are on to make tea estates climate-smart so that the industry develops resilience to uncertain and negative climate change impact.

A project has been launched by the Tea Research Association along with Southampton University on climate — smartening tea plantation landscapes, which would run for two years. It is funded by the U.K.-India Research Initiative.

The project is investigating the impact of climate change on tea production and livelihoods in North-East India, revolving around climate variability, land-management practices and climate-smart agriculture practices

It may be mentioned here that tea is a rain-fed perennial crop, which provides the main ingredient for one of the world's most important beverages. It supports livelihoods across the humid regions of south and south-east Asia and east Africa. The physiology of tea plants is closely linked to external environmental and climatic factors (elevation,

precipitation, temperature, soil moisture, temperature and fertility, light duration and intensity, humidity, shelter, shade and CO₂ concentration) and any adversity in these conditions can significantly impact yield, revenue and livelihood security. Rainfall has traditionally been plentiful for growing tea, especially in India but with recent changes in the climate, surface and ground water are becoming important irrigation systems.

Climate-risk is high in Assam, ranging from annual flooding of the Brahmaputra river due to intense monsoon rains and soil water-logging, to winter precipitation deficits with seasonal droughts. Regional trends indicate annual mean minimum temperatures have increased and annual mean precipitation has decreased, particularly in Assam. Such impacts will have a significant effect on tea crop productivity and directly affect the livelihoods of dependent communities as Assam contributes 50 per cent of India's 1,200- odd million kg.

The effects, which were noticed over the last few years, seem to have become pronounced over the last three years or so leading an industry honcho to say: "it is no longer climate change...it is climate chaos". ITA officials said that the weather was hardly following any pattern.

Crop-loss has become almost the norm across the world's tea growing regions. India too has suffered. What worries the industry most is that although it has so far not experienced any major crop loss, tea quality is suffering and pest-attacks are increasing. Due to climate change, there has been crop loss during seasons when some of the best teas are harvested (spring and early monsoon).

However, broad-scale climate-landscape modelling predicts that tea yields in north-east India are expected to decline by up to 40 per cent by 2050. As yield is directly associated with revenue, changing climate is also likely to impact economic structures of those reliant on tea, particularly the smallholders given their increased vulnerability to changes in the system.

Government initiates 'grow safe food' campaign

Aims to create awareness on judicious and proper use of pesticides

The Government has taken several measures for proper use of pesticides by the farmers.

The Ministry of Agriculture has stated in a release that pesticide residue data generated under the “Monitoring of Pesticide Residues at National Level” are shared with State Governments and concerned ministries/organisations to initiate the corrective action for judicious and proper use of pesticides on crops with an integrated pest management approach and to generate awareness amongst farmers.



The Department of Agriculture, Co-Operation & Farmers Welfare (DAC&FW) emphasises integrated pest management (IPM) which promotes biological, cultural and mechanical methods of pest and advocates need based, judicious use of pesticides.

This follows an earlier report released by the Agriculture Ministry stating that the government had found residues of pesticides in a significant number of vegetables, fruits, milk and other food items collected from various retail and wholesale outlets across the country. Samples collected from organic outlets were also found having residues of pesticides.

Residues of unapproved pesticides were found in 12.5 per cent of the 20,618 samples collected nationally as part of the central scheme ‘Monitoring of Pesticide Residues’, which was launched in 2005.

The samples collected during 2014-15 have been analysed by 25 laboratories.

IIMR throws light on unique jowar roti making machine

Anyone with a little culinary experience would vouch for the fact that jowar (sorghum) rotis are difficult to make. Only a skilled hand would know how to pat the dry, gluten-free dough into flat cakes, thin enough for roti but thick enough not to get charred on fire.

Even commercial success of jowar rotis in select population of the health-conscious and the diabetic has not resulted in simplifying the process of roti making.

The Indian Institute of Millets Research (IIMR), a subsidiary of Indian Council for Agricultural Research, has brought to light an improvisation by a vendor of jowar rotis from Kovvur in West Godavari district, in the hope that it would increase consumption of sorghum.

The machine can churn out 300 rotis per hour without the use of electricity, the inventor T. Suresh Kumar claims.

His finding remained unnoticed for nine years, though he has been making rotis and selling them in Rajahmundry and neighbouring areas. With intervention from IIMR, he has now applied for a patent.

The machine, in its original form, constitutes two rollers and a lever by which to operate. A dispenser will run the dough between the rollers when the levers are operated. The flattened dough emerging along the metal incline can be cut into size and baked on a gas stove. It is especially useful for youth looking for employment, Mr. Kumar said, addressing a press conference here on Saturday.

Acting Director of IIMR T.G. Nageshwar Rao said the cultivation of sorghum has come down from 20 million hectares three decades ago to a mere seven million hectares now, due to onslaught by profitable crops.

Though good for health, sorghum consumption has come down drastically due to policy interventions in favour of wheat and rice.

Attempts at marketing the machine is part of the entrepreneurship development programme undertaken by the institute.

The machine costs about Rs.25,000, and is an improvement over another appliance run with electricity which churns out 50 rotis per hour, Mr.Suresh Kumar informed. Commercial production of the machine will depend on the number of orders. Dr. Rao also said that the nine

institutions under ICAR will send teams to Telagana's nine districts on October 5 and 6, to propagate about millet cultivation.

It runs without electricity and can churn out 300 rotis per hour

Cloth bags, saplings distributed to shoppers

The Department of Agriculture Marketing and Agriculture Business and Nizhal Maiyam, a non-government organisation, on Sunday distributed cloth bags and saplings to shoppers at the farmers' market (Uzhavar Sandhai) in R.S. Puram.

Awareness

Agriculture Officer R. Thamarai Selvan said that the two had teamed up to create awareness among shoppers who turned out in large numbers at the market on Sunday.

At the entrance, the Nizhal Maiyam volunteers led by its founder B. Murugan distributed 1,500 bags and 1,000 saplings covering 10 varieties. They had planned to start at 7 a.m. and finish by 9 a.m. but it all got over much before as shoppers enthusiastically took away bags and saplings, Mr. Murugan said.

The Nizhal Maiyam approached the Department because it found shoppers using plastic carry bags inside the market. It had bought the saplings from Isha Foundation and a private nursery and ordered the bags from a wholesale merchant.

Mobile app that provides complete information on 15 crops

Annand Babu from Jayalakshmi Agro Tech explaining the agriculture app to visitors at the Krishi Mela in Shivamogga on Sunday.

This mobile app developed by a start-up social entrepreneurship venture at Hagaribommanahalli, a tier-three town in Ballari district, provides detailed information about 15 major crops cultivated in Karnataka, including arecanut, sugarcane, banana, tomato and paddy.

What is unique about this app is that it has been developed by two persons, who quit their high-paying posts in corporate sector and engaged themselves in farm sector.

Anand Babu, founder of Jayalakshmi Agro Tech, which developed the app, hails from a family of farmers in Hagaribommanahalli. After getting

a degree from IIM-Bangalore, he served for 10 years in the corporate sector.



His cousin L. Shivaprakash, an engineering graduate from Hagaribommanahalli, who also had similar ideas, joined him in the venture. Jayalakshmi Agro Tech has developed 15 apps on agriculture and two on goat and sheep rearing. The apps are available with Google Playstore and the users could download them for free. The National Bank for Agriculture and Rural Development pays Rs. 20 to the firm for each download and the amount is used for research and development activities, besides meeting administrative expenses.

Mr. Babu says that the message related to agriculture was delivered with an audio-visual support system in Kannada so that even a farmer having minimum education could understand it. The apps are loaded with information on diverse varieties of crops suited for various agro-climate zones, methods of sowing and transplantation, pest management, dosage of fertilizers to be administered, irrigation and harvesting techniques.

The app also has a reminder system on the schedule related to irrigation, administering of fertilizer, pesticide spray and vaccination to livestock.

The contents of the app were developed after wide consultations with scientists serving in various agricultural universities in Karnataka. The content is upgraded at regular intervals to keep the farmers updated with latest innovations, he said.

Nutmeg prices hit rock bottom

Nutmeg farmers, hit by low prices, are likely to get a helping hand from the Farmer Producer Society, proposed to be formed with the help of National Bank for Agriculture and Rural Development.

Prices of mace and nutmeg have ruled low for the whole of 2015. At Rs. 875 kg, mace price is not remunerative, said P. D. Zachariah of All Kerala Nutmeg Growers' Association on Sunday.

He said that the price of mace had gone up to Rs. 2,000 a kg three years ago. Since then the price has steadily moved down.

Market demand

Despite a good crop this season, farmers have not been able to reap its benefit as market demand appears to have been drastically reduced, he said. The price of nutmeg has come down to Rs. 350 a kg from the level of Rs. 770 to 800 three years ago.

Spices Board figures said that the export value of nutmeg and mace was Rs. 38.72 crore during April-June this financial year against Rs. 24.77 crore during the corresponding period last year.

Karukutty grama panchayat, near Kochi, is considered the largest nutmeg-growing panchayat in the State with about 750 hectares under the crop, said Mr. Zachariah. There are around 30,000 farmers in the State. About 3,000 farmers are members of the Growers' Association. Meanwhile, a meeting of nutmeg farmer representatives, agricultural scientists and officials from the Department of Agriculture, who met here on Saturday under an initiative by Innocent, MP, decided to form a farmer producer society to address the problems confronting the farmers.

· ***Farmers may benefit from NABARD initiative***

· ***Karukutty is largest nutmeg-growing panchayat***

Need to take up research on pest, fungi management highlighted

Agricultural scientists should visit fields regularly: Siddeshwar

G.M. Siddeshwar, Union Minister of State for Heavy Industries and Public Enterprises, has called upon the agricultural scientists to take up

research activities on pests and fungi infecting perennial crops, including arecanut and coconut.

Mr. Siddeshwar was speaking at a seminar on horticultural crops at the ongoing Krishi Mela at the University of Agricultural and Horticultural Sciences (UAHS), Shivamogga, on Sunday.



In recent times, the arecanut yeield was declining drastically owing fruit rot and yellow leaf diseases. Farmers, who cultivate coconut, were also incurring loss due to mite and black-headed caterpillar infection. The climate change and mono-cropping in large tracts of land were being blamed for the outbreak of diseases and attack by pests and fungi, he said.

Solutions suggested by the agricultural scientists for managing the pest and fungal infection in perennial crops in Karnataka had so far not proved effective. The agricultural scientists engaged in research on pest and fungal management should not confine themselves to laboratories but visit the affected plantations at regular intervals and collect information from growers on their experiences with pest management techniques.

It was also essential to re-visit traditional methods of pest and fungal management followed by farmers of yore, he said.

Mr. Siddeshwar stressed the need to provide farmers with training in value addition for agricultural produce. Farmers could form a group and engage in value-addition activities for agricultural produce to enhance their income, he said.

Venkatesh Hubballi, head of the Directorate of Cashewnut and Cocoa Development Board, in his address said that the climate in Malnad region was suitable for cashewnut and cocoa cultivation. The cultivation of both the crops was lucrative. As cashewnut wasn't water-intensive, it could be cultivated in arid regions of the district. The cocoa cultivation as a mixed crop in arecanut plantations should be popularised, he said.

C. Vasudevappa, Vice-Chancellor of UAHS, Shivamogga, and D.L. Maheshwar, Vice-Chancellor of University of Horticultural Sciences, Bagalkot were present.

Climate change and mono-cropping are reasons for outbreak of crop diseases.

G.M. Siddeshwar,

Union Minister of State for Heavy Industries and Public Enterprises

IT professional wants to prove a point as farmer

Jai Ganesh believes organic farming can be profitable.



Jai Ganesh has formed an association called Pasumai Organic Farmers Association which aims to propagate organic cultivation. Photo G. Krishnaswamy

Jai Ganesh is an IT professional with a company at Guindy. Eight years ago, when he was 26, he was on the lookout for another source of income to improve his financial position. He was very particular that his new venture should also benefit the society. So Jai Ganesh, a native of

Reddiyur in Vellore, decided to try his hand at organic farming. His father was a former agriculturalist.

“A main reason for me to take up organic farming was that one of my family members, who is also a farmer, was displaying loss of memory. We consulted a doctor and he said it was the early stage of Alzheimer’s disease.

The reason he cited was undue exposure to fertilisers. That worried me. It also set me thinking. I wanted to get people engaged in large-scale farming to adopt organic means of cultivation,” he says.

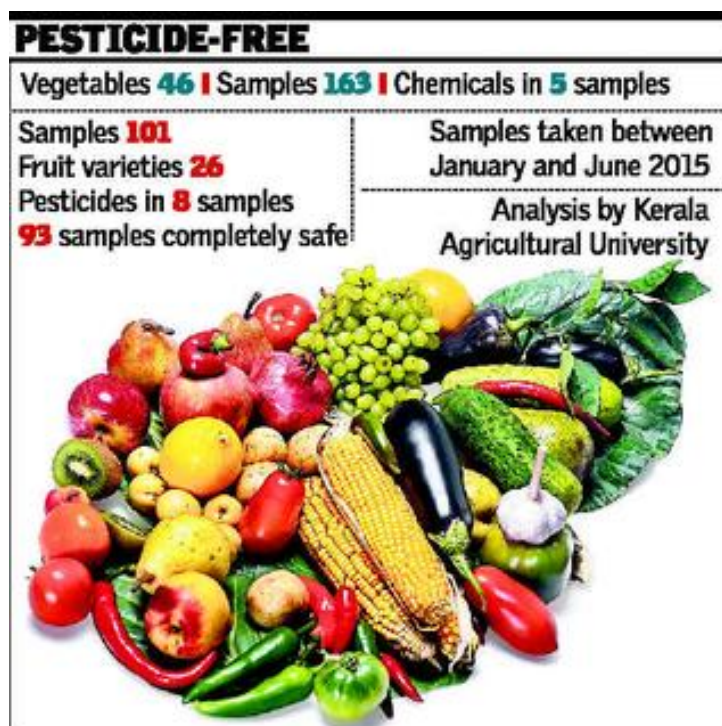
So, Jai Ganesh ventured into farming seeking the guidance of his father. “My father discouraged me from taking up farming saying I would only incur losses. Still, I went ahead and started with cultivation of lady’s finger. In the first harvest, I incurred a huge loss. Again, my father advised me to give up agriculture. Yet, I wanted to pursue it. I also did a course in organic farming. Gradually, the harvests were rich. At this juncture, I was able to prove to my father and other farmers in my village, who predominantly use chemical fertilisers and pesticides, that organic cultivation is profitable.”

“Initially, I used to bring the produce from my village and sell it at my apartments. There was a good response and that motivated me to start an organic shop called Organic Tapovanam.” As there was a demand for various kinds of vegetables and fruits, Jai Ganesh formed an association called Pasumai Organic Farmers Association which aims to propagate the fact that organic cultivation is profitable.

“Its members include youngsters who want to take up agriculture and farmers who want to switch over to organic agriculture. I, in turn, buy their produce and market them through Organic Tapovanam. The association has members from Vellore, Hosur, Kodaikanal, Dindigul and Kancheevaram.”

Now, Organic Tapovanam has come up with an online shopping facility as well. As of now, we cater to shops and households at ECR, OMR, Adyar, Besant Nagar, Guindy, Mylapore, Saidapet, Ashok Nagar, KK Nagar, Vadapalani, Porur, Nanganallur, Tambaram, Chromepet, Pallavaram, Madipakkam, Alandur, Guduvanchery and other parts of south Chennai. Those interested in learning about organic cultivation may call Jai Ganesh at 99625 76848.

Farm varsity analysis finds reduction in pesticide levels



: The incidence of hazardous chemicals in fruits and vegetables in the State has come down, as per an analysis of samples taken from various districts by the Kerala Agricultural University.

A press note issued here on Saturday said the samples were taken between January and June 2015.

Only five of the 163 samples of 46 vegetables collected from across the State were found to contain chemicals above the permissible limits under the FSSAI standards.

Two samples of Pudina leaves and one sample each of cowpea, yellow capsicum, and curry leaf were the ones found to be contaminated with chemical residues above the permissible limits.

Twelve samples of bitter gourd, red and green capsicum, green chilly, tomato, and coriander leaves were found to contain pesticide residues but below the permissible limits or unstipulated levels. As many as 46 samples were found completely safe to eat.

Out of 101 samples of 26 fruit varieties tested in KAU labs, eight samples of Musambi, grapes, and guava were found to contain pesticide residues below FSSAI-stipulated levels.

Completely safe

The rest of the 93 samples were found to be completely safe. In the case of readymade items such as chilly powder, masala powder, chilli, fenugreek, and other groceries, only one sample of cardamom was found to contain residues above the FSSAI levels.

As many as 38 samples of various items were found to contain pesticide residue below the permissible levels.

The decrease in incidence of pesticide residues are the result of increased public awareness about chemical hazards and due to decline in the use of chemicals such as Chlorpyrifos, Cypermethrin, and Ethion.

However, the latest analysis has employed FSSAI standards instead of the stricter European Union standards employed earlier.

If the latter had been used in the latest analysis, more samples may have been found contaminated, the press note said.

It is also relevant to note that FSSAI standards are not prescribed in case of certain commodities and pesticides, the press note added.

Five farmers' help centres coming up

NABARD is extending finance under RIDF for these centres

Five integrated agricultural extension centres would be set up in Tiruchi district soon. The centres would serve as a one-stop shop for technical support and input requirements for farmers.

Each of the centres would be set up at a cost of Rs. 1.50 crore with financial assistance sanctioned by the National Bank for Agriculture and Rural Development under the Rural Infrastructure Development Fund (RIDF), according to S. Suresh Kumar, Assistant General Manager, NABARD, Tiruchi. The centres would come up at Manikandam, Tiruverumbur, Vaiyampatti, Thottiyam, and Uppilliyapuram.

According to sources, 100 such extension centres are to be set up across the State. The centres will have facilities for conducting demonstrations, meetings, trainings, field campaigns for implementation of State and central schemes and offices for officials of agriculture, horticulture, seed certification, agricultural engineering, and block-level technical managers.

They would have provisions for scientific storage and mini exhibition hall.

NABARD had extended financial assistance of Rs. 24.69 crore under RIDF for construction of 10 artificial recharge structures at Manikandam, Manachanallur, Lalgudi, Manapparai, Vaiyampatti, Marungapuri, Thuraiyur, Uppilliyapuram, and Musiri taluks, Mr. Suresh Kumar said. He pointed out that NABARD had extended financial assistance of Rs. 61.7 crore for the central vegetable market coming at Kallikudi on the outskirts of the city. The total project cost is Rs. 64.95 crore and NABARD has already released Rs.12.34 crore.

Modernisation of Uyyakondan canal is another major project for which NABARD had extended assistance under RIDF. The bank has sanctioned Rs. 10.92 crore for the project.

The project had been taken up at an estimated cost of about Rs. 11.50 crore for renovating the heavily polluted city stretch of the canal. Apart from removing the silt accumulation, the funds would be utilised for providing bed lining and construction of retaining wall for 1.2 km in the Palakkarai area, where the pollution is at its worst.

NABARD had sanctioned Rs. 8.38 crore for rehabilitation of tanks, anicuts, and supply channels in Musiri, Thottiam, and Thuraiyur.

Mr. Suresh Kumar said since the inception of the RIDF, NABARD had sanctioned Rs. 777.53 crore for over 1,200 projects in Tiruchi district over the past two decades. Of this, the agriculture sector had got the maximum assistance of Rs. 427.36 crore while rural connectivity projects such as roads and bridges were sanctioned Rs. 247.37 crore. Social sector projects such as hostels, health, schools, drinking water, and sanitation were extended Rs. 103.02 crore assistance.

· The centres will have facilities for scientific storage and mini exhibition hall

· Rs. 24.69 cr. sanctioned for setting up 10 artificial recharge structures

Soyabean output estimated at 86 lakh tonnes



The production estimates of Soybean during kharif 2015 is put at 86.43 lakh tonnes, which is 3.57 lakh tonnes lower (3.97 per cent), according to the Soyabean Processors Association of India (SOPA). SOPA, which has released its estimates for area under soybean cultivation, production and productivity for Kharif 2015, has also revised its estimates of Kharif 2014 soybean crop to 90 lakh tonnes. The carryover of Soybean from last year is estimated at 9 lakh tonnes.

This year SOPA conducted Satellite based survey to ascertain the area under soybean cultivation in 58 major Soybean growing districts in Madhya Pradesh, Maharashtra and Rajasthan. For rest of the country, the government's area figures have been considered. To access the estimates of productivity and production, an extensive survey of standing and under harvest crop was conducted in Madhya Pradesh, Maharashtra and Rajasthan during September 15, 2015, to 24th September, 2015. To calculate the realistic productivity and production of Soybean, all the major factors have been taken into account.

ICRISAT introduces finger millet as mandate crop

The finger millet provides economic opportunity for smallholders. The ICRISAT genebank holds nearly 6,000 finger millet germplasm accessions from 24 countries.

Finger millet [*Eleusine coracana* (L.) Gaertn.], which figured among the six small millets in research portfolio of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), has now been formally made its mandate crop.

This is an important recognition for a crop which has been an integral part of the ICRISAT's research portfolio.



Greater visibility

“Finger millet has always been within our mandate crops but we want to provide greater visibility to this nutri-cereal that offers so much to smallholders in the form of economic opportunity and to consumers [including farm families] in the form of improved nutrition,” said ICRISAT Director-General David Bergvinson.

The ICRISAT genebank holds nearly 6,000 finger millet germplasm accessions from 24 countries, conserved for use in research and development, according to a release here on Saturday.

Among the ICRISAT projects that focus on finger millet, the Harnessing Opportunities for Productivity Enhancement of Sorghum and Millets in Sub-Saharan Africa and South Asia (HOPE) project funded by the Bill & Melinda Gates Foundation is showing encouraging results in improving productivity of finger millet and household incomes in East Africa. This was achieved by enabling farmers to adopt improved varieties and associated agronomic practices and linking producers to both input and product markets.

In Malawi, the introduction of three finger millet varieties highly valued by farmers is expected to resurrect a crop that had ‘disappeared’ from the southern region of the country. Farmers wanted access to seeds of Gulu E, ACC 32 and KNE 1124 varieties, so that they can start growing the crop again, ICRISAT stated.

According to ICRISAT, finger millet variety U15 is the most preferred for its early maturity and grain colour, while IE 3779 is preferred for its

resistance to blast disease and tolerance to lodging. Through a multi-institutional collaboration, ICRISAT scientists in East and Southern African region have generated a whole genome sequence of finger millet. In Karnataka finger millet is among the ‘climate smart’ crops that figures high on the agenda of the government.

The other mandate crops of ICRISAT are sorghum, pearl millet, chickpea, pigeonpea and groundnut.

Large area under pulses pushes up kharif sowing

The area under kharif crop is higher this season than in the previous year by 13.51 lakh hectares owing to higher sowing of pulses, coarse cereals and oilseeds — commodities whose prices are up in retail markets.

Kharif crops have been planted on 1,031.37 lakh hectares this year as against 1,017.86 lakh hectares last year. However, while the area under rice and sugarcane is broadly the same as last year, cotton sowing has dipped by 10.14 lakh hectares, pointing to the crisis from the non-payment of cane dues to farmers.

The overall sowing has improved, despite a 14-per cent deficit in rainfall during the southwest monsoon that withdrew last week.

The cultivation of pulses went up after the government announced a higher minimum support price for the kharif marketing season. Till October 1, 114.58 lakh hectares of pulses had been sown, as against 102.56 lakh hectares in the corresponding period during 2014-15. Higher sowing was reported from Madhya Pradesh, Rajasthan and Uttar Pradesh. Area under arhar, urad and moongbean is higher than others.

The sowing of coarse cereals is higher by 4.72 lakh hectares with cultivation in jowar (sorghum), bajra (pearl millet) and maize better than last year.

As for oilseeds, the higher sowing of soybean and sesamum improved the overall cultivation by 6.4 lakh hectares over last year. However, there has not been much improvement in rice cultivation. Cotton planting has dipped to 116.41 lakh hectares this year.

A new variety of chicks for rural community

Rajasri birds are less susceptible to diseases by virtue of having desi fowl inheritance

backyard poultry farming is an age old practice in rural India. It is a low cost enterprise which does not require much time and labour while ensuring high economic returns and nutritional security among rural poor. But, indigenous birds which are reared by the rural households are less productive.



However, the Poultry Research Station (PRS) of Sri P.V. Narasimha Rao Telangana State University for Veterinary, Animal and Fishery Sciences, (SPVNRTSUVAS), Rajendranagar, Hyderabad, has developed a promising backyard poultry variety, 'Rajasri' for the rural farming community.

The new variety is quite suitable for backyard poultry farming as it is hardy, attractive with multi-coloured plumage, capable of self propagation, have good body conformation with capacity to escape from predators, a good scavenger and less susceptible to diseases, says M. Gnana Prakash, Professor, Department of Animal Genetics, College of Veterinary Science, SPVNRTSUVAS.

The bird would produce nearly 150 eggs a year, attain a body weight of about 1.5 kg by 18 weeks of age, and start laying eggs in 5-6 months, Dr. Gnana Prakash, who is also the officer in charge of the PRS, adds.

Marketing of the variety would be rosy with the concept of organic farming. These birds are reared mostly in rural backyards where there is no stress to the birds, no much medication and these are reared in natural pollution free environs of rural settings. Moreover, their multi coloured plumage, resemble to desi birds, which fetch almost double the price when compared to broiler chicken. Eggs being brown shelled will also

fetch more price when compared to commercial white shelled eggs, he says.

Rajasri chicks can be produced by the farmer on his own. For this, the farmer has to maintain male and female birds to allow fertilisation. The fertile eggs produced by the hens can be put to native hen for incubation. Each hen will incubate 10-15 eggs and hatch 12-13 chicks.

Alternatively, the chicks can be procured from the Station, which produces the chicks on a large scale by using machine incubation.

Generally, elaborate housing is not required for backyard poultry farming. If they are grown on commercial scale under intensive system, then a conventional shed constructed with locally available material will do.

Feeding charges alone constitute 70 per cent of total expenditure in poultry production. But in backyard poultry, the feed cost is considered to be minimum as birds are grown on scavenging and they thrive on insects, leftover grains, and household wastes. However, if more number of birds are grown, scavenging will not be sufficient and things like broken rice, ground nut straw, wheat grain, and rice bran need to be given. If the rearing turns out to be on commercial lines, balanced ration may be formulated with locally available feed ingredients or commercial feed may be procured.

Though 'Rajasri' birds are less susceptible to diseases by virtue of having desi fowl inheritance, it is recommended to follow routine vaccination against the common viral diseases. Besides, periodical de-worming needs to be done to ward off parasitic infections.

A farmer can earn an average additional income of Rs.4,200 annually from a backyard small scale poultry unit of 20 birds. Whereas, if it is done on a commercial scale, a farmer can earn nearly Rs. 7,500 a month with a unit of 1,000 birds. Even this activity does not demand full time of the farmer and it can be managed with the help of family members or even school going children, Dr. Gnana Prakash says.

For more details readers can contact Prof. M. Gnana Prakash, Officer Incharge (Mobile:9100956360) or Dr. D. Krishna, Farm Manager (Mobile: 9440956010).

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Aqua farmers cautioned on EHP fungi

MPEDA disease surveillance teams collect samples from ponds



MPEDA officials collecting samples from a pond at Nagayalanka in Krishna district.- Photo: by arrangement

Officials of the Marine Products Export Development Authority (MPEDA) has alerted shrimp farmers on the spread of *Enterocytozoon Hepatopenaei* (EHP), a micro sporedean disease.

The disease has affected fish in several coastal districts, causing heavy loss to the farmers, said MPEDA Deputy Director (Aquaculture) S. Kandan.

“In shrimp, EHP parasite was first characterised and named from slow growing *Penaeus Monodon* (Black Tiger Shrimp) from Thailand in 2009. Recent studies indicate that EHP is seen in *L. Vannamei*,” Dr. Kandan said.

Based on the information, officials of Rajiv Gandhi Centre for Aquaculture (RGCA), a research wing of MPEDA, Chennai, collected samples from shrimp ponds in Prakasham, Guntur and Krishna districts, he said.

An alert has been sounded in the State to enlighten the farmers on prevention of EHP fungi. Eleven Disease Surveillance Teams comprising of MPEDA, National Centre for Sustainable Aquaculture (NaCSA) and Fisheries Department have been formed to collect water and shrimp samples from all major aqua culture areas in the state.

The samples will be tested at Central Aquaculture Pathology Laboratory of RGCA, at its headquarters at Sirkali, and the result would be sent to

Fisheries Department officials with necessary recommendations and suggestions, said the MPEDA Deputy Director.

NaCSA Chief Executive Officer (CEO) K. Shanmukha Rao said there was no medicine to control EHP and only the 'Best Management Practices' can prevent the disease. Farmers are requested to follow scientific methods and take bio-security methods to prevent diseases, the CEO said.

"The surveillance teams collected samples from L. Vannamei ponds located at Peddaganjam, Pandilapalli, Tanguturu, Chinnaganjam, Nagayalanka, Avanigadda, Nizampatnam and other areas and have been sent to laboratory," said Mr. Rao.

"Due to EHP fungi, the weight of the shrimp will come down and farmer will suffer loss. Recently, RGCA and NaCSA teams from Chennai and Kakinada visited the ponds to check the disease," said Mr. Kandan.

Open session on irrigation projects today

In the background of the ongoing agitation for Kalasa-Banduri and Mahadayi projects, an open-session on 'Implementation of irrigation projects – responsibilities of MPs' will be held on Monday at 11 a.m. at Kannada Sahitya Parishat, Chamarajpet.

Paper presentation

Farmer leader Hemanth Kumar will present his paper. Kannada Sahitya Parishat Pundaleeka Halambi, freedom fighter H.S. Doreswamy and Shivarudra Swami of Sri Belimath, will address the gathering.

The programme is being organised by the Kannada Ranadheerara Pade, in association with the Mahadayi-Malaprabha Pradesh Raithara Horata Samiti.

Training in paddy cultivation techniques

A free one-day training programme on system of rice intensification and direct sowing paddy cultivation techniques would be conducted at Krishi Vigyan Kendra in Veterinary College and Research Institute premises here on October 5.

A press release from B. Mohan, Programme Coordinator, said that the programme will cover types of paddy, selection of paddy for suitable

conditions, preparing the land for cultivation using gadgets, sowing, weed management and water management.

A training programme on management of sheep and goat during rainy season would be conducted on October 6.

Farmers, members of self help groups, and youths can participate in these training programmes. Interested persons can come in person on working days or register through phone numbers 04286-266345, 266244 and 266650.

Registration

For registration mentioning of Aadhaar number is mandatory, the release added.

Climate change threat highlighted

India can play crucial role in mitigating its impact, say experts



As countries around the world rededicate themselves to cutting down on carbon emissions, India could play a leading role in mitigating the impact of climate change, environment experts said on Sunday.

“India will play a major and important role in the bottom-up process of climate change,” said Miranda Schreurs, professor, Free University, Berlin.

Speaking at an international conference on Climate Change Resilience hosted by the Pondicherry Central University, Ms. Schreurs said this was not only a challenge but a real opportunity for the country.

China, India and the United States account for about 55 per cent of global CO₂ emissions. India has promised to cut its energy intensity by 35 per cent compared to 2005-levels by the year 2030 while China has said it will peak its emissions by around 2030 and the U.S. will reduce its emissions by 26 to 28 per cent compared to 2005-levels by 2030. Europe has also said it will reduce its emissions by 40 per cent, compared to the 1990-levels, by 2030.

The biggest four countries and regions had promised to initiate action. The Paris summit due in December would see a global agreement on climate change and this was a step in the right direction. But much more had to be done, Ms. Schreurs said.

Pierre Grard, Director, French Institute of Pondicherry (IFP), said assessing carbon emissions would be very fruitful as a tool for negotiations between different countries in tackling climate change.

Anisa B. Khan, Vice Chancellor (in charge) of Pondicherry University, said climate change constituted one of the gravest environmental challenges faced by mankind. The precursor was the multitude of anthropogenic activities resulting in elevated concentration of greenhouse gases.

“It is also expected to help us for mainstreaming community-based adaptation to climate change resilience into international, national and local planning and processes,” she said.

K.V. Deviprasad, Head of the Department, Department of Ecology and Environmental Sciences, participated.

“Preserve eco-system, forest wealth”

A LEARNING EXERCISE: Trekkers going towards water falls in Pachamalai on Sunday.

A day-long trekking was organised by the Forest Department and Tiruchi Trekkers at Pachamalai on Sunday. Starting from Mamarathusolai, the trekkers, numbering 110 including 48 students from Hallmark Business School, participated in the trekking for a distance of 12 km.

The objective is to promote awareness of the need to preserve eco-system, forest wealth and above all to understand the livelihood of the tribal among nature-lovers. “Every herb and shrub has its value and

should be preserved for posterity,” said R. Palaniraj, core-member of the Tiruchi Trekkers.



Although about 40 of the Tiruchi Trekkers have been taking up this annual camp at Pachamalai for the fourth consecutive year as a part of ‘Wildlife Week’ celebrations, it was a novel experience for other participants particularly students.

They understood the tourism programmes being implemented in the forest. They were surprised to have a glimpse of the Forest Bungalow which was built during the British period and has been renovated by the Forest Department as a part of the tourism development.

R. Murugan, Assistant Conservator of Forest, guided the trekkers and explained the livelihood of the tribals. They went to the Mangalam Aruvi, recently developed with pathway and about 70 steps by the Forest Department. “Prior to the eco-tourism programme, the falls was not so easily accessible,” Mr. Palaniraj said.

All along the trekking, a competition was organised on photography and videography. The winners would be selected in course of time, he said. As a follow-up, a meeting would be convened in which participants would share their experience and suggest ways and means to preserve fauna and flora on Pachamamali.



THE TIMES OF INDIA

[Paddy crop under pest attack: Agricultural varsity](#)

Paddy being cultivated in Warangal, Nalgonda, Karimnagar, Khammam and Mahabubnagar districts has come under attack by pests, said experts from Prof Jayshankar Telangana State Agricultural University on Saturday. Cotton, maize and other crop farmers have already incurred huge losses in the state after deficit rainfall this year.

In an advisory to farmers, the university has warned about paddy leaf mite infestation which was noticed extensively in these five districts. Another pest, paddy brown plant hopper, was also found, the university said.

The pest attacks have come at a stage of the crop growth where the plants are either flowering or about to begin forming seeds. The university said that farmers will need to take to spraying appropriate pesticides to control the infestations.

Simultaneously, the university said that its scientists, along with those from the Indian Agricultural Research Institute as well as state government's agriculture department officials, would travel extensively in the nine agricultural districts on October 5 and 6 to instill confidence among farmers. The university, in a release, said that its 'Rythu Sadbhavana Yatra' on the two days will see the participants advise farmers on crop-related issues as well as assure them of access to farming resources.

Meanwhile, Ranga Reddy district collector M Raghunandan instructed his officials to ensure that a preliminary report on the reasons behind suicide by any farmer in the district must be submitted to his office within 24 hours of such an event being reported. He also said that within two days of an incident, the three-member committee comprising officials from the revenue, agriculture and police department must submit its report.

[Imported apples to cost a bomb in South India](#)

An apple a day may keep the doctor away, but a recent notification by the Director General of Foreign Trade (DGFT) restricting apple imports to

only a single port on the west coast may well put it out of reach of apple lovers in the country.

A recent DGFT notification has restricted apple imports only to Nhava Sheva port in Mumbai. As a result, consumers of imported apples from south Indian cities like Hyderabad, Vizag, Vijayawada, Bengaluru, Chennai as also eastern parts of the country will now have to shell out almost double for their preferred variety of imported apples. Currently, imported apples are available in the range of around Rs 250-350 per kg in Vizag as against the domestic variety that is sold anywhere from Rs 80 to 120 per kg.

According to data on import of fresh apples available on the Agricultural and Processed Food Products Export Development Authority website, 1.75 lakh metric tonnes of fresh apples valued at Rs 1,176.03 crore were imported in 2013 14 and this shot up to 1.97 lakh tonnes in 2014-15 fiscal - with a value of Rs 1,388.72 crore. The lion's share of apple imports come from the US, China, Chile and New Zealand as also from Italy, Iran, France, Belgium, Turkey among others.



Understandably, the move, which is being interpreted as a non-tariff barrier aimed at protecting domestic producers, has kicked up a storm. Tamil Chamber of Commerce president Chozha Naachiar Rajasekar said, "The price will go up by more than 100% as there will be a delay in clearances from a single port. Let us say it takes three to five days to get clearance from Food Safety and Standards Authority of India (FSSAI), Directorate of Plant Protection, Quarantine and Storage and other agencies to get it out of port. Now it will take thrice the time to get it out

from Nhava Sheva as the port will be flooded. Plus, we will also have to pay extra for demurrage, container storage and generator charge."

He said Chennai Port Trust alone handled around 8,000 to 10,000 refrigerated containers (reefers) per annum, making Chennai one of the largest apple import ports in India.

According to a logistics provider, now the cost - just in terms of bringing a refrigerated truck with 15 tonnes from Mumbai to Vizag - will go up by 15%. "And this price rise will not be restricted to Vizag alone. Imported apples will become costlier in entire south India, including metros such as Chennai, Hyderabad and Bangalore. Prices will also go up in eastern parts of country," he explained.

Slamming the move, Andhra Pradesh Chambers of Commerce and Industry Federation vice-president G Sambasiva Rao said, "It is not correct to allow imports of apples only through one west coast port. They should create facilities and allow importers to use any port that is suitable. We object to the notification. If the government has planned this to contain illegal shipments, then it should put up more X-ray scanners."

Rajasekhar added that if the idea is to support domestic apples, then it won't help as home-grown apples meet only 40% of the demand.

The amendment in import policy conditions of apples under the exim code has been issued in the notification (No 21 2015-2020 dated 14 September 2015) issued by the DGFT.

"The notification doesn't explain any specific reason for imposing the restriction on ports other than Nhava Sheva. Usually the main reason for restriction is to safeguard domestic market when there is fluctuation in prices. In current market conditions prices of apples appear to be stable. But this will surely make imported apples costlier in the southern states," said Radha Raghuramapatruni, associate professor (international trade and economics), Gitam School of International Business (Vizag).

Bees bring sweet success to Bhandara dist farmers

Honey bees do not just produce honey. They can also increase yields of crops, especially vegetables and fruits, from 20% to 300% by ensuring cross pollination. The biggest advantage of using honey bees for cross pollination is that it will help chemical based agriculture transition to organic farming.

Realizing this potential of the bees, an electrical engineer from Visvesvaraya National Institute of Technology (VNIT) has become a farming entrepreneur. Increasing crop yield by using honey bees has become his passion. He has sowed the seeds of silent revolution that may change the way farmers look at agriculture.

Shrikant Gajbhiye, 29, happened to learn bee keeping during a five-day hobby course at Pune while doing his MBA at IIM Kozhikode. Impressed with the utility of the bees, he has launched a company named 'Bee The Change' at Mumbai. Besides helping farmers in Vidarbha, Sindhudurg, Pali, Khopoli and Virar increase yields of their crops, he is also producing and selling honey and bee-wax under 'Bee the Change' brand. In future, he wants to even produce honey venom, royal jelly, pollen (rich source of protein), propolis (bee glue) most of which have pharmaceutical applications.

To begin with, Gajbhiye started networking with farmers from Pauni village, about 80 km from Nagpur, in Bhandara district. About 25-30 farmers in the area, after taking proper training in bee keeping, installed the bee boxes in their fields. Many of them already seen a 200-300% rise in yields of vegetables like bitter gourd, drum sticks, cow pea beans, capsicum and fruits like guava, papaya, lemon and banana.

"At IIM, I learnt about social entrepreneurship or ventures. Bee The Change is thus not an NGO. It is very much a profit making company though it may take some time to take the desired shape. Farmers generally use a lot of chemical pesticides as sprays. These kill the bees," said Gajbhiye. This is the reason why honey bees are disappearing, something that is a cause of concern in almost the entire developed world. In India, even the scientists are not aware of the long term consequences of this which, if not checked in time, will disrupt mankind's food security. The use of honey bees makes agriculture more sustainable. It reduces the overall cost of production as farmers don't have to take loans to buy high cost pesticides.

Gajbhiye was lucky to get technical support from Shivaji Science College in Bhandara. Bhuwanendra Rahile, a zoology lecturer in the college, told TOI he had been supporting the venture by training farmers in making honey bee boxes, scientific bee keeping and telling them about role of bees in cross pollination.

It has not been a cakewalk for either of them. "It is difficult to convince farmers to buy these boxes that cost about Rs5000. I have literally given them free initially and gradually some began sharing half the cost. Removing the fear that bees sting and can even kill has not been easy. Once they saw that guava or lemon trees which would just have a few

hundred fruits now had thousands, they became part of the wave," Gajbhiye stated.

To some extent Bee The Change is also working with tribals who extract honey from forest trees. The tribals actually destroy the colony by smoking it from below. The company has been training them to use the jumpsuits and follow scientific honey collection method that makes extraction of honey possible every three months without destroying the colonies.

Technically as per a state government report of National Horticultural Mission quoting the Indian Council of Agricultural Research (ICAR) India needed 70 lakh bee colonies but has just 12 lakh of them. Maharashtra needed 5 lakh and had just 8000. This may change if Gajbhiye realizes his dream. He wishes to have at least 10,000 farmers with him. "It is scalable project. If you have the passion and the will, sky is the limit," he says.

Farmer quotes

"I used to sell about Rs60,000 worth of cow peas from my farm. Now I get double the amount. My brinjal output has also doubled and I sold Rs1 lakh worth. Same is the case with bitter gourd. I have just three lemon trees in my field that hardly bore any fruits as I never paid any attention to them. Now their branches touch the ground because of weight of the fruits" -- Naresh Nandurkar, a farmer from Pauni

"I grew Bengal gram in just quarter acre and got about 75-80 kg. After I kept a honey bee box in the field, the produce increase to 150kg" -- Balkrishna Panchbudhe from village Bhulewadi in Pauni

"I was in Army. I started agriculture only in 2005 and wasn't very happy. With bee keeping, I have got tremendous increase in yields of vegetables like lady finger, and crops like cow pea, turmeric, jowar, and tur. My guava and lemon trees are loaded with fruit." -- Chaitram Kotekar from village Sarandi (Bujurg) about 25km from Pauni

"I took up bee keeping only about five months back. But my guava and tur crops are looking very healthy and I am sure I can reap a good profit." -- Gyaneshwar Hemne from village Umri, about 18km from Pauni

The method

* Pollination, a natural process, is of two types-- self and cross

* In self pollination pollen from flowers of same plant fertilize the female parts of flowers

* In cross pollination the pollen for fertilization comes from flower of another plant. This improves yields. The cross pollination is helped by agents like wind, water, or insects. Honey bees are the best pollinating agents. Since they go from flower to flower collecting nectar, they help cross pollination on large scale

* Farmers buy bee hive boxes and keep between their fields. The honey bees are not disturbed. They are allowed to follow their natural course in which they start flying about 4-5 am in the morning for nectar and water collection

* Cross pollination allows stronger traits to be transmitted to seeds and help improve agriculture in the long run too

Spurt in pesticide-laced vegetables across India



It is well-known that vegetables sold in major cities contain pesticides, but it has now emerged that these harmful chemicals are present in alarmingly high doses in greens across the country.

A report by the agriculture ministry showed that there has been an almost two-fold increase in the number of samples having pesticides above the permitted maximum residue level (MRL) in vegetables, fruits, meat and spices in the past seven years. In 2008-09, 1.4% of samples tested failed the MRL test (183 out of 13,348 samples) while the figure went up to 2.6% in 2014-15 (543 out of 20,618 samples).

Vegetables accounted for over 56% of the samples which had more MRL than the limit set by the food regulator. The major culprits were green chilli, cauliflower, cabbage, brinjal, okra, tomato, capsicum and coriander leaves, according to the annual report on Monitoring of Pesticide Residues at National Level (2014-15). The samples were picked up from mandis, retail shops and also from farm gates.

The maximum number of failed samples in most test centres was from the vegetable family. For example, in Anand, out of 54 samples with MRL over permissible level, 42 were vegetable samples. It was 17 out of 34 samples in Kalyani, a suburb of Kolkata, and 14 out of 15 in Solan.

In Delhi, the situation was equally alarming. Out of 41 samples with high presence of pesticides, 31 were vegetables. These included spinach, coriander leaves, capsicum and okra. A large part of vegetables available in Delhi is grown along the Yamuna and in nearby regions. The data showed that in Gurgaon, of the 24 failed samples, 11 were vegetables.

Delhi, Mumbai Among Worst Hit			
Centres	Samples Analysed	Samples With Residues	Samples Above MRL'
PC Cell, Delhi	629	223	20
NPQS, Delhi	588	28	9
Export Inspection Council (Kolkata & Mumbai)	1,149	352	22
RPQS, Mumbai	329	123	20
MARKET SAMPLES OF VEGETABLES	Total 8,342	Samples Detected With Residues 1,875	Samples Above MRL 229

* MRL stands for Maximum Residue Limits

Similarly, in Mumbai, out of the 38 samples with high pesticide content, 25 were vegetables and in Port Blair, all eight failed samples were from this category. In Hyderabad, 27 of 51 such samples were vegetables and in Jaipur, it was seven out of 10 samples.

Recently, the Food Safety and Standards Authority of India (FSSAI) had proposed regulations for heavy metal content in a whole range of food items including vegetables to hold traders accountable and also to persuade Indian farmers to do responsible farming and adopt good practices.

"In developed countries, consumers get safe food, including fresh vegetables. Once we have standards and there is a system in place to

carry out tests instantly and disseminate the information to people, that will create an atmosphere where everyone in the production and supply chain will behave responsibly," said a government official.

Interestingly, the agriculture ministry's report showed that the number of samples having high dose of pesticide was more in samples picked up from mandis than the ones collected from the farm gate.

Mumbai is still crying over onion prices



For the last two months, onion prices have remained sky-high for many reasons; it includes unseasonal rains, less crop and alleged hoarding by traders, which put pressure on the monthly household budget.

The government tried to counter it by importing Egyptian onions, but in vain. "The onions did not suit the market as they were huge and spicy, with one piece weighing almost 200-250 gms. It was not practical for household consumption," says Ashok Walunj, director, Agricultural Produce Market Committee (APMC), who assures that the prices will come down soon, "The prices are likely to reduce by next week as we are getting supplies from Satara and Karnataka." However, till that happens consumers are looking for ways to substitute onions at home.

HOMEMAKERS' DILEMMA

Curries or as accompaniments, onions are a staple ingredient in the Indian diet. "The prices are still as high as `65-70 per kg in the markets, with no respite in malls, where prices are slightly lower at `50 per kg," says

homemaker Vinti Aneja from Juhu. However, cheap price means bad quality, says Roma Das Mitra, a homemaker from Mira Road, who adds, "We get the pinkish, dry old onions for `70 and the wet, reddish new onions for `50 which are cheap but rot easily." Most often the solution to this dilemma is to either reduce the consumption of onions or stop it completely. "Big families like ours find it very difficult to manage without onions. From using one kilo onion a day, we now manage with one kilo a week," says Meghana Ashar, who lives in a joint family in Chembur.

ONION goes missing in khau gallis too

Those who enjoy their missal pav, pav bhaji or puri bhaji with a generous sprinkling of freshly sliced onions on the side, have to contend with lesser quantity. While the onions in sev-puri and bhelpuri have been replaced by shredded cabbage, Mumbaikar's favourite 'kanda bhajiya' has gone missing from the street vendors carts. "We sell all kinds of pakodas, but have temporarily stopped kanda bhajiya despite it being a hot-selling item. We sell it only if someone wants it in bulk quantity," says Lakhanbhai, a suburban vendor.

THE WAY OUT

Apart from using fewer onions, many have found novel ways to replace them. Ginger-garlic pastes, tomato puree and coconut milk are now coming in handy. "I use more of garlic and other spices like dalchini, clove, etc to add flavour to the food. Curds or cream also lend a nice texture to the gravy," says Vinti. Spring onions are also coming to the rescue for some. The crisis has not hit the some communities like Jain as they do not use onions in their food. "We use grated cabbage or lauki for our gravy based dishes," says homemaker Namrata Jain. time to go on a sattvic diet Going without onions is a way of life for writer Moni S since she believes in Sattvic diet. "Soaring onion prices are a good opportunity to turn Sattvic. I prefer my meals without onion and garlic as it is good for the mind and body. Apart from the regular tomato puree and curds, I use poppy seeds paste to make thick and tasty gravies," says the Andheri resident.

Use onions in other forms

- Kalonji or black onions seeds can be used to add flavour and aroma to the dish.

- Fresh spring onions give the exact onion flavour.
- Try pickled onions — tiny onions pickled in a solution of vinegar, salt and other preservatives.
- Use onion powder to enhance the taste of your dish.

THE HINDU BusinessLine

DD Kisan should show farmers' success stories: Gadkari

DD Kisan should show success stories of farmers who have become prosperous as it will help others to gain knowledge about particular crop and farming, Union Minister for Shipping and Transport Nitin Gadkari said here today.

At the launch of the DD Kisan Rath Yatra here, Gadkari said DD Kisan can bring revolution in the farming sector and should showcase success stories of farmers from different parts of the country.

He called on the farmers not to solely depend much on agriculture and advocated for progressive and experimental farming for better results.

Citing an example, he said blending of ethanol in petrol was a success and today all two—wheeler and other vehicles running in the city are supplied with ethanol mixed petrol.

The Minister said farmers should also take advantage of plantation drives being undertaken along the highways across the country.

DD Kisan Rath Yatra launched for Maharashtra has already toured 11 states.

It will travel across the state and create awareness about farming and government sponsored schemes for the benefit of rural masses.

The climate's improving

India's plan against global warming could be a game-changer

India's action plan against global warming could, along with the US' and China's, set the 'climate' for a constructive engagement in Paris this December. Also called 'intended nationally determined contribution'

(INDC) in global climate jargon, it makes an affirmative push for ‘sustainable development’, a term that otherwise has a tired, hollow ring to it. Surprising those who expected an unequivocal ‘growth first’ approach from the Modi government, India has, in fact, sought to strike a balance between the ‘Copenhagen path’ and the Kyoto Protocol. The 1997 Kyoto Protocol rightly said that the developed world should clean up greenhouse gases, not only because it is responsible for the mess but also because poorer countries with low per capita GHG emissions cannot be denied their right to grow. However, the Copenhagen ministerial in 2009 implicitly argued that emerging economies such as China and India are major emitters as well and should participate in emissions management, even if they do not spell out specific targets. India has now committed to reducing the emissions intensity of its GDP by 33-35 per cent by 2030 over 2005 levels — without, and for good reasons, saying when its emissions would peak, or over what period it would come down. This position upholds its right to the atmosphere, given its very low per capita emission levels, to address the needs of electricity-deprived households. The reduction in emissions intensity can be achieved by investing in renewables and afforestation. There is no reason — going by Germany which is on its way to ‘decarbonising’ its economy by 2050 — to believe that India cannot achieve an energy transition to renewables, at a time when solar photovoltaics prices are rapidly falling.

Those who feel that Copenhagen marks a rupture after which developing countries went down a slippery slope should realise that the world has seen too much change (economic, technological and climatic) for countries such as India to be completely out of global climate management. If the Lima meet in December 2014 called for INDCs, demanding commitments of some sort from the emerging economies, it should also be taken into account that both the US and China (the top two emitters) have agreed to emission cuts, something that looked unthinkable a decade ago. (Whether that involves a transfer of GHG technologies to other regions is a moot point.)

For INDCs to have any meaning, it is important for the developed world to be less tight-fisted about technology and funds. India has estimated a requirement of \$2.5 trillion till 2030 to achieve its energy transition and adapt to climate change. Paris must focus on the vexed issue of technology and resources. With Chancellor Angela Merkel on a visit to India from today, India should engage Germany, which is involved in cutting edge research in solar PVs. Meanwhile, improvement in energy efficiency of appliances and buildings can be promoted without much ado. Emission reductions have little to do with growth in such cases.

Soyabean futures to move higher



Hopes of demand revival after the China deal and lower crop estimates will fuel the rally

The soyabean futures contract traded on the National Commodity and Derivatives Exchange has surged about 10 per cent in the last two weeks to Rs. 3,540 per quintal.

The five-month-long downtrend in the contract has thus come to an end.

There are two triggers for this price rally. First, China signing an agreement last month to buy 13.18 million tonnes of US soyabean worth around \$5.3 billion. In 2014, it had bought only 4.8 million tonnes of soyabean and paid \$2.3 billion. The increase in buying by China improved market sentiment. Second, with the south-west monsoon ending with a 14 per cent deficit, there are worries over the supply in the domestic market.

Recent data from the Soybean Processors Association of India (SOPA) shows that 111 lakh hectares have been covered under soyabean in this kharif 2015 season, lower than the 116 lakh hectares estimated initially by the government.

Production is estimated at 86 lakh tonnes, down about 4 per cent from 90 lakh tonnes in the previous season. A lower crop output thus saw speculative buying in soyabean futures.

On the charts, the recent rally looks strong. There is a strong likelihood of the NCDEX-Soyabean futures contract extending this rally in the coming weeks.

Medium-term view

The soyabean futures contract recorded a high of Rs. 4,412 in May but tanked over 30 per cent to record a low of Rs. 3,062 in August.

Subsequent to this fall the contract had consolidated sideways between Rs. 3,000 and Rs. 3,400 for more than a month. The rally in the last couple of weeks has decisively broken this range above Rs. 3,400, thereby easing the downside pressure.

Also, the price action since July suggests the formation of a double-bottom reversal pattern. The neck-line support of this pattern is at Rs. 3,400.

These indicators show early signals of a trend reversal on the charts.

The key resistance to watch is Rs. 3,737 — the 50 per cent Fibonacci retracement level.

A strong break and a decisive weekly close above this hurdle will confirm the trend reversal. Such a break can take the contract higher to Rs. 4,000 and Rs. 4,300 over the medium term.

Inability to break above Rs. 3,737 can trigger a corrective fall to Rs. 3,400 initially.

A reversal once again from here will see the contract revisiting Rs. 3,700 levels. It will keep the bullish outlook intact.

But, further break below Rs. 3,400 will increase the downside pressure for the contract. In such a scenario, the danger of the contract revisiting Rs. 3,000 levels on the downside thereafter will increase.

Short-term view

The sharp 10 per cent rally in the last two weeks has eased the downside pressure for the contract. This rally has helped the contract to break decisively above the 100- and 200-day moving average resistances poised around Rs. 3,500. At the same time, it has also strengthened the uptrend that had begun in the last week of August. Immediate supports are at Rs. 3,425 — the 55-week moving average and at Rs. 3,350.

There is no danger of a sharp fall as long as the contract trades above these levels.

A rise to Rs. 3,700 looks likely in the short term.

The bullish outlook will come under pressure only if the contract declines below Rs. 3,350. Such a break can drag the contract lower to Rs. 3,200 initially. It will also keep it pressured on the downside for a fall to Rs. 3,100 and Rs. 3,000 thereafter.

NCDEX- SOYABEAN

Supports

Rs. 3,350, Rs. 3,100

Resistances

Rs. 3,737, Rs. 4,000