13.10.2015

THE HINDU

This gene makes plants carefree

SP1 'de-stresses' plants, making them resilient to harsh conditions

By 2050, we'll have to meet the challenge of growing 50% more food, to feed a burgeoning global population. Enter climate-resilient agriculture, possibly the best chance we have of actually attaining this goal: as countries grapple with the effects of climate change-drought, higher salinity-increasingly we'll have to depend on crops that can also flourish despite its inconsistencies.

Research on agricultural resilience abounds, but the latest offering looks to plant genetics for a solution, bringing us a little closer to the goal of hardy crops. Plant cell biologists at the University of Oxford have discovered a gene that can be harnessed to give plants in a laboratory setting more resilience, making them thrive instead of whither when unfavourable conditions strike.

The research revolves around a gene known as SP1, which is entwined with the makeup of all plants, and plays a regulatory function in photosynthesis.

To carry out photosynthesis, plants depend on chloroplasts within their cells, which in turn rely on an influx of proteins to work—a kind of cellular traffic that the SP1 gene is tasked with controlling. But when a plant is stressed, a malfunction occurs in this photosynthetic machinery.

"One of the undesirable consequences of too much photosynthesisis the overproduction of toxic molecules called 'reactive oxygen species'," says Paul Jarvis , plant cell biologist at Oxford University, and author on the paper. This causes a build up of toxins, which leads to its untimely death.

To stop that accumulation occurring, photosynthesis must be slowed during times of stress-and the Oxford researchers discovered they could do this by using the SP1 gene to reduce the passage of proteins into the chloroplasts.

He and his co-researcher, Qihua Ling tested the idea by creating conditions that simulated high salinity and dryness, and then comparing responses to these conditions in three different groups of cress plants. “What we found was the plants with high levels of SP1 were more tolerant of several different stresses,” Jarvis explains.

SP1 functions in ways that aren’t fully understood, and it’s also possible it might only intensify its responsiveness in times of stress. In the future, it could form part of a toolbox that enables us to breed tougher, more climate-ready crops-a challenge of growing pertinence, as we face the looming threat of lowered yields.(c) Guardian News Service

Sheep markets to get weighing scales

The Karnataka State Sheep and Wool Development Corporation will provide weighing scales to major sheep markets in the State. “This is to help farmers get scientific prices,” said Panditaro Chidri, chairman of the corporation. Till now, sheep and goats were sold only based on how they look. If a sheep or goat looks well-groomed, it fetches a higher price. This is unscientific. That is why we want to help farmers get remunerative prices, he said. The first weighing centres will be installed in Bidar, Davangere, Tumkur, Chitradurga and Mandya.

A run to highlight the plight of farmers

Buoyed by the success of their 2,400-km-long bicycle ride from Bengaluru to New Delhi last year which raised Rs. 3.5 lakh for charity, a group of youngsters from here is now planning to highlight the plight of farmers in Karnataka through a 150-km run spread over two days from October 31.

Ride2light is a group of seven likeminded people who got together last year and participated in the relay cycling trip to Delhi, passing Goa, Mumbai,

Ahmadabad and Udaipur on the way. By the time they reached Delhi, they had raised enough money to support four charities, including those working in the areas of cancer care and building schools and toilets. “The idea this time is to have a relay run. As of now, we seven people are participating. We will run from Freedom Park to Chintamani in Chickballapur district and back, covering nearly 150 km. We want other people to join us for the run as well,” says Siddarth, a member of the group.

Mr. Siddarth, project manager, who started the group with his friend Santhosh and cousin Nirmal, who works with Indian Space Research Organisation. The organisation, Soil Foundation, according to Mr. Siddarth works in the areas of providing solar lamps, seed banks, libraries and ways to stop soil runoff in Chintamani and surrounding areas. The two-day event comprises seven half marathons (73.5 km in three half marathons of 21 km each and one 10.5 km run on each day).

Interested people can sign up athttps://goo.gl/n9CzFhand volunteers can sign up at https://goo.gl/hd4Cbj.

The 150-km run from Freedom Park to Chintamani, spread over two days, will comprise seven half marathons

Ooty chocolates now sold in Vellore

Orders have been placed for ‘varkey’ too

Home made:Chocolates from Ooty are now available at Karpagam Cooperative Supermarket.

The popular home-made chocolates of Ooty have made its way to Vellore. Chocolate lovers can now get a packet of the sumptuous treats at Karpagam Cooperative Supermarket in Vellore.

A number of varieties of the Ooty home-made chocolates are on sale at the supermarket for the last 15 days. The chocolates have been introduced in the

supermarket to give the taste of the authentic Ooty home-made chocolates for Vellore residents, officials said.

“We have purchased the chocolates from a manufacturer in Kandhal, Ooty and are packaging it under Karpagam brand,” said R. Dhayalan, joint registrar of Cooperative Societies and managing director of the Vellore District Consumers’ Cooperative Wholesale Stores Ltd.

40 varieties

Out of the nearly 40 varieties of home-made chocolates available with the manufacturer, around 10 varieties have been purchased for the supermarket. This includes plain white chocolate, plain milk, whole cashew nut, almond, crackles, fruit and nut, butter scotch and raisins.

“We have initially made a purchase of 60 kg of chocolates to see the response among customers. We will decide on further purchase depending on the response,” he added.

In fact, officials said that they planned and introduced the Ooty chocolates now keeping Deepavali in mind. They are looking at opportunities to publicise the sale of the Ooty chocolates among customers.

Varkey

In addition, the department is also getting the popular Ooty “varkey” for the supermarket. A team of officials had gone to Ooty to study firms making varkey and home-made chocolates.

“We have placed orders for maida and wheat Ooty ‘varkey’. We are purchasing varkey and chocolates from a maker in Kandhal area. Ooty varkey is likely to arrive this week. Once we get the varkey, we will put up a board at the entrance to inform the public that both chocolates and varkey are available at the supermarket,” Mr. Dhayalan added.

He said that the chocolates were being sold at a minimum margin rate.

Cost

The cost of a 200 g packet of the chocolates is as follows depending on variety - plain white (Rs. 70), plain milk (Rs. 67), nut milk (Rs. 87), bitter nut (Rs. 87), whole cashew nut (Rs. 90), almond (Rs. 100), 2 in 1 (Rs. 67), butter scotch (Rs. 80), crackles (Rs. 75), fruit and nut (Rs. 80), dates (Rs. 80), raisins (Rs. 75), white butter scotch (Rs. 80) and assorted (Rs. 110).

He said that already Ooty tea was being sold at the Karpagam supermarket and ration shops.

One lakh saplings to be planted in city

A total of four lakh saplings will be planted in the district and one lakh in the city to make up for the loss of greenery in Hudhud cyclone, HRD Minister Ganta Srinivasa Rao has said.

As many as 15,000 saplings would be planted along the 14-km greenbelt from the airport to Maddilapalem, the Minister, who participated in the plantation on the greenbelt at Tatichetlapalem to mark one year of Hudhud, said. MLA Palla Srinivasa Rao spoke.

Colloquium to strengthen emerging ecological thoughts

India today is in the crossroads of development. On one hand, the country has seen progress in industrial development, and has made strides in information technology. But on the other hand, agriculture, the mainstay of the Indian economy is on the downslide. This is due to emergence of commercial interests which have resulted in depredation of natural resources.

Under these circumstances, SOLAI (Social Life Animation India) Program, a Vellore-based non-governmental organisation has organized a two-day Colloquium on the ecological economics of late Gandhian economist J.C.

Kumarappa. He had emphasized on nature conservation as the basis for all activities including farming, health care, production and consumption.

SOLAI has been engaged, for the last more than three decades, in community-based programmes focusing on nature conservation and promotion of the local life enriching resources. The colloquium would be held at the Dr. J.C. Kumarappa Grama Thozhil Solai in Christianpet near Katpadi, about 10 km from here on October 19 and 20.

R.T. Rajan, founder director of SOLAI said that the proceedings of the programme on October 19 styled as `Pasumaiyalar Sangamam' (Greens Working Together) will be in Tamil. The proceedings of the programme on October 20, titled, `Colloquium on Ecological Economics of Dr. J.C. Kumarappa and its Relevance to India Today' will be in English.

As monsoon looms, bus routes in disarray

Delay in civic agencies completing their work has disrupted road development

A number of bus routes are not prepared for the northeast monsoon. Inordinate delay in commissioning civic utilities by other agencies has disrupted road development projects along bus routes in the city.

Chennai Corporation had planned to complete the Rs.420-crore project along 194 key roads that carry heavy traffic, ahead of the onset of the monsoon. However, work on 24 stretches has not been completed yet.

Delay in completion of such roads is expected to slow down traffic during the rains. Commuters on roads such as Perambur High Road, Velachery Main Road, West Canal Bank Road, Adyar, Canal Bank Road, Ramapuram Main Road and Indira Nagar Third Avenue have already reported hardship because of the work. Ahmed Sirajuddin, of Jamalia, said "Perambur High Road has been damaged following the work for the past few months. Residents are unable to take vehicles from interior roads to the streets. The carriageway width has reduced. They have to finish road formation

before the onset of heavy rain. The proposed platform widening has also not been completed. Pedestrians are unable to walk after a spell of rain"

Chennai Corporation is planning to carry out road cut restoration on such bus routes that had "lengthy road cuts by Metrowater and other agencies" to ease traffic congestion. The re-laying of roads may not be advisable during heavy showers, as it is likely to affect the quality of the pavement.

Work on Kaliammankoil Street, Valluvar Kottam High Road, Sterling Road, CSIR Road, Besant Avenue, NSC Bose Road and Deputy Mayor Kabalamurty Road has also not been completed because of various projects for other civic utilities.

According to Metrowater sources, the roads, where the work is still in progress, will be handed over to the Chennai Corporation by October 15 ahead of the monsoon. The water agency is taking up works to improve water and sewer network across the city.

After a long wait, the Chennai Corporation commenced work on relaying 194 bus routes in May.

The relaying of the roads was originally proposed to be completed before summer, but problems in shifting utilities – power and water supply infrastructure — reportedly affected the progress of work.

The new bus routes will have better facilities for pedestrians, including wide pavements.

Taking cue from Centre, State bans drug to save vultures

Use of Ketoprofen to be discontinued in Erode, Coimbatore, The Nilgiris.

After a ban on multi-vial drugs of Diclofenac by the Centre, now the State government has withdrawn Ketoprofen, a non-steroid anti-inflammatory drug (NSAID) used extensively for veterinary purposes to save the vulture population in the three western districts.

Despite the first batch of the drug being supplied to all the districts beginning May 2015, the Directorate of Animal Husbandry has decided to discontinue the use of Ketoprofen in Erode, Coimbatore and The Nilgiris, where the vulture population was in danger, sources say.

The drug was included in the procurement list of the Animal Husbandry Department in 2014-15.

Totally, 25,730 vials of Ketoprofen were supplied to all the districts, of which 2,190 vials were supplied to the three western districts.

The State government had included Ketoprofen based on an effort to identify an alternative to the banned drug Diclofenac.

The Centre had banned Diclofenac multi-vial doses after wildlife biologists proved that presence of the drug in the carcasses of the cattle caused the vulture population to dwindle drastically.

Vultures act as scavengers, preying on dead animals and Diclofenac in carcasses led to slow death of vultures.

Wildlife activists said that Ketoprofen, which came as an alternative, caused the same effect on the vulture population.

After reviewing the research work by wildlife scientists, the government decided to stop use of Ketoprofen immediately in the districts of Erode,

Coimbatore and The Nilgiris where the activists see an opportunity of revival of the vulture population. Further use of Ketoprofen will be discontinued for veterinary purposes in the entire State.

Meloxicam, an alternative drug, is currently included in the drug list and will be inducted in higher quantity to replace Ketoprofen completely in the State sources say.

The Animal Husbandry Directorate has instructed the Regional Joint Directors to advise the field veterinarians to strictly adhere to the exact dosage regimen of Ketoprofen 3 mg while treating the animals and also advise the cattle owners to follow the withdrawal period of seven days while disposing them of for slaughter.

S. Bharathidasan, Secretary of Arulagam, an NGO involved in vulture conservation thanked the State government for positively responding to the request.

Use of Ketoprofen will be discontinued for veterinary purposes in the entire State

Saving water through 'wick irrigation'

Wick irrigation practised at a homestead in Kozhikode.

The technique reduces water consumption for agriculture to a great extent

At a time when organic farming is gaining popularity in Kerala, there are now more options for farmers. 'Wick irrigation' is a latest technique developed by Kamalam Joseph, a scientist at the Centre for Water Resource Development and Management (CWRDM) in Kozhikode, with an aim to facilitating farming even when there is scarcity of water.

‘Wick Irrigation’ (termed Thiri Nana in Malayalam) reduces the water consumption for agriculture to a great extent. It is specifically designed for terrace cultivation, of mostly vegetables, in grow bags. A specially designed wick of 30-cm length and 1.5 inches width is inserted through a hole at the bottom of the grow bag. Half of its length goes up to the surface of the soil while the rest is inserted into a bottle containing water. The wick sucks up the water supplying only what is necessary for the plant.

60 technicians trained

The CWRDM had trained around 60 technicians from different parts of the State earlier in the year to provide expert help to those who wish to implement wick irrigation along with other irrigation and water conservation methods. Satheesh Kumar, one such expert in Kozhikode district, said that it took around two weeks to exhaust one-litre water.

The experts have formed a water management task force to reach out to the prospective farmers all over the State. The task force members also give guidance in drip irrigation, aqua culture, Kitchen ponding, rain water harvesting and pisciculture. Kitchen ponding is the method of constructing a 1-metre deep pond near the kitchen for rearing fishes. Well charging is an effective method practised by the task force for rain water harvesting. Interested farmers can contact Santhosh Kumar on 9446695744.

Women coconut tree climbers to scale new heights

Coconut tree climbing is a rewarding profession even for women.

One woman says she climbs around 40 coconut trees per day and the earning is pretty good.

The Kudumbasree Kozhikode District Mission is planning to set up a district level unit of women coconut tree climbers soon. The plan to form the unit came after the district-level anniversary celebrations of the mission held recently in Kozhikode where 15 women from the district took part in a coconut tree climbing competition. The unit will be formed by including all of them.

“A district unit of skilled coconut tree climbers and their network will be equally beneficial to the public as well as the members of the unit. The plan is to have at least one climber per block panchayat. They will be centrally coordinated,” said Kudumbasree District Coordinator T.P. Mohammed Basheer.

Priya Biju from Kattippara, who bagged the first place in the district-level competition and third place at the State level, said coconut tree climbing was a “highly rewarding profession” even for women.

“I climb around 40 coconut trees per day and my job is done mostly by mid afternoon. I have enough time to attend to my family. The earning is pretty good as well,” she said.

Priya has been climbing coconut trees for the past four years. She was one of the 21 women who were trained for it by the Kattippara Krishi Bhavan. Ironically, she was the only one who dared to make a living out of it. “Others had restrictions from their families,” she said.

There are quite a number of women coconut tree climbers in the district, especially in Unnikulam and Kodenchery regions. The skill and professionalism of the women have improved their acceptability.

“Women often hire us to climb their trees for safety reasons,” Priya said. She pointed out that the proposed unit could make it further big if they learned how to extract and process Neera, which is gaining popularity these days.

The Indian EXPRESS
JOURNALISM OF COURAGE

Express Recipes: How to make Pudina Paneer

The fresh, minty taste, and the red-white appeal of tomato and paneer make this delightful dish a winner.

The fresh, minty taste, and the red-white appeal of tomato and paneer make this delightful dish a winner.

Pudina Paneer

Serves 4
250 gms paneer – cut into 1” triangular or square pieces
4 onions – sliced
½ tsp turmeric (haldi) powder, 1 tsp red chilli paneer
¾ tsp salt, 4 tbsp tomato puree
3 big tomatoes
2 tbsp dry mint (poodina) powder (read tip, given below)
4 tbsp oil

Method

* Cut each tomato into 4 slices lengthwise, remove pulp, chop the pulp and cut the outer skin into 1" pieces. Keep aside.
* Heat 4 tbsp oil and add sliced onions, cook till brown. Add 2 tbsp water. Stir.
* Reduce heat. Add turmeric, red chilli powder and salt.
* Add pulp of tomatoes and tomato puree. Cook for 5-6 minutes or till oil separates.
* Add paneer, dry mint powder, tomato pieces and garam masala powder. Stir for 2 minutes and remove from heat. Serve hot.

Tips: Drying mint (Poodina) in a microwave…

Spread 1 cup mint leaves in a flat micro-proof plate. Microwave for 2 minutes. Give standing time for 2 minutes. Remove from microwave and leave it outside for 2 hours till dry. Store in an air tight bottle. To use, crush with the hands roughly.

Nita Mehta is a celebrated chef and has penned over 600 books. Her book cover a multitude of cuisines from around the world. 450 of her books have been on the best-seller list, and in the short span of a few years she has sold over 7.5 million books. Several of her books have also won International Awards. She has conducted cooking classes in USA, UK, Canada and several other countries, and appeared on many TV channels in cookery shows. For following Nita Mehta's recipes and buying her books online visit http://www.nitamehta.com

THE TIMES OF INDIA

Tamil Nadu Agricultural University releases pest and disease forecast

With frequent showers in the last two weeks, the risk of pest attacks and diseases in agricultural crops has increased. The Tamil Nadu Agricultural University on Monday released a forecast to help farmers to adopt preventive measures to save crops and prevent loss in yield.

The Centre for Plant Protection Studies, department of entomology and department of plant pathology have together released a pest and disease forecast for seven agricultural crops- paddy, cotton, tomato, turmeric, sugarcane, groundnut and maize.

Paddy: TNAU scientists have identified leaf folder and stem borer diseases in the crops in Tirunelveli, Salem, Kanyakumari, Theni, Thiruvarur, Villupuram, Dharmapuri, Madurai, Thanjavur and Pudukottai. To save the crops from further attack, farmers are advised to spray neem seed kernel extract 5% along with sticking agent 1 ml/lit. Farmers can also set up light traps (one/acre) to monitor the pest population. If needed, farmers can spray one of the following insecticides: Phosphamidon 40SL 225 ml/acre or Profenofos 50EC 400 ml/acre.

The experts have also predicted the possibility of an outbreak of paddy blast. Hence, the farmers are advised to spray hexaconazole (0.25%) twice a week. Besides, foliar application of 0.2% Pseudomonas fluorescens at fortnightly interval is recommended to increase the yield.

Cotton: The centres of TNAU in Dharmapuri and Madurai districts have identified sucking pests in the crop. The experts suggest the farmers to setup yellow sticky traps (5/acre) to monitor the pest population. On the other hand, to manage cotton bollworms, farmers can set up pheromone trap (5/acre) depending on the type of bollworm. If needed, they can spray indoxacarb 14.5 SC 200 ml/acre or triazophos 40 EC 800 ml/acre.

Tomato: It was noticed that the crops in Coimbatore, Erode, Tiruppur and Dindugul districts were affected with tomato leaf blight. To avoid further attack, TNAU scientists suggest to spray mancozeb (dissolve 2g in 1l water) twice a week.

Turmeric: Erode is a trade hub for turmeric, and crops in Erode, Coimbatore and Tiruppur districts have been identified with turmeric leaf spot by the TNAU scientists. To avoid loss in yield, which will in turn affect the market prices, experts advised farmers to spray mancozeb (dissolve 2g in 1l water) or propiconazole 0.2% twice a week.

Sugarcane: In Salem, Sivaganga, Theni, Thiruvannamalai, Pudukottai and Villupuram, borer pest complex were found below the economic threshold level. However, TNAU scientists advise farmers to release the egg parasitoid

Trichogramma 2.5cc/ha to avoid further attack.

Groundnut: The crop grown in Erode, Salem, Sivagangai, Thiruvannamalai, Villupuram, Pudukottai and Ramanathapuram has been found affected with leaf miner. If the rainfall levels are not normal, scientists predict that the pest may exceed the economic threshold level, thus affecting the yield. To avoid consequences, farmers have been advised to spray neem seed kernel extract 5% along with sticking agent 1ml/l.

Besides leaf miner, scientists have also spotted dry root rot in few crops. Farmers can spray 0.1% carbendazim in the soil, scientists say.

Maize: It has been found that crops in Coimbatore, Tiruppur, Madurai, Pudukottai and Dharmapuri have been affected with stem borer. Farmers are advised to monitor the adult moths by setting up light traps and, if needed, spray neem seed kernel extract 5% along with sticking agent 1ml/l.

5 myths surrounding vegetarian diet

> **Vegetarians less healthy with lower quality of life than meat-eaters!**Amitabh, Vidya named hottest vegetariansKareena turns non-vegetarian for husband SaifModi blames beauty craze, vegetarian diet for malnutrition
>
> 7 popular and effective detox foodsHealthy foods to fight blood pressureWhat food should you have on what day?How to keep fruits and veggies fresh

Misconceptions over the years have surrounded vegetarian diets and those who adopt them. Let's view the myths and see the actual reality

Myth: Vegetarians do not get enough protein.
Fact: Well, there was a time when nutritionists and dietitians even said this, but no longer. Now, we know that vegetarians get plenty of protein. What they don't get is the excessive amount of protein found in the typical modern diet. If you eat a variety of fruits, vegetables, grains and legumes, then getting enough protein is not an issue.

Myth: Vegetarians do not get enough calcium.
Fact: This myth has been applied, in particular, to vegans who have

eliminated milk products from their diets. Somehow, the notion got started that the only good source of calcium is milk and cheese. Granted, milk does have a good supply of calcium, but so do many vegetables — especially green, leafy veggies. The truth is, vegetarians suffer less from osteoporosis (a deficiency of calcium that leads to weak bones) because the body assimilates the calcium they eat more easily during digestion.

Myth: Vegetarian diets aren't balanced, so they are risking their health for their principles.
Fact: First of all, a vegetarian diet isn't out of balance. It has a good proportion of all the complex carbohydrates, protein and fat — the three macro nutrients that are the cornerstone of any diet. Plus, vegetarian food sources (plants) tend to be higher sources of most of micro nutrients. Another way to look at it is this: The average meat eater consumes one or fewer servings of vegetables a day and no servings of fruit. If a meat eater does eat a vegetable, chances are it's a fried potato. "Out of balance" depends on your perspective.

Myth: A vegetarian diet is all right for an adult, but kids need meat to develop properly.
Fact: This statement makes the assumption that protein from plants isn't as good as protein from meat. The truth is, protein is protein. It is all made from amino acids. Children need 10 essential amino acids to grow and develop properly. These amino acids are as readily available in plants as they are in meat.

Myth: Humans were designed to eat meat.
Fact: Although humans are capable of digesting meat, human anatomy clearly favours a diet of plant foods. Our digestive systems are similar to those of the other plant-eaters and totally unlike those of carnivores. The argument that humans are carnivores because we possess "canine" teeth ignores the fact that other plant-eaters have "canine" teeth, and that ONLY plant eaters have molar teeth. Finally, if humans were designed to eat meat, we wouldn't suffer from heart disease, cancer, diabetes, and osteoporosis from doing so.

Diet essentials for working women

Most working women goof up big time on right intake of diet. Here are a few tips

Earning a good career, a good position is always dream for every workaholic!

Handling umpteen things like meeting targets, maintaining schedules, meeting deadlines, travelling--it drains you out for sure. And if you are a working woman, stress is most common as you are juggling work and home.

When under stress, the most common health disorders in women are anaemia or Iron deficiency and protein deficiency. Many working women take their food habits for granted, indulgence into junk food increases which is only taste and no nourishment. The reason is they are running short of time to carry home-made food or are shy/lazy of carrying a lunch box.

And, when it is stress at work, women do get into tendency to eat less or eat too much and that too not eating right which leads to malnourishment. And many times, when loaded with too much work, you end up skipping lunch as well, followed by indulging in unhealthy food.

So what should the working women do to focus on diet? For most working women, it is essential to have atleast 750ml of milk in entire day, sprouts or boiled pulses should be included in diet atleast twice a week, 150 grams of cooked daal in one of the meals is important to overcome protein deficiency and green leafy vegetables to be included to overcome anaemia.

Also, honey with milk is a good option to stay fit and avoid nutritional deficiencies. Also, include fresh fruits, salad, a healthy breakfast and drink lot of water — it surely helps you beat the stress.

THE HINDU BusinessLine

Bringing back the goodness

For the crop Farmers were often misled into buying an application recommended as 'organic' only to discover that it contained banned chemicals. Now things are changing.

Is that fruit in your hand healthy? Even as the debate on the use of chemicals in food heats up, these three stories raise hope for what we love to eat

Ashok Gaekwad and rest of the grape farmers in Maharashtra will not forget the 2008-09 season in a hurry. They had incurred a loss of over ₹250 crore when export consignments – mainly to the European Union - were rejected due to higher than permissible pesticide residues in the grapes.

Six years on, the picture has undergone a dramatic change. Last year, the Nashik and Sangli regions of Maharashtra exported one lakh tonnes of grapes to over 19 countries, including the maiden consignment to Russia.

Though exports in 2014-15 were nearly half of the two lakh tonnes during 2013-14, the revenue at ₹1,250 crore was just 25 per cent lower than the previous year, indicating an improvement in fruit quality that fetched the farmers better rates.

The success is the result of a sustained effort by various agencies in improving farmer education, disease forecasting and monitoring of residue – of pesticides, fungicides and insecticides. Technology has become an enabler to send critical information to farmers.

“In those days, the farmers were unaware of residue standards, and the chemical CCC was found to be the main culprit behind the rejection of the export consignments,” says TS Mungade, Assistant General Manager of the Grape Growers’ Association, Maharashtra. Chlormequat Choride Cycocel (CCC), also known as Lihocin, is used as a growth retardant.

Gaekwad, who is a former president of the Grape Growers’ Association, agrees that ignorance was the major culprit for chemical residues.

“Farmers would use an application recommended as an `organic’ product and discover afterwards that it contained some banned chemicals,” he explains, pointing out that the government had no control over this. Gaekwad grows grapes on a 200-acre farm near Nashik and has been exporting the fruit for over 20 years.

Understanding the weather

“Disease and pests are a problem of more rain, while insect infestation is a result of less rain,” explains SB Sawant, Director, National Research Centre for Grapes (NRCG) , at Manjri near Pune.

The NRC has developed a disease forecasting system based on real-time data collected from a network of 85 weather stations set up by the government in the grape-growing belts. A company called Crop Tech developed the app from which the information can be accessed.

“Each of these stations sends data to a central server. Farmers who subscribe to the service (they need to key in the latitude and longitude of their farms) get access to seven-day weather forecasts from the nearest station on their

cell phones. A mathematical rule-based model calculates the weather pattern and risk of disease for the next seven days," says Sawant.

He adds that the advisory is based on the growth stage of the vines. Last year, about 3,000 farmers (of 29,000 grape growers) availed themselves of the services. This year the target is to connect with 10,000 farmers. The second significant input from the NRCG is the residue. It prepares Annexure 5, which lists the permissible chemicals.

This year, the list released on September 7, listed 46 chemicals and the maximum residue limit (MRL) guidelines as defined by the EU and FSSAI (the food regulatory body in India).

The NRCG has also put into place an elaborate residue monitoring plan through the Referral Monitoring Lab (RML) set up at its premises near Pune. The lab prepares a subsequent second list – Annexure 9 – that lists the 185-odd chemicals available in the Indian market that will be tested; it prepares standardised protocols for testing each of them.

Testing residue

The labs across the belt which wish to sign up for testing residues are first put through a qualification process. Only those that pass this test (which involves identifying chemicals in a concoction prepared by the RML) can undertake testing of grapes for residues.

"This is an annual process and the chemists are trained on global multi-residue analysis methods," says Sawant. Every farmer who wishes exports has to register on Grapenet - the APEDA's e-governance tool - and submit applications with the state department.

Since the pruning status of every vineyard is on-line, a local agriculture officer does the ground certification. Chemical residue monitoring on fruit is done for every two-hectares of farm.

The publication of lists of banned chemicals and those available in the Indian market, in addition to information on acceptable levels of MRL and PHI has benefited farmers enormously. "This is why the number of farmers who register on Grapenet has grown from 19,000 three years ago to 29,000 in 2015," says Gaekwad.

Nature’s vagaries

The last but not the least, precautionary measure are in the offing to prepare for the nature’s vagaries.

With unseasonal rains and storms no longer one-off occurrences, grape farmers are working on protecting their vineyards with plastic covers during such times.

“At present these covers have to be imported and the cost works out to ₹6 lakh per acre,” says Mungawade.

But that is expensive as grape is cultivated on about three lakh acres in Maharashtra. In a bid to cut the cost to ₹3 lakh per acre, some firms have been contracted to produce the covers on a trial basis. “We are also asking the government for 50 per cent subsidy,” he says. Maharashtra accounts for nearly 98 per cent of India’s total exports of grapes.

Last year around four per cent of the total production of 25 lakh tonnes was sold in overseas markets, nearly half of which was exported to the Europe.

From the fields to the shelves

Cleaned While washing away the contaminants from the vegetables and fruits, the ozone gas-injected water retains the nutrition quotient of the produce

On the gound A member of Lawrencedale Estates and Farms' technical team advises a carrot farmer on the benefits of bio alternates, instead of chemical supplments, to enrich the soil

One March morning, when Coimbatore resident Raju Gopukumar returned home after his walk with packets of neatly packed and labelled vegetables, his wife R Radhika was surprised. He had never bothered to buy vegetables until told to. The packets, with a “Leaf” stamp, contained vegetables such as beetroot, carrot and zucchini. Radhika was impressed because the vegetables were clean and of uniform size.

When she enquired about the shop, Raju asked her to peep out of the apartment window. There stood a “Namma Thottam” (our garden) van, which goes around the city selling fresh vegetables.

The vans belong to Lawrencedale Estates and Farms, a company founded in 2008 in the Nilgiris. “We are striving to take forward the Perimetro Vegetable Cluster Development Programme mooted by the Government of Tamil Nadu,” says Palat Vijayaraghavan, Chief Executive Officer, Lawrencedale Estates and Farms.

End-to-end

The cluster programme enables farmers to auction their produce at collection centres. The Tamil Nadu Horticulture Development Agency (TANHODA) chose Lawrencedale, in a public-private-partnership venture, to link these clusters to end-consumers, says N Mani, Joint Director (Horticulture).

The company has since opened up farmer support and aggregation centres at Masakkal, near Kotagiri in the Nilgiris, and at Thondamuthur on the outskirts of Coimbatore, where the produce from farmers is bought and put in cold storage. The vegetables are later despatched in cold-storage vans to Lawrendale’s agro processing facility near Mettupalayam, Here they are washed, graded and packed. Vijayaraghavan says that the company uses its “ozone” technology, a cleaning process, to reduce the contaminant level of the vegetables.

Containing the damage

The awareness on pesticides has risen in the local market after the alarm raised by the Kerala government in June over ‘contaminated’ vegetables coming from Tamil Nadu. It was alleged that the vegetables contained pesticide residue at least three times higher than the permissible limit.

About 100 truck load of vegetables and fruits are transported from Mettupalayam to Kerala every day. Each truck carries at least 10 tonnes of farm produce.

Till now the community seemed to be at cross-roads, not knowing which way to go. The need for higher agricultural productivity and concerns over pesticide residual impact on food items are compelling them to look at alternative options.

R Jagadeesh, a farmer from Udumalpet taluk of Tirupur district, says he had never bothered much over use of chemical sprays in his farmland, until recently.

“It's not so today. There is huge resistance to buy the vegetables such as onion and tomato which I grow in this three-acre holding.

"Buyers, mostly traders, take one look at the produce, enquire discretely about the use of chemicals before offering to pay rates that does not even cover my cultivation expense,” laments Jagadeesh. Gajendra, a farmer of Ooty, cultivates carrot, potato, beetroot, garlic and cabbage using synthetic inputs. He admits to spraying fertilisers and chemicals at every stage of the crop. "No department official or agriculture expert advises us. We use chemicals based on experience, but the nematode menace and white fly incidenceare pretty high.

Duplicate chemicals

“When the Indo-German project (promoted by the two governments) was mooted a couple of years back, we were given sprays and chemicals to control the incidence.

"This project was aimed at finding solutions to global challenges such as energy supply, environmental degradation and climate change. But pests have become immune to the spurious chemicals that we get now," laments Gajendra.

“Modern retailers increasingly face tough time sourcing vegetables which are not merely hygienic, but environmentally safe as well. Such retailers are actively turning to us for their supplies,” says the Lawrencedale CEO. G Abimanyu Ganesh, Director, QRS (Kerala-based retailer and franchisee for

Nilgiris) concedes that there are a lot of grey areas in the industry. “While awareness about food safety is high, even food inspectors cannot vouch for it as there is yet no specific mechanism.”

The fruit king is back, almost

The May 2014 ban imposed by the European Union on the import of Indian mangoes lasted seven months. But it didn't prove to be a major hurdle for the fruit exporters. According to the Agricultural and Processed Food Products Export Development Authority (APEDA), exports and revenues for the 2014-15 marginally increased over the previous year.

According to the APEDA, in 2014-15 India exported 42,998 tonnes of mangoes to 47 countries, earning ₹302 crore. In the previous year, 41,280 tonnes of mangoes were exported to 53 countries, resulting in revenues of ₹285 crore. While exports to the US and Japanese markets also improved, the biggest fall was in the UK, where the trade plunged to 329 tonnes in 2014-15 from 3,381 tonnes a year earlier.

Still, the ban, and the climatic change in the mango growing areas in Maharashtra have brought a needed thrust on improving food standards. The erratic climate has seen the production of Alphonso, the most premium variety of mango exported from the country, dip by about 40 per cent over the last two years. “Before the export ban was thrust on India, there were no organised efforts by Indian exporters to meet the importing countries food safety requirements,” says Jagadeesh Sunkad, Agriculture consultant to the Asian Development Bank.

These countries were most worried about fruit flies and seed weevil insects entering their ecosystem. These pests are predatory in nature and can harm other varieties of plants, he adds.

Since the ban, traders, farmers and the Central Government have become aware of the food safety requirements of other countries and taken steps such as irradiation, water and chemical treatments for eliminating the pest. “Insects are present in the form of eggs in the mangoes, therefore the fruit needs to be treated properly before shipping,” Sunkad said. Under irradiation, fruits are exposed to radiation to kill disease-causing micro-organisms.

Review of supply chain

After the ban, processes for the exports of mangoes were reviewed and depending on the sanitary requirements of each country the treatment process for mangoes was devised. Experts from the EU and the US were invited for inspecting the facilities for accreditation. American regulations are strict on sanitary requirements; mangoes have to be transported from Konkan to Lasalgaon in Nashik for irradiation treatment. A similar unit has been set up in Navi Mumbai, but it is now undergoing the accreditation process.

The APEDA has started a process called Mango Net, which attempts to trace the journey of a mango, right from the orchard till it reaches the customers. So if a particular fruit has flies then it could be traced back to the orchard. Vivek Bhide, a mango farmer from Ratnagiri and a member of the Maharashtra State Mango and Cashew Board, says that Mango Net needs to be strengthened further so that every outbreak of insects can be traced to the origin. “Rather than a blanket ban, a particular orchard can be banned in the future,” he says.

Volatile climate

The spurt in export volumes has not made up for the production woes of mangoes since 2009. The volatile climate has made it difficult for thousands of mango farmers in the Konkan to sustain their business. The Alphonso mango, which is the most sought-after in the country, is extensively cultivated in Sindhudurg, Ratnagiri and Raigad districts of Konkan and some areas of Pune district.

Due to effects of climate change since 2009, deficient, or untimely rains in winter have played havoc with the crop. Bhide's Alphonso production was down by 40 per cent in 2015; and if the weather continues to remain unpredictable then the 2016 season could also be a washout.

The change in climate has led to an increase in the activity of fungi, flies and insects on the mango trees. Earlier, major pest on mango trees were Mango Hopper and White Powder Mildew along with the regular Stem and Shoot Borers.

In the last four to six years, this pattern has changed. New fruit insects such as Thrips and Red Spider are now affecting the trees. Thrips attacks smaller crops such as chillies, but the crop can be saved in 12 hours if the insect is spotted early. But in a tall mango tree, it takes a while to catch the culprit, and often it is too late. Thrips eats flowers, which are essential for fruit formation.

"In the last 40 years we have been using the huge amount of pesticides based on Organophosphates, Synthetic Pyrethroids and OPM compounds, but the sad part is that the insects have developed resistance to them.
"Newer pesticides are being imported but at a huge cost. Some of the newer molecules are as expensive as ₹8,000 a kilo. Therefore, the cost of spraying is huge," Bhide said.

Pacific typhoon may delay North-East monsoon

The depression over East-central Arabian Sea has moved further away from the West Coast and has weakened into a well-marked low-pressure area.

Its influence on local weather is ebbing in tandem, but the India Met has forecast moderate rainfall at a few places over Konkan and adjoining South Gujarat region until Tuesday morning.

High winds

Strong winds speeding up to 40 km/hr and gusting to 50 km/hr may prevail along and off Konkan, Goa and south Gujarat coasts until Tuesday morning. Sea condition would be rough.

In view of this, fishermen are advised not to venture into deep sea along and off these coasts during this period.

The last 24 hours ending Monday morning saw heavy rain being reported from isolated places in Tamil Nadu from the churn caused by opposing winds over the State.

Weak north easterlies blowing from upcountry ran into remnant south westerly winds from the Arabian Sea to set up turbulence over the region and rain down the moisture.

This activity is likely to end soon, and the wind flow to turn north-easterly over the peninsula from tomorrow, going by the projections of the Met.

Reverse monsoon

But it will take a while before the flows over adjoining Bay of Bengal switch direction in this manner in order to prepare the ground for the North-east monsoon.

The reason is a building typhoon over West Pacific that is heading towards the Philippines initially and rebounding off the higher reaches of archipelago and speeding away north-northeast towards Japan.

The typhoon will pull in flows from the Arabian Sea, the Bay of Bengal and the South China Sea right into May 20, up to which forecasts were available.

This will not allow the easterly-to-north easterly flows to fall into place over the Bay of Bengal. The shift of winds is not expected to happen until the typhoon makes landfall over East Japan and weakens in the process.

According to global forecasts, the landfall is expected to happen by October 20-21. So, the North-East monsoon is likely to be delayed until then.

Rainfall deficit

Meanwhile, the country as a whole has received less than normal rain during the first 12 days of October, even as the South-West monsoon wagged its tail over the southern peninsula.

The deficit is 44 per cent even after accounting for surplus rain in the South in which Kerala, Tamil Nadu, Coastal and South Interior Karnataka, Rayalaseema and Lakshadweep received above-normal rainfall.

More rain is forecast for the region later in the week, according to a Met forecast.

Modest rebound in global cocoa grind seen in 2015-16 season

Global cocoa grindings should start to climb in the 2015-16 season, after a poor year hit by weak margins and higher chocolate prices that curbed demand, although the pace of any advance is likely to be modest as economic woes curb chocolate demand in emerging markets such as Brazil.

"I think we will see a rebound in grindings but probably only a small one, maybe in the order of two per cent for the 2015-16 season," said Jonathan Parkman, head of agriculture at broker Marex Spectron, adding that projection assumed prices would stay around current levels.

The final set of quarterly grinding figures for the 2014-15 season (October/September) are due to be issued shortly with European data scheduled for Wednesday and North America's report the following day.

The European grind in the July-September quarter is expected to be flat with a year earlier which, if confirmed, would mean there was a decline of 2.2 per cent for 2014-15, though the range from the five analysts surveyed showed the quarter could be up by as much as 3 percent.

North America's latest quarterly grind is expected to be down between 2 and 10 per cent from last year's record high, according to eight analysts, while figures from Asia should show a drop of 5 to 10 per cent.

"Chocolate (demand) has been down, especially in the US. In Europe it has picked up, not year-over-year. It's flat year-over-year," one US trader said.
"They were buying hand-to-mouth due to higher futures prices," said John Palabrica, president of MJMB LLC, a private commodity trading company in Newark, Delaware, referring to the many small US chocolate makers who buy from grinders.

Analysts said some rebuilding of stocks could increase global grindings in 2015-16.

"Cote d'Ivoire (Ivory Coast) being the largest grinder in the world now will help drive it," Ecobank analyst Edward George said, noting the removal of an export tax would help boost cocoa processing in the West African country.

Top cocoa grower Ivory Coast overtook the Netherlands in 2014-15 as the world's leading cocoa processing country, according to International Cocoa Organization estimates, which pegged global grindings down 4 per cent in 2014/15.

Analysts said the current economic crisis in emerging markets should limit the scope of any rebound.

"If you go back a couple of years, all the chocolate makers were forecasting pretty dynamic growth in emerging markets. That was where the growth in consumption was going to come from," Parkman said, adding consumption

in Brazil and other South American countries had been particularly disappointing.

Natural rubber output falls 15% in Sept, imports 24%

Natural rubber production declined 15 per cent in September to 51,000 tonnes and so did the imports, which fell 24 per cent to 32,933 tonnes from a year ago.

Natural rubber consumption too dropped to 84,500 tonnes in the said month, from 86,280 tonnes in the year—ago period.

“Production of NR (natural rubber) for September 2015 decreased 15 per cent to 51,000 tonnes compared with 60,000 tonnes in September 2014,” Rubber Board said in a statement.

Imports slumped to 32,933 tonnes last month, from 43,674 tonnes in September 2014.

In April—September of the current fiscal, natural rubber production fell 15.4 per cent to 2.81 lakh tonnes, from 3.32 lakh tonnes a year earlier.

Consumption declined 2 per cent to 5,01,535 tonnes in the first 6 months, from 5,11,565 tonnes in the year—ago period.

In the same period, imports too fell to 2,13,184 tonnes, from 2,36,640 tonnes.

However, exports grew to 208 tonnes in April—September, from 192 tonnes in the same period a year ago.

SIMA's research arm to develop colour cotton

The Southern India Mills' Association (SIMA) for Cotton Development and Research Association (CD&RA) has decided to promote naturally coloured cotton in 100 acres immediately, its Chairman CK Narayanasaami said here recently.

Speaking at the 40th annual general meeting of the association, he recalled the efforts taken by the Ministry of Textiles towards exploring the possibilities for development of naturally coloured cotton and the Government's decision to support the project both – directly and through CCI. "Central Institute for Cotton Research (CICR), Dharwad University and SIMA CD&RA have been identified as the implementing agencies for this project. We plan to promote the naturally coloured cotton on 100 acres. We are also taking efforts to develop long staple coloured cotton," he said.

Meanwhile, M-55, a long staple high yielding variety developed by CD&RA, has been taken up for national trials in 2014-15 in 20 centres across the country, he said and pointed out that this variety recorded a yield of 2,470 kg/hectare, 38 per cent ginning outturn and 7.8 elongation.

The association produced 238 kg of SHH-13 hybrid seeds, which would be distributed to the farmers in the coming season, conducted trials on high density planting system for GP-374 – a long staple, short duration variety and distributed 3,750 packets (of 450 gm each) of SIMA GKD-1 Bt cotton hybrid seed supplied by Kaveri Seed Company during the year, he said.

Earlier, Narayanasaami was re-elected Chairman of SIMA CD&RA for 2015-16 and B Lakshminarayana, Managing Director, Van Tex Ltd, re-elected Deputy Chairman and R Elango, Executive Director, Sangeeth Textiles as Vice-Chairman of the association for 2015-16.

Palm oil to test support, rise

Malaysian palm oil futures on the Bursa Malaysia Derivatives ended higher on Monday, but pared all gains made during the day as the government data showed stockpiles at a record high.

Data from the Malaysian Palm Oil Board showed September stockpile levels peaking, while production slowed from August. Exports of Malaysian palm products for October 1-10 fell 11.25 per cent from the same time period a month ago, said cargo surveyor Intertek Testing Services on Saturday.

CPO active month December futures are moving higher in line with our expectations. As mentioned in the previous update, the technical picture is turning gradually friendly now and a genuine reversal in trend could be underway.

As predicted earlier, we expected prices to correct lower initially on the back of mild overbought conditions and subsequently consolidate with a bullish bias and inch higher towards initial resistances towards MYR 2,500-30/tonnes levels. But, present prices structures do not suggest immediate strength. Prices could spend some time in the 2,225-2,350 range, before pushing higher eventually. Short-term resistances are around 2,345-50 levels.

The bigger picture has turned neutral to bullish, which means, any dips could find good support. Strong support will be seen at 2,195-98 levels followed by crucial support at 2,130-35 , and this is very important to keep the bullish trend intact. While the above supports hold, a potential technical target is near 2,645 post the resistance at 2,500-30.

We will now reassess the wave counts, as prices have crossed over above 2,370-2,400 . A possible new impulse looks to have started again. One of our targets at 1,850 was met.

The rally from there looks very impressive. The current move could push higher towards 2,645 initially and then it could correct lower in a corrective pattern towards 2,310 or even lower to 2,250, and then subsequently rise towards a medium to long-term target at 2,900, which could bring this current impulse to an end. But, this is clearly a medium to long-term expectation and not to be mistaken for a short-term view.

Any dips could prove to be opportunity to participate in the upcoming uptrend. RSI is in the neutral zone now indicating that it is neither overbought nor oversold.
As mentioned in the earlier update, the averages in MACD have gone above the zero line of the indicator hinting a bullish reversal. Only a crossover again below the zero line could hint at a resumption of the bearish trend.

Therefore, look for palm oil futures to test the support levels and then move higher again.

Supports are at MYR 2,250, 2,198 and 2,135. Resistances are at MYR 2,345, 2,377 and 2,425.

The writer is the Director of Commtrendz Research. There is risk of loss in trading.