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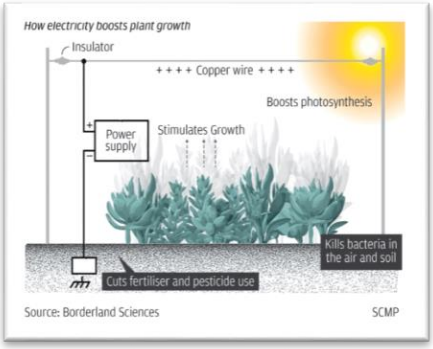
AGRITitbits

Monthly Bulletin of Agricultural News



Agri Titbits is an effort to collect and preserve agricultural news, especially spices, appearing in newspapers and online media.

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SPICES

Spices body IISR pegs losses from deluge in Kerala at ₹1254 crore

THE HINDU BUSINESSLINE-28-SEP-2018

Kerala has suffered a production loss of more than 25,000 tonnes of spices, valued at ₹1,254 crore in the devastating floods that wiped out 58,379 hectares of agricultural land, says a study carried out by the Indian Institute of Spices Research (IISR).

The State cultivates 1,62,660 hectares of spices with an annual production of 1,40,000 tonnes.

Idukki and Wayanad, together accounting for nearly 62 per cent of the spice cultivation, suffered a major loss due to the floods and rains in August that had crippled Kerala's agricultural production, in which plantation and spice crops are the backbone.

The major crops considered in the study include black pepper, cardamom, nutmeg, ginger, turmeric, and clove, which make up 90 per cent of the total spice crop. The survey was undertaken with the support of the State Agriculture Department and other agencies in 60 villages across 27 community development blocks in seven districts.

Production loss

K Nirmal Babu, Director, IISR and Santhosh J Eapen, Head (Crop Production) pointed out that black pepper witnessed a production loss of 10,700 tonnes valued at ₹402 crore as the rains destroyed 26,614 hectares of the crop.

The production loss in cardamom is estimated at 6,600 tonnes valued at ₹679 crore. In the perennial tree spices such as nutmeg and clove, the loss was pegged at 2,749 tonnes of nutmeg valued at ₹101.8 crore and 13 tonnes of clove worth ₹0.93 crore.

Production loss in spices

Crop	Area affected (ha)	Production loss in 2018-19 (tonnes)	Value (₹ million)
Black pepper	26,614	10700	4,027.0
Cardamom	25,755	6600	6,795.0
Nutmeg	4,403	2749	1,018.0
Clove	181	13	9.3
Ginger	1030	4100	605.0
Turmeric	396	976	86.8
Total	58,379	25,138	12,541.1

Meanwhile, ginger and turmeric have a crop loss of 976 tonnes and 396 tonnes, respectively, and the damage was valued at ₹6.05 crore and ₹8.68 crore.

According to the study, the total loss will escalate to ₹3,900 crore if the variable and fixed cost inputs, the cost of re-establishing the crops and the long gestation period to attain full bearing, were taken into account.

Analysis of the plant and soil samples collected during the survey also indicated widespread presence of Phytophthora in black pepper, cardamom and nutmeg samples.

The agency suggested that measures be taken for management of pests and diseases as well as soil amelioration in all flood-affected estates.

A large-scale replanting programme with high yielding varieties has been recommended to rejuvenate the flood-hit areas. It will require planting materials of about 58.5 million rooted cuttings of black pepper, 17.2 million units of cardamom, etc.

The cost for preparing the planting materials alone is estimated to be ₹194 crore and other input costs such as fertilisers, micro-nutrients, and bio agents have been pegged at ₹182 crore.

Spice production may fall by 30%: IISR report

THE HINDU-16-SEP-2018

Suggestions to reduce impact of flood

The Indian Institute of Spices Research (IISR), which conducted a field study last week on the impact of floods on spices production in six districts in Kerala, has predicted an approximate 30% fall in spices production this year.

It has submitted an interim report to the Indian Council of Agricultural Research (ICAR) recommending several measures to dull the impact of the floods and seasonal climate variation on spices crops.

The report, prepared by a 30-member multi-disciplinary team led by IISR Director Nirmal Babu, called for steps to have risk mapping and flood mapping for Kerala farmers and micro-level forewarning system to reduce crop loss due to natural calamities and subsequent weather changes.

Interest-free credit

As an immediate assistance, the report also recommended interest-free credit for affected farmers.

Avoiding agriculture ventures in vulnerable areas too was projected as an important requirement, along with proper field-level guidance for farmers.

Districts covered

The study, which covered Kozhikode, Wayanad, Malappuram, Thrissur, Idukki and Ernakulam districts, mainly took stock of the setback faced by cardamom, pepper, nutmeg, clove and ginger farmers.

The loss was huge for the cardamom farmers in Idukki where clump rot and capsule rot hit the crop. The impact of post-flood seasonal changes and water-stressed fungal diseases was huge on pepper and nutmeg farms.

Rare and harmful

Lijo Thomas, an IISR scientist, who was part of the field-level studies said the presence of a rare shot hole borer belonging to the Xylosandrus species was one reason for the quick perishing of crops after the flood.

“A shot hole borer causing such damage to the farms is a first here. The samples collected during the farm visits have been sent to the National Bureau of Agricultural Insect Resources for identification and remedies,” he said.

The study also attempted to come out with a possible percentage of decline in production in each sector and to adopt practical measures to manage the crisis.

As per the report, the expected decline in the total production of ginger alone would be around 40%. Though sector-wise figures might vary, the likely fall in the total spices production would not go beyond 30% in 2018, it said.

Spices could be nice export earner for Vietnam

VIETNAMNET BRIDGE-06-SEP-2018

Spices could be nice export earner for Vietnam

Viet Nam has the potential to boost its exports of star anise and cinnamon, but needs supportive policies from the Government, the Lang Son Star Anise Association has said.

Star anise and cinnamon are two non-timber forest species grown in Viet Nam for over 100 years.

Cinnamon is mostly grown in Yen Bai, Lao Cai, Ha Giang, Thanh Hoa, and Quang Nam on around 150,000ha, while star anise is planted in Lang Son, Cao Bang and Quang Ninh on 50,000ha, providing a sustainable livelihood for more than 200,000 ethnic minority households, it said.

According to statistics from the World Spice Organisation, globally Viet Nam ranks third in cinnamon production and second in star anise production.

The two products are mainly consumed in India, the Middle East, Japan, South Korea, the US, and the EU, with annual shipments being worth around US$400 million.

Nguyen Que Anh, chairman of the board and president of the association, said in countries with highly developed processing industries, cinnamon and star anise are the main raw materials in cosmetic and pharmaceutical production.

In particular, shikimic acid is used by pharmaceutical companies to produce Tamiflu, a bird flu medicine.

Anh, who is also chairman of the Viet Nam Staraniseed Cassia Manufacturing and Exporting Company Limited (Vina Samex Co Ltd), said his company earned US$12 million from export of the two products last year, with the main markets being India, Japan, South Korea, and Europe.

For developing high-quality products, the company has tied up with over 500 farmers and authorities in Yen Bai and Lang Son provinces since 2013 to ensure raw material sources.

Last year it obtained the international organic certificate for over 1,000ha of cinnamon and star anise forests that it has developed together with local farmers, becoming the first company in Viet Nam to get the certificate, he said.

“The certificate has helped raise the value of the products twofold.”

There is huge potential to increase cinnamon and star anise exports, he said.

But the industry faces challenges such as a lack of quality seeds and use of old planting, cultivating, harvesting, processing and preservation techniques, he said.

As a result, there is not enough supply to meet the requirements set by demanding markets, he said.

There are more than 600 companies in the spice sector, but most are trading companies who do not care about developing links with growers, he said.

Thus, farmers often face price uncertainty, he said.

Most companies involved in the sector are small or medium-sized, and so do not have the resources to invest in technology and increase their products' value, he said.

To develop sustainably and further increase the value of cinnamon and star anise products and their exports, the association has asked the Government provide soft loans to ethnic farmers and enterprises, incentives to encourage research into new varieties and transfer of new production and processing technologies.

"The Government should have a master plan for cinnamon and star anise farming so that investors can come up with long-term investment strategies."

The Ministry of Industry and Trade should help businesses participate in specialised fairs to promote export of the two products to affluent markets. — VNS

Ship carrying Indian spices that sank 400 years ago found near Lisbon

INDIA TODAY-25-SEP-2018

The researchers believe that the ship was wrecked between 1575 and 1625, when Portugal's spice trade with India was at its peak.

Archaeologists searching Portugal's coast have found a 400-year-old shipwreck believed to have sunk near Lisbon after returning from India laden with spices, specialists said on Monday.

"From a heritage perspective, this is the discovery of the decade," project director Jorge Freire said. "In Portugal, this is the most important find of all time."

In and around the shipwreck, 40 feet (12 metres) below the surface, divers found spices, nine bronze cannons engraved with the Portuguese coat of arms, Chinese ceramics and cowry shells, a type of currency used to trade slaves during the colonial era.

Found on September 3, off the coast of Cascais, a resort town on the outskirts of Lisbon, the shipwreck and its objects were "very well-preserved," said Freire.

The 400-year-old wreck was found as part of a 10-year-old archaeological project backed by the municipal council of Cascais. (Photo: Reuters)

Divers are seen during the discovery of a centuries-old shipwreck, in Cascais. (Photo: Reuters)

Freire and his team believe the ship was wrecked between 1575 and 1625, when Portugal's spice trade with India was at its peak.

In 1994, Portuguese ship Our Lady of the Martyrs was discovered near Fort of Sao Juliao da Barra, a military defence complex near Cascais.

"For a long time, specialists have considered the mouth of the Tagus river a hotspot for shipwrecks," said Minister of Culture Luis Mendes. "This discovery came to prove it."

The wreck was found as part of a 10-year-old archaeological project backed by the municipal council of Cascais, the navy, the Portuguese government and Nova University of Lisbon.

The remains of the 400-year-old ship. (Photo: Reuters)

Shifting from spices to beverages - West Bengal's farmers are reenergising with coffee

YOURSTORY.COM-18-SEP-2018

Shifting from spices to beverages - West Bengal's farmers are reenergising with coffee

Suffering losses from traditional crops of ginger and cardamom, farmers in the mountainous areas of Kalimpong and Darjeeling in West Bengal have started growing organic coffee for better returns.

With ginger and cardamom failing them, West Bengal farmers like Sonbir Rai have started growing coffee in a part of their lands Image Credit: Gurvinder Singh

Sonbir Rai (68) has been a traditional farmer throughout his life. His ancestors made a living by cultivating fields at Sangsay busti in Kalimpong district of West Bengal. Farming, however, has not been profitable for him for the past few years. He has been incurring losses for various reasons, ranging from virus infecting the crops to low price for the produce.

The onslaught of virus has caused considerable damage to the crops. The sexagenarian has now pinned his hopes on coffee farming, which he believes will turn his fortunes. In one acre of his land, he has sown coffee saplings that would bear fruit from the third year onwards.

Unable to sustain themselves by growing traditional crops, farmers in the districts of Kalimpong and Darjeeling, the latter known for its tea, are switching to cultivation of coffee, with the hope of getting better financial rewards.

Coffee instead of cardamom

The price of cardamom that once stood at Rs 1,600 per kg has now dropped to Rs 400. “Traditional crops like ginger and cardamom are not doing well and we have been facing severe losses,” Sonbir Rai told VillageSquare.in. “Coffee might swing my fortunes.”

Sonbir Rai is not alone. Around 400 farmers have started growing coffee in 347.74 acres of land in Kalimpong administrative block I and II.

Alternative crop for livelihood

Gorkhaland Territorial Administration (GTA), a quasi-autonomous administrative body, took the initiative to promote coffee cultivation in the hills and provide an alternative crop for livelihood, to the farmers facing staggering losses due to poor yield from traditional crops.

The Directorate of Cinchona and other Medicinal Plant of West Bengal is the nodal agency that collaborates with the agriculture and horticulture departments of the GTA.

Samuel Rai of the Directorate of Cinchona and other Medicinal Plant is hopeful that coffee would be a better alternate crop for Kalimpong farmers. Image Credit: Gurvinder Singh

"We have been doing the project in collaboration with other departments of GTA. The main aim is to offer an alternative livelihood option to the farmers whose farm produce does not provide them with proper income," Samuel Rai, head of Directorate of Cinchona and other Medicinal Plant based at Magpo in Darjeeling district told VillageSquare.in.

From the south

Samuel attributed the coffee plantations in the hills to be the brainchild of C Murugan, the secretary of GTA, who hails from South India, one of the major coffee producing regions of the country.

At present, Karnataka is the highest coffee producing state, producing more than 75 percent of Indian coffee, followed by Kerala, besides a smaller output from Tamil Nadu, Andhra Pradesh and Assam.

When Murugan came across coffee plantations in Gitdabling village in Kalimpong district in 2014, he hit upon the idea of growing coffee as a commercial crop.

Successful pilot

In 2014, the directorate, working with farmers interested in taking up coffee cultivation, took up the pilot project of planting coffee seedlings over two acres of land in the districts of Kalimpong and Darjeeling.

"We planted coffee saplings in Mungo, Munsong, Latpanchor and Rongu areas," Samuel said. Around one ton of coffee beans were harvested after three years and converted into coffee powder.

Expansion of project

Enthused with the production, early this year, GTA asked the directorate to prepare a Detailed Project Report (DPR) to start coffee production in the hills. Kalimpong was preferred since its temperature of 20 to 32 degree Celsius is ideal for growing coffee.

In April 2018, the directorate submitted the DPR with a budgetary estimate of nearly Rs 5 crore to start coffee plantations in the hills. The GTA sanctioned Rs 2 crore for the first phase.

The GTA has bought 7.20 lakh coffee saplings from nurseries in Chikmagalur of Karnataka. About 3.72 lakh seedlings that have been certified by the Coffee Board have already been distributed. The department is now contemplating starting a coffee nursery locally.

Eager farmers

With cardamom and ginger failing them and with the oranges they grew also getting destroyed due to pest attacks, and unable to sustain themselves with other crops like paddy and maize, the farmers were eager to try growing a different cash crop.

Coffee saplings from the nurseries of the southern states of India are ready to be planted.

The farmers were identified on the basis of their interest for growing coffee. The department selected farmers whose land was registered in their name and who were willing to spend 25 percent of the cost, so as to have ownership over the cultivation. The GTA gives 75 percent subsidy to farmers for purchase of seedlings.

The farmers grow coffee on a trial basis in 20-30 percent of their land. The coffee they grow is organic by default and also by choice. According to officials, about 80 percent of the soil is organic in nature, as chemicals are not used in the fields. Pursuing organic farming has been a conscious decision to command better price. The farmers are able to do so since they don't deal with too many pests.

Coffee cultivation

The entire coffee growing area has been divided into four clusters comprising of 34 villages in Sangsay Bhalukhop, Algarah and Gitdabling in Kalimpong block I and II.

We are planting Chandragiri variety, which is suitable for this locality as it is resistant to trunk borer and coffee rust problems," Mahadev Chhetri, senior scientific officer of the GTA horticulture department told VillageSquare.in. "We wish to create a brand of Kalimpong coffee like the Darjeeling tea."

According to Chhetri, farmers would be taken to Karnataka in September this year, to be trained by coffee experts.

Optimism reigns

The Central Coffee Research Institute (CCRI) has decided to wait and watch the progress. "It's a good initiative but they need proper support and infrastructure for growing coffee," CG Anand, Joint Director of Research at CCRI told VillageSquare.in. "We have to wait for the first produce to know the quality of the coffee and whether it has the potential to compete in the international market."

Samuel, however, is optimistic. "The specialty of Kalimpong coffee is that it is completely organic and the coffee experts who visited Kalimpong have given a positive feedback on the coffee."

After Kerala floods, spices costlier by 20% in Delhi

DAILY NEWS & ANALYSIS-04-SEP-2018

The Kerala floods that wreaked havoc across the state have sent prices of spices in the national capital into a tizzy. With an average increase of Rs 100 to Rs 200 per kilogram in different categories, households and restaurants are feeling the pinch.

The two southern states account for nearly 80 per cent of the supply of nutmeg, black pepper, dry ginger prices to the entire country. "Most of the crops and stocks were damaged in the floods," said ML Prasad, former president of India Pepper and Spices Traders Association.

At Khari Baoli, Asia's biggest spice market, aromatic spices like green cardamom, mace (commonly called javitri), nutmeg or jaiphal black pepper, are being sold at 20 per cent more than the rate they were commanding before the floods.

SPICY TADKA TO HOME FOOD

Spice	Prices in July	Current price
Cardamom	₹1,200/Kg	₹1,500/kg
Black pepper	₹360/Kg	₹520/Kg
Nutmeg	₹600/Kg	₹800/Kg
Jeera	₹170-180/kg	₹200/Kg
Ginger	₹120/Kg	₹200/Kg
Dry mace	₹1,000	₹1,350

Hari elaichi which had selling price of Rs 1100 per kg, is now priced at Rs 1300 for a kg. At the current princely sum Rs 1700 per kg, as opposed to the earlier rate of Rs 1400, crimson-coloured javitri has also become an expensive commodity.

Wholesalers at Khari Baoli agree that even though continue to do brisk business, prices have gone up due to limited supply. "We have not received any fresh stock in the past ten days or so because of what happened in Kerala.

If we do not receive more merchandise, prices may shoot up by 40-50 per cent," said Shyam Kumar, a wholesale dealer.

Spice traders in Chennai also confirmed a jump in the rates. "In the last two weeks, cardamom, pepper, nutmegs and dry mace have become costlier," said Popat B Jain of BR Traders, a major spices trader in Chennai.

Prakash Namboodri of Kochi-based All India Spices Exporters Forum said the prices should come down in a couple of months as this is not the main harvest time. He said cardamom was not affected much by the flood, adding that the prices have gone up not only because of the supply-demand dynamics alone but "it is a heavily traded commodity".

Homemakers are worried about kitchen budget toppling, so are restaurants serving Indian and Mughlai cuisine.

Noida resident Nidhi Rastogi said, "Black pepper and green cardamom are regularly used spices in my kitchen. Now that they have become so expensive, I will have to replan everything. Imagine having morning chai without elaichi!."

Kerala floods spur rise in prices of spices at APMC

TIMES OF INDIA-29-AUG-2018

Kerala floods spur rise in prices of spices at APMC TNN | Aug 29, 2018, 04.30 PM IST Printed from The floods in Kerala have pushed the prices of spices imported from the state by at least 25 per cent. The prices of spices have also gone up in the wholesale market. This has increased costs for retailers. A massive wholesale trade of these spices takes place at APMC market in Navi Mumbai. About 300 vehicles are loaded daily here of sugar, jaggery, and spices. The unprecedented flooding that took place in Kerala earlier this month has reduced the supply of cardamom, pepper and bile leaf from 20 to 25 per

cent. The prices are likely to remain high for sometime as large part of crop plantation has been damaged in Kerala and normalisation of supplies is likely to take time. Speaking about the price hike, Kirti Rana, director, Navi Mumbai Merchants Chamber told Maharashtra Times, "Due to supply disruption, the prices of these spices have gone up. Any natural or man-made disaster affects the production of goods in that region. So the prices of spices have increased after the floods." In the APMC market of Navi Mumbai, the rates of black pepper are currently 3.5 to 400 Rs/kg. In the wholesale market, this rate is more than 100 rupees to Rs 150 for the same. 9/14/2018 Kerala floods spur rise in prices of spices at APMC - Times of India The price change in the wholesale market automatically affects the prices in the retail market, added Kirti Rana. Besides spices, the supply of coconut to most parts in Mumbai is also badly affected due to the devastating floods. Dada Patil, a trader in a wholesale market of Byculla in Mumbai, said, "Apart from spices, we are also not getting the supply of coconuts. Due to less availability in the market, prices have gone up." The spices that come from Kerala are nutmeg (jaiphal), dry mace (javantri), cloves (lavang), green cardamom (elaichi/velchi), dry ginger (sonth), and black pepper (kali mirch).

RESEARCH NEWS

Over-regulating gene editing slows down innovation, Bayer says

EURACTIV-23-SEP-2018

An extensive regulatory process on gene editing adds more bureaucracy, increasing costs and slowing down innovation, Liam Condon, President of Bayer's crop science division told EURACTIV.com.

Speaking on the sidelines of the company's first major event after the merger with Monsanto in Monheim (18 September), Condon commented on the EU Court of justice's recent ruling that organisms obtained by mutagenesis plant breeding technique are GMOs and should, in principle, fall under the GMO Directive.

"I do think it slows down innovation in Europe and this will not only relate to agriculture but also to human medicines. But first and foremost, discussion right now is about agriculture," Condon said.

According to Condon, small and medium-size breeding companies will not be able to afford the development of products using gene editing due to the extensive regulatory process that makes the efforts too expensive.

"This actually helps big companies who can afford to spend money on R&D but it prolongs in any case registration, making everything much more expensive," he said.

Bayer's executive also stressed that these added costs did not make the product safer, which is the real objective of the legislation. "Legislation wants to ensure that consumers have safe food, that would be ensured anyway. This process just adds on additional at the end of the day more bureaucracy and cost," he emphasised.

For Bob Reiter, former Monsanto Vice-president and now Global Head of R&D at Bayer Crop Science division, the decision was a "tremendous disappointment", and now the company is looking in how it could do to potentially influence this decision.

"The thing is that we cannot use the technology which basically does nothing but creates things that we already have in nature," he added.

Glyphosate and CAP

Bayer's acquisition of Monsanto attracted some criticism for the risk to its reputation of merging with the firm behind Roundup, the controversial glyphosate-based weed killer.

A landmark San Francisco trial in August ordered Monsanto to pay $289 million in damages to a plaintiff who had sued the company saying he had cancer because of his exposure to the herbicide. Hundreds of lawsuits are pending in US courts.

Condon told the press that Bayer inherited from Monsanto insurance standard's litigation products that will protect the company for the next trials in the US. At the same time, he stressed, "There is no change in regulatory status anywhere in the world and there are no new scientific findings or facts [on glyphosate]."

"All regulatory approvals remain completely intact and growers everywhere continue to have full access to glyphosate," he added.

He commented positively on the recent Brazilian court ruling which overturns an injunction having suspended registration of glyphosate in the country, saying that "the reactions of both associations and Brazilian agricultural ministry explains how important glyphosate is for growers."

Asked by EURACTIV to comment on the post-2020 Common Agricultural Policy (CAP) proposals, he replied, "We would expect a stronger emphasis on environmental sustainability overall, and in that context precision farming will play a key role."

"So, I think that new policies like CAP will go more and more in that direction which is a good thing," he said.

Populism and emotions

Referring to the ongoing debate on restoring confidence with the people, he said there was a sense amongst the general public that innovation and food, it's not necessarily a good thing.

"Particularly when it comes to the food industry, as the products marketed with the 'free from' label showed: there's no real scientific basis but it's appealing because it gives the sense that it's really natural."

Asked by EURACTIV if it is difficult to deal with a public debate led by emotions, rather than scientific findings he said, "It's easier to be a populist with the emotions."

He noted that science required a real understating of complex issues and notions, which makes it, however, difficult to win an argument purely from a scientific point of view. The best is a combination of science and emotion.

Sustainability is viewed as a way to overcome criticism, as "some practices that are being proclaimed as alternatives to use in science and innovation are from a sustainability point of view actually not sustainable."

"Bayer has a huge commitment to raise the bar from a sustainability point of view. Our sustainability targets going to be tracked as rigidly as our financial target," Condon said.

In this context, he explained, the role of smallholders it's going to play an extremely important role. "We are the biggest agricultural company in the world and the vast majority of the farmers are smallholders. The type of solutions that smallholders require are very different than solutions big companies require and we have to give a special attention to their needs."

The dialogue Bayer wants to establish is not only with the public, Condon said, adding that the new company is "in a listening mood also with the customers".

"We're not just telling our customers, this is what we going to do, but we're asking them what they expect from us," he concluded.

Technology and innovation to improve agricultural statistics

OPENGOV ASIA-21-SEP-2018

Technology can address numerous gaps in agricultural statistics. The power of technology can be employed by more innovative methods in order to save on costs. It will deliver the information into the hands of both policymakers and farmers in a timely manner.

Strategically investing in collecting "good data" will help improve the welfare of Asian farmers as agriculture is the main source of income for most of Asia's poor who are living in rural areas.

According to the report released, enhanced agricultural productivity will go a long way toward reducing rural poverty and boosting incomes of small-scale farmers.

In order to achieve this, major investments in new types of data collection are essential.

Administrative reporting systems or surveys, which are the traditional methods of data collection, are costly. Plus, they are prone to measurement errors.

The power of technology can be employed by more innovative methods in order to save on costs. Moreover, it will deliver the information into the hands of both policymakers and farmers in a timely manner.

The Key Indicators for Asia and the Pacific 2018 Special Supplement report by the Asian Development Bank includes new research demonstrating how technological innovations can improve the quality, timeliness, and granularity of agricultural statistics, while reducing overall collection costs.

The outcomes from two methodological studies have revealed the usefulness and practicality of remote sensing technology in land measurement and yield estimation.

The data gathered will form the basis for numerous policies on resource allocation, subsidies, volume of trade, and food prices.

A third study provides agriculture ministries a more reliable sampling frame, which guarantees that no one is left behind, particularly the small-scale farmers who are more likely to be eliminated by outdated population registers or censuses.

The studies were implemented in collaboration with National Statistics Offices and Ministries of Agriculture in three pilot countries namely Lao People's Democratic Republic, Thailand, and Viet Nam.

The first study centres on the use of Google Earth images for plot area measurement through digital tracing, which was compared to the current gold standard for area measurement, the GPS-based plot area measurement.

Inaccurate estimation of land, a key measure of absolute and relative farmer wealth, would lead to inappropriate welfare measures that weaken policies targeting subsistence farmers.

Although results from the GPS-derived estimates were statistically similar to estimates from Google Earth images, the latter costs 38% less.

With conducting an area survey being an expensive process, any means of cost reduction is welcome so that the savings could be reallocated to other policy actions.

The second study develops a method for estimating crop yields from space, based on the idea that satellite data can help create crop growth models and improve yield estimates.

An innovative data fusion technique was employed in Thai Binh province, Viet Nam, to achieve this. Two freely available sources of satellite data were combined to come up with a fused product with enhanced spatial and temporal resolution.

Better data on crop yields can help policymakers identify hot spots of high and low productivity so resources can be targeted to address the gaps.

A third study explores the utility of land-use maps developed from satellite data in constructing an agricultural sampling frame.

Sampling frames are traditionally based on a census, which may be an outdated, incomplete and non-representative method.

The advantage of using a satellite-derived sampling frame is that it eliminates under-coverage stemming from an outdated population-based frame.

Other emerging technological innovations that have potential for agricultural statistics were also mentioned in the report.

First would be the drones, which are capable of collecting much higher resolution images down to the crop level relatively quickly, providing substantially new information to improve crop yield estimation and risk assessment.

Second is the tablet-based data collection that can convert administrative and survey data quality through improved data validation and management.

Third would be artificial intelligence (AI), which will be a game-changer for agricultural statistics.

With AI, different sources of real-time information can be fed into a machine learning algorithm so that real-time data on critical variables may be obtained.

Technology can address numerous gaps in agricultural statistics. The ultimate objective is for both emerging and existing technologies to complement each other to bolster agricultural data quality.

Doing so will facilitate a policy environment that helps farmers increase productivity and wages, which will ultimately contribute to poverty reduction.

GMOs Are Not Agriculture's Future--Biotech Is

SCIENTIFIC AMERICAN (BLOG)-05-SEP-2018

With new gene-editing techniques, the controversial technology will no longer be necessary

As a scientist who has spent his career in agricultural biotech, I've watched with some sympathy as the public struggles to sort out whether to embrace innovation in agriculture or continue a wariness that originated nearly 40 years ago with the introduction of genetically modified crops.

Very recently the agricultural world watched with interest as the European Union's highest court upheld a decade-old policy that hinders innovation in farming. I have listened carefully to the concerns and understand a certain degree of trepidation about introducing new technologies to farming practices that are thousands of years old. But we are out of time to fix a changing climate and shrinking arable land. The world's population is growing by 80 million every year, Europe is dealing with yet another "hottest summer on record" and parts of the U.S. have experienced wildfires daily for two years.

It is clear to me agriculture needs to adapt. The only question is how can we move forward in a way that does not repeat the mistakes of the GMO (genetically modified organism) era? The answer lies in newer technologies that allow us to responsibly develop crops that never integrate non-native elements into a plant. This was the catastrophic mistake of GMO. Today's science is very different and enables us to precisely target and direct a plant's natural gene-editing process. This approach accelerates natural breeding that has been a staple of farming for thousands of years and is already proving to be a rapid, versatile and low-cost way to improve nutrition, increase crop yields and reduce waste.

But to understand how this technology differs from GMO it helps to have some context. One problem is the terminology: genetic modification. In a basic sense all crop breeding since the dawn of agriculture has involved genetic modification of organisms. When the ancient tribes of the Balsas River Valley in south central Mexico first began to try and enhance the yields of teosinte some 10,000 years ago, they didn't know it but they were trying to alter the genetic makeup of this grass. It is only through accumulated changes in genes that teosinte was domesticated to become corn. Whereas changing genes in humans or animals raises ethical concerns, it's important to keep in mind this has been the goal in agriculture since the dawn of civilization.

Through most of history these gene edits were accomplished via trial and error. Plant breeders would find desirable traits in their crops and optimize them over many years through cross-breeding. Scientists cannot improve the amount of material a plant can produce through photosynthesis—that limit is imposed by external factors such as

sunlight, nutrients, water and weather. Breeders, however, can alter a plant's priorities, so to speak—shifting biomass from roots to seeds, for instance. Thus, in the 1950s when Norman Borlaug bred a dwarf wheat with a stalk sturdy enough to support a heavy head of seeds, the green revolution was born, and India was blessed with a way of feeding its exploding population.

By the 1980s, green revolution techniques had spread widely around the developing world, and the agricultural community wondered what innovation could power the next big jump in yields needed to feed the world's ever-growing population. In 1994 agribusiness giant Monsanto offered a partial answer when it introduced Roundup Ready soybeans and corn. Farmers flocked to these crops because they could use them in conjunction with Monsanto's herbicide, which killed weeds that competed with crops for sunlight, water and nutrients. Regulators in many countries, including the U.S., deemed the product safe but the public continued to be concerned because such crops are transgenic, meaning that they have been created by the transfer of genetic material from unrelated living organisms.

Despite 25 years of widespread use, public resistance to such transgenic crops has only grown, and this has limited enthusiasm for the further spread of GMO. This posed a dilemma. Agriculture needed a new engine to boost yields, but the public had no appetite for the further deployment of GMO.

Enter precision gene editing, an entirely new approach to plant breeding that is radically different from what we know as GMO. Forty years ago scientists resorted to inserting foreign genetic material because in the 1970s no one knew how to precisely change particular genes associated with a specific trait. In other words, transgenic technology (GMO) was a kind of stopgap, used in the absence to tools to achieve what plant breeders have always wanted to accomplish: to make a particular change and obtain a particular result.

Since that time the picture has changed dramatically: Geneticists have developed an ever-more sophisticated understanding of the interactions of various genes in plants. Meanwhile molecular biologists have developed various types of genetic scissors to knock out particular parts of DNA and devised other means of effecting tiny changes. And with gene editing, all of these changes occur solely within the genome of a particular plant, meaning no non-native material is integrated.

It's difficult to overstate the importance of this new revolution in plant breeding. It makes the debate over transgenic GMOs moot because, as it was put in Nature, precision gene editing produces changes "indistinguishable" from how genes change in a natural setting. Regulators in the U.S., Canada and a host of other countries in Europe, South America and Asia have studied these tools and certified they are as harmless as traditional plant breeding.

In essence, plant breeding has come full circle. Scientists can now develop new crops the way nature would do it given enough time, but gene editing allows these changes to be made at warp speed. Drought- and disease-resistant crops are now possible, in addition to those that increase yields for farmers as well as taste and nutrition for consumers. What might take thousands of years through the stately pace of evolution can now be achieved in a matter of months. Given the ever-increasing stresses on the global food system, precision gene editing could not have arrived at a more fortuitous time.

Electricity boosts crop yield by 30% while reducing pesticides and ...

NEXT BIG FUTURE-18-SEP-2018

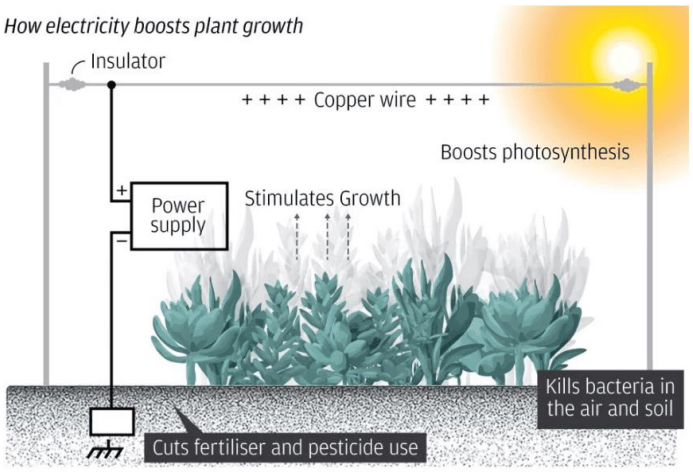
China uses electricity instead of chemical pesticides and fertilizers to boost the growth of vegetables and fruits.

Electricity boosted vegetable output by 20 to 30 percent. Pesticide use has decreased 70 to 100 percent. And fertilizer consumption has dropped more than 20 percent.

One hectare of electrified greenhouse requires about 15 kilowatt-hours of electricity per day, which is about half the power usage of an average American family. In just two years the electrified vegetables had brought in extra revenue of nearly 1.2 million yuan (US$175,000) for one company.

Inside the greenhouse the air smells like the aftermath of a summer thunderstorm. Humidity is low and the plants rarely get sick.

The biggest expense is the installation cost which can be costing tens of thousands of yuan (a few thousand dollars per hectare).



China has been conducting the world's largest experiment and the results are transforming agricultural production in the world's most populous nation with a jolt.

Across the country, from Xinjiang's remote Gobi Desert to the developed coastal areas facing the Pacific Ocean, vegetable greenhouse farms with a combined area of more than 3,600 hectares (8,895 acres) have been taking part in an "electro culture" programme funded by the Chinese government.

The vegetables grow under bare copper wires, set about three metres (10 feet) above ground level and stretching end to end under the greenhouse roof. The wires are capable of generating rapid, positive charges as high as 50,000 volts, or more than 400 times the standard residential voltage in the US.

The high frequency electricity kills bacteria and virus-transmitting diseases in the air or soil. It also suppresses the surface tension of water on leaves, accelerating vaporization.

Within the plants, the transport of naturally charged particles, such as bicarbonate and calcium ions, speed up and metabolic activities, like carbon dioxide absorption and photosynthesis, also increase.

The electric current flowing through the wires is only a few millionths of an ampere by volume – lower than a smartphone cable's workload.

"It does absolutely no harm to the plants or to humans standing nearby," he said.

Thanks to the positive findings of the study, the area devoted to electrified farms in China is now growing with unprecedented speed, according to Liu, from 1,000 to 1,300 hectares each year.

40% growth in electro culture farming could be achieved within the next 12 months.

Recharging soils with carbon could make farms more productive

HORIZON MAGAZINE-24-SEP-2018

Agriculture should be a good example of a circular economy, but modern farming practices and international markets have changed that.

into a material called biochar could help to capture carbon from the atmosphere and store it in the soil while also helping to enrich farmland.

Agriculture has historically been a circular industry where crops use nutrients in the soil to grow which are then replaced through compost or manure. But globalisation and industrialisation of the food supply chain has disrupted this cycle, driving farming practices that have helped degrade a third of the planet's land.

Scientists are now looking at ways of tackling this problem with an approach that will not only restore nutrients to the soil but also help to offset the greenhouse gas emissions produced by agriculture.

'Farm land could work as carbon sinks,' said Dr Jan Mumme, an agricultural engineer at the University of Edinburgh in the UK. 'This probably wouldn't work with intensive livestock farming, but sustainable crop production and integrated farm systems (a balance between crops and livestock) could do it - and biochar is one way to help.'

Biochar is a substance formed of biomass - such as wood and crop waste, sewage sludge and paper waste - that is heated to 400-800°C under limited oxygen conditions to make a charcoal-like product. This can be then added to soil, where it not only stores carbon, but also interacts with microbes in the soils to improve their ability to capture additional nutrients and soil carbon.

Until now, however, biochar has received mixed results when tested for its effects on soils and crop yields.

Paper waste

'There are lots of research papers where the authors investigate the effects of biochar on crop yields and there is high range of positive results, but also dozens of studies that showed a negative result,' said Dr Mumme, who coordinated a research project called

CarboPlex, which has developed a biochar product that could help farms capture more carbon in their soil.

Research by the CarboPlex team found that biochar can have better effects on soils when it was used in another process first. They developed a material called CreChar, which is made from paper waste and combines carbon and mineral nutrients that can be used as additive in biogas production.

Dr Mumme estimates that 60,000 tonnes of CreChar could capture or prevent a total of 619,000 tonnes of CO2 emissions in the UK alone. Image courtesy CheChar

At the end of the biogas process there is a by-product called digestate that, according to CarboPlex, increases in value from CreChar by absorbing more nutrients. This digestate can then be used as an organic fertiliser instead of mineral fertilisers made by fossil fuels.

'With an annual potential in the UK of 900,000 tonnes of this biofertiliser, I think this could save 60,000 tonnes of carbon dioxide emission just by replacing mineral nitrogen fertilisers,' said Dr Mumme.

What's more, Dr Mumme says that another 619,000 tonnes of CO2 emissions could be avoided in the UK alone each year by reusing 180,000 tonnes of paper waste to create CreChar. Not only would this prevent the incineration of paper waste, it would also encourage the use of biogas instead of fossil fuels and enhance the soil's ability to store carbon.

Animal manure

'Agriculture as it should be, or as it was over thousands of years, is the best example of the circular economy,' said Dr Mumme. A large proportion of the food supply chain in Europe, however, now starts in countries or regions that specialise in mass production of single commodities for export. In Brazil and the US, for example, soy farmers grow the feed for livestock farmers in Europe.

'It is highly unlikely that ship loads of manure (will be sent) back to Brazil or the US so the farmers there produce their soy and other crops with artificial fertilisers made using fossil fuels,' said Dr Mumme. Meanwhile, in many European countries slurry from animal manure can pollute the local ground water.

It is this sort of practice that is depleting soils of their carbon capturing potential because organic waste is never returned to the soil it is taken from. Without this organic material the microbial ecosystems underground are unable to break it down and store the carbon it contains in the soil.

But if the agricultural industry could use biochar to help enrich soils for these microbes, it could reduce the environmental impact of the sector, which currently accounts for a fifth of the world's total emissions.

'We have many places in the world where soil carbon is depleting, worsened by climate change,' said Dr Mumme. 'There is no golden solution, but there are some solutions that are more viable.'

It will be a few years before products like CreChar are widely available on industrial scales, but in the meantime farmers can already begin to improve their carbon capturing

potential. This requires better farming practices, such as no ploughing, using rotational crops, composting and managed grazing of livestock on pastures, according to Dr Ashish Malik, a microbial ecologist at the University of California, Irvine in the US.

'Some of these practices are already being implemented, but there is just not enough work on the microbial physiology,' he said.

Soil microorganisms act as gatekeepers to the soil – they control the levels of nutrients that plants need to grow by decomposing dead biological material. This process helps to keep soils resilient, productive and increases the amount of carbon they can capture. Having a better understanding how they do this could help to encourage higher uptake of agriculture practices that support microbial activity and their ability to capture carbon.

Dr Malik was the coordinator of Terra-Micro-Carbo, a recently completed research project that examined soil microbes across different farms, varying from low to high intensive agriculture practice.

The project found in less-intensive farms that had near-neutral levels of pH in the soil there was increased microbial growth and more carbon stored. The story was much more complicated in acidic soils where microbial growth was a bigger constraint on decomposition rates.

Communities

The researchers also analysed soil microbe communities on 56 different farms and grouped their traits into three key areas – growth efficiency, resource acquisition and stress tolerance. These three traits are combined within a microbial community to efficiently regulate soils and maximise carbon capture.

'It is not just important from the agriculture point-of-view, but also the general modelling prospects,' said Dr Malik.

Terra-Micro-Carbo aims to share their findings for use in climate models to help calculate the carbon storage potential of farms. Ultimately, such work could help to direct farmers and policy makers towards decisions that promote more climate-friendly agriculture and so reduce the impact the industry has on the global environment.

The research in this article was funded by the EU. If you liked this article, please consider sharing it on social media.

BIODIVERSITY

KERALA TO STUDY IMPACT ON STATE'S BIODIVERSITY AFTER FLOODS

THE NEW INDIAN EXPRESS-07-SEP-2018

The findings would be taken into consideration while finalising projects for the state's sustainable development, said Chief Minister Pinarayi Vijayan.

TRIVANDRUM: In the wake of the devastating floods that caused major damage to the state's ecology, a comprehensive study would be conducted into the impact of floods on Kerala's biodiversity. The findings would be taken into consideration while finalising projects for the state's sustainable development, said Chief Minister Pinarayi Vijayan.

The study will be carried out by the State Biodiversity Board along with the biodiversity management committees with local bodies. Regional micro-level surveys would be conducted to study the changes in the state's biodiversity and the studies would be completed within a month. A state-level expert panel would monitor the studies and survey.

The state has also decided to entrust hundred experts in the biodiversity sector to lead the studies. The chief minister made clear that all future projects aiming at the state's sustainable development would be planned and executed based on these reports on biodiversity changes.

The state has suffered major ecological loss in the recent floods with hundreds of landslides reported from various parts of the Western Ghats. In the wake of the floods, the National Green Tribunal recently directed the Government to come up with the final notification on the Kasturirangan report on ESAs (Ecologically Sensitive Areas), as per the draft notification.

Agro-biodiversity conservation still remains ignored: Expert

THE HINDU BUSINESSLINE-24-SEP-2018

An expert from Jawaharlal Nehru University (JNU) has said agro-biodiversity conservation approach has not received the attention from the stakeholders concerned in the country.

Speaking at the inauguration of the national workshop on 'Agro-biodiversity conservation for sustainable socio-ecological development' at Mangalore University on Monday, KG Saxena, Professor, School of Environmental Sciences, JNU, New Delhi, said agriculture has remained the focus area for many.

Long-term approach

Following this, agro-biodiversity conservation has not received much attention. The country requires a long-term approach for agro-biodiversity conservation.

He said some regions in the country have unique agro-biodiversity systems. These regions — identified as 'Globally Important Agricultural Heritage Systems' (GIAHS) by the Food and Agriculture Organisation (FAO) of the United Nations (UN) — are rich in agro-biodiversity and indigenous knowledge and culture.

Kuttanad's below sea-level farming system in Kerala and Koraput's traditional agriculture system in Odisha are identified as GIAHS by FAO, he said.

China model

Kuttanad's system is the only one in India that favours rice cultivation below sea level in the land created by draining delta swamps in brackish waters. This system is an approach to cope with the imminent climate impacts in coastal areas and evolve efficient methods to deal with soil and pest-related issues in agriculture.

The traditional farming system of the local communities in Koraput region has helped conserve the rich biodiversity in the region, he said.

Stressing the need for the Centre to go in for China model in re-forestation activities in the country, Saxena aid China had adopted a model to transform agricultural and barren land to forest land in a vast area. The model helped regenerate forest in that country.

China, which had become a food-surplus country, had taken this decision to transform agricultural land in food surplus areas and barren land to agro-forest land.

India, which lacks such policies, can also think of in that direction, he said.

Radical changes in biodiversity witnessed due to climate change

DECCAN CHRONICLE-02-SEP-2018

Whether plants and animals will be able to adjust quickly enough to survive the changing temperature remains uncertain.

Until now, scientists thought species' main reaction to climatic changes was to move. (Photo: ANI)

Nature has been reacting to climate change by altering behaviour and movement. For example, with the winters getting warmer, flowers change their flowering period and owls develop darker body colour. However, whether plants and animals will be able to adjust quickly enough to survive the changing temperature remains uncertain.

The latest research indicated that in the past, plants and animals reacted to environmental changes by adapting, migrating or going extinct. Findings of the paper point to radical changes in biodiversity due to climate change in the future.

Professor David Bravo-Nogues, lead-author of a new study, said, "We compiled an enormous amount of studies of events, which we know influenced biodiversity during the past million years. It turns out, species have been able to survive new conditions in their habitat by changing either their behaviour or body shape. However, the current magnitude and unseen speed of change in nature may push species beyond their ability to adapt".

Until now, scientists thought species' main reaction to climatic changes was to move. However, the new study shows that local adaptation to new conditions seems to have played a key role in the way species survived. Species adapt when the whole population change, for example, when all owls get darker body colour. This happens slowly over a long period of time, the study's co-author, Stephen Jackson, elaborated.

While animals and plants have prevented extinction by adapting or migrating in the past, the models used today to predict future climate change foresee magnitudes and rates of change, which have been exceptionally rare in the last million years.

The study suggested that we need to expand our knowledge and improve our prediction models. There is a need to recognise the limitations of the models because they are used to inform politicians and decision-makers about the effects of climate change on biodiversity.

The findings appeared in the Journal of Trends in Ecology and Evolution

Convention on Biological Diversity: Overcoming Research Impediments

IISD'S SDG KNOWLEDGE HUB (PRESS RELEASE) (BLOG)-24-SEP-2018

Success of the Convention on Biological Diversity (CBD) depends on our understanding of biodiversity. Hence, CBD and the subsequent Nagoya Protocol on Access and Benefit-sharing (NP) urge signatory nations to promote and encourage research on biodiversity. However, imposition of sovereign rights of nations on their biological resources and the emphasis on the CBD third objective of fair and equitable sharing of the benefits arising out of the utilization of genetic resources (GR) through access and benefit-sharing (ABS) are coming in the way of achieving the primary objectives of the CBD relating to conservation of biological diversity and its sustainable use.

In the meantime, examples of financially significant ABS agreements are scarce even after a quarter century of existence of the CBD. A survey of megadiverse countries having functional ABS legislation showed that very few commercial ABS agreements (2.05 per year per country) have been concluded, suggesting a lack of demand for GR by potential users. Instead, the regulations to harness perceived benefits by individual countries have made much needed biodiversity exploration and research difficult and in some cases even impossible. The global research community has been complaining about the challenges they face in accessing and exchanging biological material for research as well as international collaborations that are crucial for the global food security and conservation of biodiversity.

No Substitute for Sharing of Biological Resources

Biological resources being truly renewable, their use promotes further improvement and *ex situ* conservation as in the case of crop plants. Use of any biological resource in a given area does not limit its use elsewhere. However, throughout the negotiations in the run up to the CBD and NP, biological resources were treated akin to non-renewable resources such as oil and coal.

The principles underlying the CBD and NP are laudable, and both underscore that access to GR should also address the issues of equity. However, with the third CBD objective of ABS making a slip, it is becoming evident that the CBD and NP may not be able to address the issues of equity raised by developing countries at the Earth Summit in 1992, which ultimately culminated in nationalization of genetic resources. As governments began to enact national legislation to regulate access to biological resources within their borders for benefit-sharing from the derived products, consequences of such actions on biodiversity research and food security are being overlooked. The principal victim of these legislative actions is biodiversity research that includes inventories and international collaborations as its core. Such restrictions, apart from curtailing research and development, run counter to the objectives of the CBD. Enormous amounts of biological data, including Digital Sequence Information (DSI), are increasingly being published via the database portals of the International Nucleotide Sequence Database Collaboration (INSDC). The unlimited and open access DSI encourages collaboration among researchers besides enabling conservation and sustainable use of biological diversity. As access to DSI is coming to the center stage of negotiations in the forthcoming 14th meeting of the Conference of the Parties (COP 14) to the CBD, the global research community is increasingly concerned about the free flow of information, which is essential for the advancement of science.

New Treaty for Non-profit Research and Development

Not-for-profit research, such as inventories and taxonomic studies, intended for the public domain, should be differentiated from commercial research leading to proprietary rights. On the one hand, access has to be open when the benefits are in the public domain, and the providers of the biological resource are free to make use of the benefits just as anybody else. On the other hand, if the benefits are confined to the private realm through intellectual property rights, the provider may secure a share bilaterally.

The International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), popularly known as the “Seed Treaty,” provides a promising model for international collaboration on biodiversity research. The treaty ensures worldwide public accessibility to GR of essential food and fodder crops. While the CBD and NP necessitate access to GR on a

bilateral basis through case-by-case negotiations, the Seed Treaty adopts a multilateral system for ABS (MLS) through a Standard Material Transfer Agreement, averting the need for bilateral negotiations. The MLS established under the Seed Treaty has been viewed as a very successful model in terms of volume of material exchanged (8,500 transfers every week) in contrast to the very limited performance of the bilateral system of the CBD and NP. Exchange of genetic material under the Seed Treaty is exempted from the NP requirements, and the benefit sharing requirement arises only when access for further research and breeding is restricted through intellectual property rights. One possible course of action for the CBD COP might be to add a legally binding treaty to promote and facilitate biodiversity research, conservation and international collaboration. Such a treaty could address legal uncertainties in the governance of global research commons such as microbial culture collections held by the World Federation of Culture Collections as well as DSI published through the portals of INSDC or taxonomic type materials held in various museums all over the world.

Intrinsically, GR is a public resource – truly renewable, non-rivalrous and non-exclusive – much similar to the knowledge resources. Its dissemination across national boundaries further enriches their diversity, value and conservation. For example, cultivation of a crop variety in a region does not limit its use elsewhere. Thus, it is imperative that GR are retained as common heritage. Man, as a biological species, depends more or less on the same GR for survival, irrespective of the national boundaries. Open access to GR addresses the issues of equity by ensuring access to biological resources for all. This advocates the universal freedom to study, distribute, modify and utilize GR by any one and for any purpose. As in the case of open source software licenses, many forms of free and open access licenses can be conceived for GR too. The open access model offers people the right to freely distribute copies and modified versions of GR with stipulation that the same rights should be preserved in derivative works in the future.

Biodiversity forms the basis of global food and livelihood security, and the nations of the world are linked in a complex web of genetic interdependence that ensures global food security. Countries have gained much more than their individual contributions through the exchange and sharing of a myriad kinds of crops and domestic animals from all over the world. Similarly, international collaboration is inevitable for understanding life on earth, its conservation and sustainable use. The objectives of the CBD are interlinked with the Goals of the 2030 Agenda for Sustainable Development and three SDGs in particular: SDG 2 (zero hunger), SDG 14 (life below water) and SDG 15 (life on land). It is time that the forthcoming CBD COP take stock of the impacts of parochial restrictions on open access and free exchange of biological resources due to the NP and national ABS regimes, and adopt the necessary course correction to help achieve sustainable development for all.

Microsoft AI For Earth Programme Selects 7 Indian Grantees

ANALYTICS INDIA MAGAZINE-04-SEP-2018

Microsoft on Tuesday announced grants to seven recipients from India under their AI for Earth programme. This is their worldwide programme which aims at empowering people and organisations to solve global environmental challenges through the power of artificial intelligence.

According to an official statement sent out by Microsoft, these seven grantees will receive access to Microsoft Azure and AI computing resources, in-depth education and technology training on these tools, and additional support as the projects grow and mature. The programme also aims to accelerate innovation and build sustainable game-changing solutions with AI technologies and cloud computing.

India now has the third-largest concentration of AI for Earth grantees, following the US and Canada.

The AI for Earth programme has chosen the following seven Indian institutes:

India Institute of Technology (for agriculture)

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad (for agriculture)

Ashoka Trust for Research in Ecology and Environment (ATREE), Bengaluru (for biodiversity)

Indraprastha Institute of Information Technology, Delhi (for biodiversity)

Symbiosis Institute of Technology (Smart Meter Data Analytics), Pune (for climate change)

India Institute of Science, Bangalore (for water)

Symbiosis Institute of Technology, Pune (for water)

Commenting on the program, Lucas Joppa, chief environmental officer at Microsoft Corporation and Lead for Microsoft AI for Earth, said, “In every country around the world, we are facing unprecedented environmental challenges, impacting the ability to access water, grow healthy crops and protect biodiversity. At Microsoft, we’ve found that one thing was accelerating as quickly as the degradation of our planet’s natural resources, and that is technology. Through AI for Earth, we’re making sure that innovative environmental researchers, like the seven here in India, are empowered with Microsoft’s AI in the pursuit of creating a more sustainable future for us all.”

In just one year, AI for Earth has grown from 20 grantees to 147 from across more than 40 countries, with $1.1 million of Azure credits awarded to date.

AI for Earth is a $50 million, five-year commitment from Microsoft to put AI at work for the future of the planet. Launched in July 2017, its focus areas are climate change, agriculture, biodiversity and water.

CLIMATE CHANGE

Study: Climate change will bring more pests, crop losses

PRI-23-SEP-2018

Maize weevil A study published in the journal Science found that crop loss to insects is likely to increase with rising global temperatures. Above, a maize weevil munches on an ear of corn. Credit: US Department of Agriculture

A new study finds that global warming will bring with it an increase in agricultural pests, which will lead to significant crop loss across the globe.

Scientists have already raised grave concerns about the effects of climate disruption on global agriculture. Research has shown that rising temperatures can reduce nutrient quality in staple grains, and that droughts and flooding can reduce yields. The recent report adds an additional worry.

The new findings make “intuitive and scientific sense,” based on what scientists already know about insects, says Michelle Tigchelaar, a research associate at the University of Washington and a co-author of the study.

Insects are ectotherms.

“This means that as the global temperature rises, their body temperatures rise, and so they will eat more. Essentially, their energy use goes up,” she says.

And as temperatures rise, more insects will survive through the winter and reproduce at faster rates.

Put those two things together and the result is a larger insect population that will need to eat more to survive.

The unique part of the study, Tigchelaar says, was that it was the first time scientists quantified how big these impacts could be.

“What's surprising about these results is that this is not an insignificant contribution to future crop losses,” she says. “It is not going to be the dominant factor of how climate impacts crops, but it is not insignificant and will definitely aggravate the problem.”

The insect boom will primarily affect the world’s main staple crops — corn, wheat and soy. Wheat will likely see the largest crop losses, Tigchelaar says, because it is grown in temperate climates, where the study predicts the largest rise in numbers of insects will occur.

To put a figure on it: Two degrees of global warming could double the volume of wheat that is currently lost to pests.

“Our projections show that those crop losses could be on the order of several hundred million tons,” Tigchelaar says. “Combined with the other impacts of climate change on food production, these impacts are tremendously important, especially for the more than four billion people on this planet who depend critically on staple crops for their

sustenance. Households that spend the majority of their income on food will be extremely vulnerable to price shifts."

The nations of the world can take some steps to prevent or at least mitigate these crop losses, the most obvious one being to limit climate change, Tigchelaar says. Farmers and farm policy specialists should also look into new pest management strategies, as well as investments in crops that are more resilient against heat and pests.

"Breeding strategies [will be] an important part of any solution to climate change, but they're not going to be able to get us there alone," Tigchelaar says. "Crop scientists have been trying for several decades to breed crops with increased resistance to heat, with little to no avail. That means that farming practices and perhaps what we eat are going to have to change."

The good news from the research is that "a lot of the projected impacts of climate change on agricultural crops are interconnected," Tigchelaar says.

"Solving climate change, solving pest impacts and solving the food crises that we're facing here in the United States might have common solutions around better land management practices and better public health policies," she says. "If this kind of work can galvanize those kind of changes, that would be a really positive impact."

CO2 emissions cost India USD 210 billion every year: Study

ECONOMIC TIMES-25-SEP-2018

Carbon dioxide emissions are costing the Indian economy up to USD 210 billion every year, according to a global study which found that the country is likely to suffer highest economic damage from climate change after the US. Previous research has focused on how rich countries benefit from the fossil fuel economy, while damages accrue primarily to the developing world.

However, researchers from University of California San Diego in the US found that the top three counties with the most to lose from climate change are US, India and Saudi Arabia.
"The economic damages model indicates that as temperature rises, economic growth in India will slow," Katharine Ricke, an assistant professor at UC San Diego, told
.

Researchers estimated country-level contributions to the social cost of carbon (SCC) using recent climate model projections, empirical climate-driven economic damage estimations and socioeconomic forecasts.

The country-level SCC for the India alone is estimated to be about USD 86 per tonne of CO2.
At current emission levels, the Indian economy loses USD 210 billion annually, said Ricke, corresponding author of the study published in the journal Nature Climate Change.

For US, the cost is about USD 50 billion per tonne. This means that the nearly five billion metric tonnes of CO2 the US emits each year is costing the US economy about USD 250 billion.
The model accounts for everything that happens in the economy today that is sensitive to environmental conditions, said Ricke.

"This includes agricultural yields, vector borne disease, reduced worker productivity due to heat, increased frequency of extreme precipitation resulting in infrastructure damages or any of the other many ways that human systems get impacted by climate conditions," Ricke added.

"The combination and interaction of all these factors translate into an observed effect on the country's economy as a whole," she said.

For the first time, researchers have developed a data set quantifying what the social cost of carbon will be for the globe's nearly 200 countries.
The world's largest CO2 emitter, China, also places in the top five countries with the highest losses.

"We all know carbon dioxide released from burning fossil fuels affects people and ecosystems around the world, today and in the future," said Ricke.
"However these impacts are not included in market prices, creating an environmental externality whereby consumers of fossil fuel energy do not pay for and are unaware of the true costs of their consumption," said Ricke.

For example, claims that carbon dioxide causes relatively little harm to the economy can more easily justify rollbacks on environmental regulation.
"Because this is a macroeconomic model based on empirical observations, this means that everything that happens in the economy today that is sensitive to environmental conditions is reflected in the model," she said.

"This can be agricultural yields, vector borne disease, reduced worker productivity due to heat, increased frequency of extreme precipitation resulting in infrastructure damages or any of the other many ways that human systems get impacted by climate conditions," Ricke added.

ORGANIC FARMING

'Eco-friendly farming most environmentally damaging'

FG INSIGHT-22-SEP-2018

New research has shown intensive agriculture which uses less land may also produce fewer pollutants, cause less soil loss and consume less water.

These were the findings of a major study led by the University of Cambridge, which looked at four agricultural sectors.

The researchers said agriculture which appeared to be more eco-friendly but used more land may actually have greater environmental costs per unit of food than 'high-yield' farming.

This type of farming was also leaving 'ever less space' for wildlife, they added.

In European organic dairy farming, for example, organic systems producing the same amount of milk as conventional caused at least one third more soil loss and took up twice as much land.

Conservation expert and co-author of the study David Edwards from the University of Sheffield said: "Organic systems are often considered to be far more environmentally friendly than conventional farming, but our work suggested the opposite.

"By using more land to produce the same yield, organic may ultimately accrue larger environmental costs."

The report said there was 'mounting evidence' to suggest the best way to meet rising food demand while conserving biodiversity was to wring as much food as sustainably possible from the land already farmed – something previously criticised because of claims it boosted disproportionate levels of pollution, water scarcity and soil erosion.

The university's studies found high-yield systems in Poland, Brazil, Australia, Mexico and Columbia to be less ecologically damaging.

The researchers analysed information from hundreds of investigations into four food sectors, accounting for large percentages of the global output for each product: Asian paddy rice (90 per cent), European wheat (33 per cent), Latin American beef (23 per cent), and European dairy (53 per cent).

The scientists said more research was 'urgently needed' on the environmental cost of different farming systems.

Study lead author Andrew Balmford, Professor of conservation science from Cambridge's department of zoology, said: "Our results suggest that high-yield farming could be harnessed to meet the growing demand for food without destroying more of the natural world.

"However, if we are to avert mass extinction it is vital that land-efficient agriculture is linked to more wilderness being spared the plough."

Kenya could learn from an Indian state's experience with organic ...

DAILY NATION 03-SEP-2018

Kenya could learn from an Indian state's experience with organic farming and health

I recently read an article by Annie Gowen in the Washington Post titled "An Indian state banned pesticides. Tourism and wildlife flourished. Will others follow?" and it got me thinking.

In the place of chemical fertilisers, farmers were encouraged to develop compositing pits for making organic compost. The state introduced organic farming as a subject in the school curriculum, and ensured compulsory training on organic farming and its advantages as part of capacity building among the general public.

Fifteen years down the road, the health of the population has improved, soil has recovered from pesticide pollution, and the state has improved alternative revenue sources with the growth of ecotourism and farm tourism.

It is obvious that in Kenya our polluted rivers and infertile soils are the result of chemical pollutants but it has never occurred to policymakers that we have made very expensive choices over simple solutions as in the state of Sikkim.

We can achieve both food security and universal healthcare simply by going back to the basics, eliminating chemicals, making our own compost and constantly conducting research to understand our role in destroying our environment.

I recently read an article by Annie Gowen in the Washington Post titled "An Indian state banned pesticides. Tourism and wildlife flourished. Will others follow?" and it got me thinking.

But what really caught my eye was one paragraph:

But with the indiscriminate use of pesticides came a spike in cancer rates in industrial farming areas. Rivers became polluted and soil infertile. Sikkim's leaders say they were driven to go all-organic by those concerns and because pesticide residue — including from some chemicals banned in other countries — was tainting fish, vegetables and rice.

The paragraph helps untangle what has been a puzzle in Kenya for several years now after the phenomenal increase in cancer cases.

It is obvious that our polluted rivers and infertile soils are the result of chemical pollutants but it has never occurred to policymakers that we have made very expensive choices over simple solutions as in the state of Sikkim.

This tiny Indian state, Gowen writes, launched a radical experiment: Its leaders decided to phase out pesticides on every farm in the state, a move without precedent in India — and probably the world.

Today they are reaping the benefits of the bold decisions they made fifteen years ago.

ALTERNATIVE FOR CHEMICAL FERTILISER

At the introduction of these radical changes, residents did not even know what organic farming was all about. The state started a programme educating the citizens on the benefits of organic farming.

They created an organic certification board that set standards and ensured that farmers complied with those standards.

The board also handled all policy issues as a strategic plan, stopping procurement of chemical fertilisers and pesticides, and eliminating existing subsidies to farmers for procurement of chemical pesticides and fertilisers.

To ensure there was total compliance, they criminalised the use of chemical pesticides and fertilisers in the state.

In the place of chemical fertilisers, farmers were encouraged to develop compositing pits for making organic compost. The state introduced organic farming as a subject in the school curriculum, and ensured compulsory training on organic farming and its advantages as part of capacity building among the general public.

Fifteen years down the road, the health of the population has improved, soil has recovered from pesticide pollution, and the state has improved alternative revenue sources with the growth of ecotourism and farm tourism.

The wildlife and dwindling bee populations have recovered and as a result, the country's yield of large cardamom — dependent upon cross-pollination from bees — has increased more than 23 percent since 2014.

MODI IMPRESSED

The national government has noted this remarkable progress. As Gowan notes, Indian Prime Minister Narendra Modi's government has embraced Sikkim and organic farming throughout India, pouring about $119 million into supporting organic farmers nationwide.

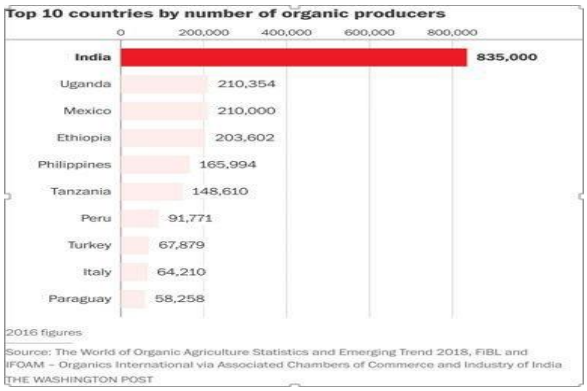
India is betting that Sikkim can be the global model for other jurisdictions around the world that want to go all organic.

This is a case where the cost of healthcare has been minimised through health foods while at the same time ensuring food security.

As Kenya embarks on the Big Four agenda, we must ask ourselves many questions. Do we want to achieve the targets but lose many lives to the growing cases of cancer? Is it necessary to continue subsidising fertiliser when we can make compost that will rejuvenate the soils and increase productivity?

In my view, we can very easily achieve what Sikkim people have achieved if only we could get the right kind of leadership in at least one of the counties, the better to lead the way. Other counties would certainly follow the example of success, as the current fascination with the success of Makueni County reveals.

The good thing is that the growing middle class will form the backbone of the demand for organic foods. Although Kenya is not known to be an organic foods destination (see chart below), it has a significant market to sustain initial demand for such foods.



Kenya does not feature among the top ten countries by number of organic food producers but this an area where our farmers can compete given the use of readily available resources.

As in Sikkim, education is key to the development of human resource capacity to successfully develop a sustainable organic foods production.

Linking excessive use of chemicals to the incidence of cancer is important because we have had previous studies pointing to environmental factors as major causes of cancer in Kenya.

The risk Kenya faces is that there is very little research that traces the impact of polluting chemicals.

For example, we don't know the damage polluted rivers cause downstream, especially with animals. Early last year, reports emerged that the waters of the Subukia river had turned red. Chemicals from the flower farms upstream were suspected to have sipped into the river.

The recent deaths of rhinos in the Tsavo have not been explained thus far. It was said that they died of drinking saline water but no conclusive tests were conducted.

A WAKE-UP CALL

The damage from pollution therefore has not been properly assessed but from the experiment in Sikkim, we can conclude that chemical pollutants may be costing the country a future.

The Sikkim experiment is a wake-up call to assess our actions, painfully review our practices and collectively work towards our shared good.

It takes great leadership to convince people to abandon an established way of doing things and to collectively think of a common future as happened in Sikkim.

Our false refuge in democratic processes could be our Achilles heel in trying to achieve the common good in health and food security.

Former UN Secretary-General Ban Ki-moon once said, "Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment. Solutions to one problem must be solutions for all."

We can achieve both food security and universal healthcare simply by going back to the basics, eliminating chemicals, making our own compost and constantly conducting research to understand our role in destroying our environment.

Conventional Farms Are Better for Environment than Organic Farms

AMERICAN COUNCIL ON SCIENCE AND HEALTH-23-SEP-2018

According to legend, organic farms are the way Mother Nature meant for us to live.

Every community has a small Mom and Pop farm. You know the food is safe because you buy it directly from Mom and Pop at the weekend farmer's market. The fruits and vegetables -- which are so much tastier than that garbage at Safeway! -- are grown without pesticides and picked by hand. They have a chicken named Colin. On top of all that, because everything is locally grown, Mom and Pop's farm is better for the environment.

Science says that's all nonsense. Organic food isn't tastier or healthier than conventional food. And no matter what Mom and Pop say, organic farms use pesticides. Lots of them. And now, a new study in Nature Sustainability says that gigantic,

high-yield "corporate" farms are better for the environment than Mom and Pop's organic one.

The study essentially confirms what ought to be common sense: It is better for the environment if we farm as efficiently as possible. That way, we can use less land for farming and conserve the rest for biodiversity.

Conventional Farms Beat Organic Farms

When it comes to crop yields, organic farms are about 20% less efficient than conventional farms. The classic retort is that is the cost of having an environmentally friendly farm. But this new study, which had three major findings, shows that's not true.

First, the researchers discovered that useful data on the environmental impact of farming was hard to find. The reason is because most studies did not bother to examine yields. If Farm A pollutes 10% more than Farm B, but produces twice as much food as Farm B, then Farm A is clearly better. Most previous studies simply ignored that.

Second, contrary to popular opinion, high-yield farms were better for the environment in multiple ways. A statement by the University of Cambridge summarizes this point succinctly: "[M]ore intensive agriculture that uses less land may also produce fewer pollutants, cause less soil loss and consume less water."

Finally, some high-yield farming practices ought to change. For example, the authors point to the environmental cost of using ammonium nitrate that is derived from fossil fuels. Also, the authors stress that for high-yield farming to have a net positive impact on the environment, the world cannot continue converting wilderness into farmland. Habitat destruction, usually due to agriculture, is the greatest threat to biodiversity.

The bottom line is clear: Organic farms produce fewer crops and are worse for the environment. Don't build more of them.

Diversified Farming

BUSINESS TODAY-05-SEP-2018

Sabarmatee has changed the face of rural odisha with organic farming.

The Mahabharata happened due to envy, says eminent Odia environmentalist Radhamohan to this writer at his home in Odisha. "Awards and recognition are a burden. It turns friends into enemies," he says. It is with such upbringing that Sabarmatee got from her father that she has been working for the last 28 years to develop a forest using organic farming, without any promotion.

It started as an experiment in 1988, when Sabarmatee, her father and other likeminded people wanted to rejuvenate barren land using organic farming. They zeroed in on wasteland in the interiors of Nayagarh district (earlier Puri). People from surrounding villages came, and one elderly person said: "You from cities don't understand farming. It's impossible to grow anything here." The land was eroded, and the soil gravelly.

"We accepted the challenge and stayed committed to the cause. We call our journey Sambhav, from the impossible to the possible," says Sabarmatee. What started on one acre of wasteland is now a sprawling 90-acre forest with three rainwater harvesting ponds, over 1,000 species of plants and 493 varieties of rice. Fondly called Tiki apa (Tiki means small and apa means elder sister), the irony of her name is evident when one juxtaposes her work and the humility with which she refers to herself as a volunteer at Sambhav.

There were two aims - to practise organic farming to rejuvenate the land and work on gender issues in agriculture. She explains the ethos of organic farming is soil and water care and biodiversity, which means growing several species of one plant. The aim was to bring back indigenous foods that were vanishing from plates. It has larger environmental benefits - plant diversity replenishes soil nutrients that other crops withdraw reducing the need for fertiliser. Also, in case of a natural calamity such as a pest attack or a drought, if certain species get destroyed, others might survive. So, it is extremely important from food preservation and food safety perspective. Sambhav has been successfully growing many vanishing food crops such as clove bean, jack bean, black rice, sword bean amongst others.

Several studies have shown women put in more manual labour than men in agriculture, but are considered unskilled and paid less. Using traditional means, women spend 1,000-1,500 hours to grow one hectare of rice. "They are perpetually in pain and often get bent backs," says Sabarmatee. From her research in Odisha villages, she found that by using System of Rice Intensification (SRI) technology they are able to work in healthier conditions. An agriculture scientist by training, Sabarmatee found that this method allowed women to be in upright position, and reduced the hours required, reducing drudgery and pain giving them more time to rest.

The biggest hurdle was that in 1990s not much research was happening in organic farming. "So, we were learning ourselves and it took us years to come up and promote best practices," Sabarmatee says.

Sambhav is now a resource centre where farmers visit to exchange seeds and learn about organic farming. "Whenever people come, we request them to bring indigenous seeds so they can take something in exchange," she says. They also have an "adopt a seed" initiative. If people adopt 1,000 different seeds, 1,000 different varieties get conserved. The biggest achievement is that through Sambhav "we have disproved the popular belief that indigenous varieties and organic farming reduce production.

ICAR IN PRINT

Hormone Traps Help Goa Farmers Beat Pests

THE WEATHER CHANNEL-13-SEP-2018

Pest attacks and fruit flies can destroy pulp, making it foul-smelling and discoloured, besides leaving toxic residue on fruits. Pest infestation can also severely cut farmers' profits, but the extensive usage of chemical fertilisers and pesticides to tackle this, has led to soil degradation, water contamination and loss of biological diversity.

Now, ICAR-Central Coastal Agricultural Research Institute (CCARI) scientists have developed low-cost eco-friendly pheromone traps that hang on fruit trees and can be used to repel insects.

"The pheromone trap is a sex hormone trap that attracts insects. This way, the insect population is controlled, and farmers need not spray any chemicals on fruits or vegetables to keep pests away," ICAR-CCARI director, E B Chakurkar said. He explained that a female insect attracts a male insect of its own species by secreting a chemical called pheromone. The male can sense the odour and reach the female even from a distance.

The trap is made with an artificial methyl eugenol lure which mimics the smell of the pheromone of female files. When placed in the field, male insects are attracted to the lure and trapped. In a bid to popularise this technology among farmers, the institute along with NABARD recently conducted a training session for farmers in Farmagudi and Priol among other areas and distributed the traps free of cost.

Farmers attend kisan mela

THE TRIBUNE-16-SEP-2018

Rakhra Kisan Mela organised by the Punjab Young Farmers Association at ICAR- Indian Agricultural Research Institute Collaborative Outstation Research Centre in Rakhra village here attracted a large number of farmers from all over the state and neighbouring Haryana and Rajasthan on Saturday.

Inaugurating the mela, Agriculture Secretary Kahan Singh Pannu said to control stubble burning the government had made super straw management system (SMS) mandatory with self-propelled combine harvesters. He told the farmers that the system would check air pollution and they would not be required to put paddy straw on fire under this system of harvesting.

PSPCL Chairman Baldev Singh Sran said water crisis in Punjab was becoming serious as water in dams had gone down. The association also announced unique programme of promoting qualified sons of farmers to settle them in the farming profession by offering them incentives. — TNS

Tripura farmers alarmed at Blast disease of Aman Rice production: ICAR

UNITED NEWS OF INDIA-15-SEP-2018

Udaipur, Sep 15 (UNI) The farmers of Tripura alarmed at Blast disease of Aman Rice production and a good numbers of farmers will get loss due to that disease if the farmers unable to aware about the it, said ICAR.

In a release, the ICAR, Tripura centre informed that the cloudy and humid weather is conducive for the attack of blast. Eye shaped spot with a gray or white center and brown or reddish brown border may be seen on the surface of the leaves and the bottom of the panicle may turn to black and break down in later stage. Infections just below the panicle, usually at the neck node, cause a "neck rot" or "rotten neck blast" symptom that can be very injurious to the crop.

If neck rot occurs early, the entire panicle may die prematurely, leaving it white and completely blank. Later infections may cause incomplete grain filling and poor milling quality. Other parts of the panicle including panicle branches and glumes may also be infected. Panicle lesions are usually brown, but may also be black, the release said.

The scientists of ICAR advised to farmers about blast disease may be managed with continuous flooding. For chemical control of the disease apply Tricyclazole 75 WP at 0.6 gm/l of water or Carbendazim 50 WP (Bavistin) at 1 gm per liter of water. Apply Urea at 5kg per kani as top dressing.

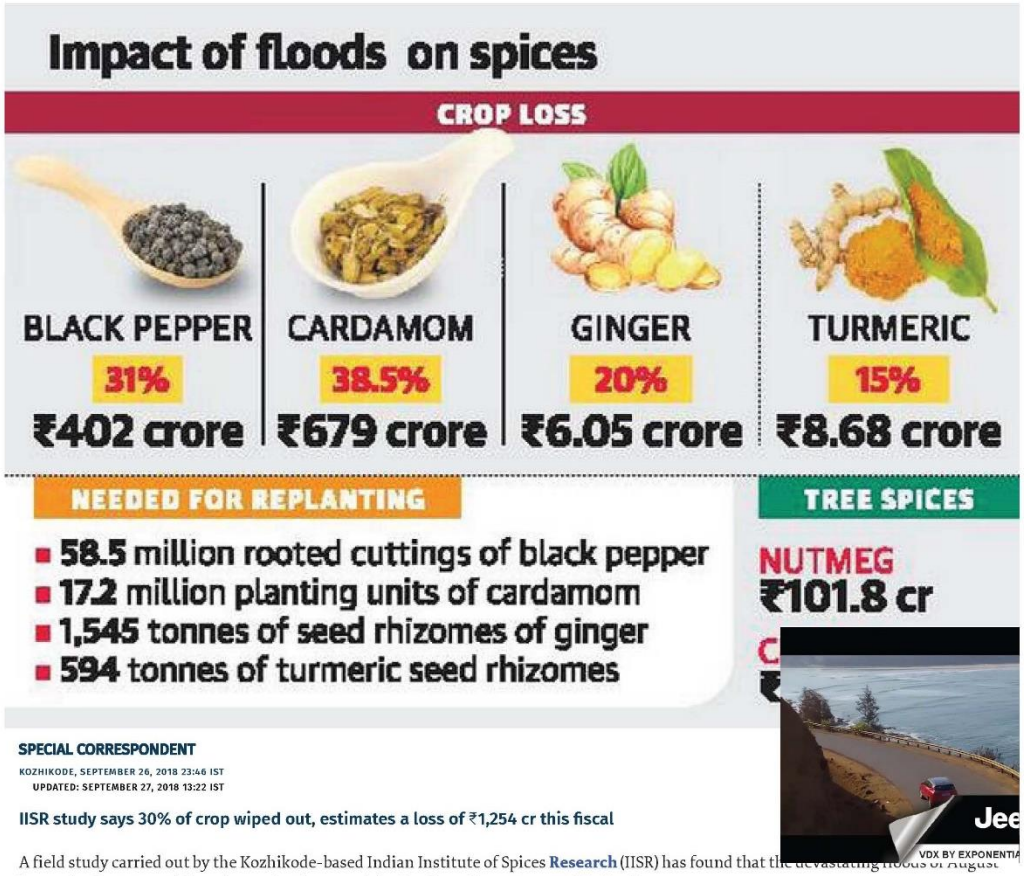
According to agricultural scientist, blast disease can attack at all stages of growth of rice, even in rice seeds have started to infected blast disease, whereas to attack blast disease attacking phase of seeding until the phase of the harvest, because its growth is very fast then and you may never find a case when rice stay enter the flowering phase sudden attacked by severe disease or attacked by blast diseases which causes the of rice grains are not filled.

According to report of State agriculture department, economy of Tripura is basically agrarian and characterized by high rate of poverty and more than 42 per cent of its population now directly depends on agriculture and allied activities. On the other hand, net area available for agriculture is about 27 per cent, which is far below the national level of 43.40 per cent.

Tripura is primarily an agrarian economy. More than 42 per cent of population of the state now directly depends on agriculture and allied activities and its contribution to the GSDP is about 27 per cent in 2014-15. Small and marginal farmers constitute about 96 per cent of the total farmers in the state against 78 per cent that of country. Agriculture and allied activities are still the backbone of the State's economy.

KERALA

Flood disaster takes its toll on the land of spices



SPECIAL CORRESPONDENT

KOZHIKODE, SEPTEMBER 26, 2018 23:46 IST
UPDATED: SEPTEMBER 27, 2018 13:22 IST

IISR study says 30% of crop wiped out, estimates a loss of ₹1,254 cr this fiscal

A field study carried out by the Kozhikode-based Indian Institute of Spices Research (IISR) has found that the devastating floods of August have wiped out 30% of the spice production, resulting in a loss of ₹1,254 crore this fiscal.

Idukki and Wayanad, which together account for 60% of the spice cultivation, suffered major losses.

The major crops considered in the study were black pepper, cardamom, nutmeg, ginger, turmeric, and clove that contributed 90% of the total spice crops in Kerala, K. Nirmal Babu, director, IISR, and Santhosh J. Eapen, Head (Crop Production), told press persons here on September 26.

Kerala cultivates 1,62,660 hectares of spices crops with an annual production of 1,40,000 tonnes.

The survey was undertaken with the support of the Department of Agriculture and other agencies in 60 villages across 27 community development blocks in seven districts.

Black pepper, the backbone of the spices industry, witnessed a production loss of 10,700 tonnes, resulting in a loss of ₹402 crore.

The rainfall destroyed 26,614 hectares of black pepper cultivation.

The monsoon havoc made a huge dent in the production of cardamom by 6,600 tonnes, causing a loss of ₹679 crore.

In the perennial tree spices, Dr. Babu said the loss was pegged at 2,749 tonnes of nutmeg, valued at ₹101.8 crore and 13 tonnes of clove, estimated at ₹0.93 crore.

Dr. Babu pointed out that the loss would escalate to ₹3,9012 crore if the variable and fixed costs inputs, the cost of re-establishing the crop and the long gestation period to attain full bearing, were taken into account.

Remedial measures

Regarding remedial measures, he said the focus should be on protecting the existing plants and launching a large-scale replanting programme with high-yielding varieties.

The cost for preparing the planting materials alone was estimated to be ₹194 crore and other planting inputs such as fertilizers, micro-nutrients, and bio-agents would cost another ₹182 crore.

Printed from
THE TIMES OF INDIA

Kerala's spices sector takes a Rs 1254 crore hit due to floods

TNN | Sep 26, 2018, 09.53 PM IST

KOZHIKODE: The recent floods have made a big dent in the spices economy of the state with the total production loss estimated to be around Rs 1254 crore, according to a field study conducted by Kozhikode-based Indian Institute of Spices Research (IISR).

According to the report which has been submitted to the ICAR, black pepper is estimated to see a production loss of 10,700 tonnes in the year 2018-19 causing a loss of Rs 402 crore. The crop loss in pepper has been estimated at 31 % with 26614 hectares affected in the monsoon havoc.

The production of cardamom is estimated to dip by 6600 tonnes causing a loss of Rs 679 crores with a crop loss of around 38.5 %.

The perennial tree spice of nutmeg, for which the state accounts for over 90 percent of the country's total output, has also been badly hit with estimated production loss of 2749 tonnes causing loss of Rs 101 crore.

IISR say that the total long term loss in the spices sector would climb to Rs 3901 crore, if the cost of re- establishing the crop and the long gestation period to attain full bearing is taken into account.

K Nirmal Babu, director, IISR, said at a press conference here on Wednesday that the damage has been most severe in the districts of Idukki and Wayanad which accounts for 62 percent of the total area under spices in the state.

The survey also found that unprecedented rain induced natural calamity has also caused spike in Phytophthora infection in black pepper, cardamom and nutmeg samples and Pythium in cardamom and ginger apart from increased attacks by shot hole borers belonging to Xylosandrus species in nutmeg.

"The efforts for revival of the spices sector should focus on protecting the existing plants and launching a large scale replanting programme with high yielding plant varieties. The cost for making the planting material alone is estimated to be Rs 194 crore and other planting inputs like fertilizers, micronutrients and bioagents would cost another Rs 182 crore," Nirmal Babu said.

As per IISR estimates around 58.5 million rooted cuttings of black pepper, 17.2 million planting units in cardamom, 1545 tonnes of seed rhizomes of ginger, 594 tonnes of turmeric seed rhizome etc are required for the replanting.

The report was made after conducting a survey covering seven most affected districts and 60 panchayats. The major crops covered in the study were black pepper, cardamom, nutmeg, ginger, turmeric and clove which contribute more than 90 percent of the total spice crops cultivated in the state.

The report has also called for flood zoning of the entire agriculture area in the state, implementing village level crop- weather forewarning systems and interest free credit support for sustenance of livelihood activity.

Santhosh J Eapen, head, Crop Protection at IISR and Lijo Thomas, Scientist (Agricultural Economics) were present at the press conference.

GENERAL

Aphids use sight to avoid deadly bacteria, could lead to pest control

CORNELL CHRONICLE-27-SEP-2018

Pea aphids spread plant pathogens to crops, leading to major economic losses.

Pea aphids – a serious agricultural pest – have the ability to see and avoid a common, aphid-killing bacteria on plant leaves, according to a new Cornell study published Sept. 27 in Current Biology.

Pea aphids lack immune-response genes, making them highly susceptible to infection. In the lab, pea aphids that became infected with virulent strains of the bacteria all died. They make up for their immune deficiency by reproducing in large numbers but can still die from bacterial infection at a high rate.

It turns out, the bacteria (Pseudomonas syringae), and all members of the genus Pseudomonas, contain compounds called pyoverdine, which bind iron, but also fluoresce in ultraviolet (UV) light – wavelengths that exist in sunlight. Furthermore, pea aphids can distinguish the unique blue-green light that virulent strains of P. syringae emit.

The findings have implications for pest control. For example, organic farmers could spread pyoverdine or virulent P. syringae on leaves to deter pea aphids, though more study is needed to test the effectiveness of these strategies.

“Aphids are vectors of plant diseases – they transfer viral diseases – and that’s one of their major economic impacts,” said Tory Hendry, assistant professor of microbiology and one of the paper’s lead authors. “Preventing aphids from settling on plants to begin with could have a big impact on viral transmission.”

While studying the effects of bacteria on aphids, Hendry and her colleagues noticed aphids would rarely eat an artificial sap with virulent P. syringae mixed in. More tests revealed the aphids, when given food choices, consistently avoided feeding when virulent P. syringae was in the food.

Using fava bean leaves, which have two leaflets separated by stems, the researchers painted one leaflet with a solution mixed with bacteria and the other without bacteria, as a control. They tested different strains of bacteria, some benign, others virulent.

When pea aphids were released at the base of the plants, they preferred the control leaves and avoided the leaves with some bacterial strains. “It was correlated with virulence; they avoided the more virulent strains and not the lesser strains,” Hendry said.

Previous studies of aphids had shown that they exhibited color preferences, and prior research showed the bacterial species in the genus Pseudomonas fluoresce. “That got me

thinking that maybe vision is important, we could take assays and actually do them in the dark," Hendry said.

The team conducted similar tests under UV light-blocking plastic, and the aphids fed normally on all the leaves, including those with deadly bacteria. In another experiment, the researchers used a mutant form of virulent P. syringae that doesn't make the fluorescent compound, pyoverdine. The pea aphids ate from the bacteria-laden leaves, and died. More experiments, using different designs to test whether aphids avoided the fluorescing deadly bacteria, all consistently showed the same result.

Co-lead author Russell Ligon, a postdoctoral researcher at the Cornell Lab of Ornithology, who studies sensory ecology and visual modeling, took leaves with P. syringae bacteria on them and measured light that reflected off them to figure out what colors they emitted. His investigations revealed the virulent bacterial strains that pea aphids avoided were more blue than other more benign strains, within ranges aphids should see based on their blue, green and UV optical cones.

"The colors aphids are best at detecting actually match up perfectly with the color of fluorescence that the [virulent] bacteria produce," Hendry said. "It's pretty crazy that something can see bacteria in general. Aphids aren't thought of as being visually acute; they don't seem that bright. This is something they are very attuned to."

Future research will explore if bacteria or pyoverdine by itself deter aphids from settling on plants. They also plan to study the evolution of this trait by looking at different aphid species and how they interact with virulent P. syringae. Co-authors include Rachel Fay, a former student in Hendry's lab through the Microbial Friends and Foes Research Experiences for Undergraduates program through the Plant Pathology and Plant-Microbe Biology, while she was an undergraduate at State University of New York at Potsdam; Kevin Besler, a former lab technologist in Hendry's lab; and Melanie Smee, a postdoctoral research associate.

Science and innovation for agriculture

BLACKBURNNEWS.COM-21-SEP-2018

The federal government in investing $70 million over five years to hire scientists and science professionals in emerging fields of agriculture.

Minister Lawerence MacAulay made the announcement today near Harrow in southwestern Ontario.

$44 million of the amount will be used to not only hire scientists but also equip them with state-of-the-art tools to advance agricultural research including environmental sampling equipment and analytical instruments.

Part of the goal is to continue to provide the tools farmers need to better manage their farms, while growing their businesses.

There is also money earmarked for a new Living Laboratories Initiative, including $10 million to support collaborative research projects with external partners. Living Laboratories are an integrated approach to agricultural research that bring farmers, scientists and other stakeholders together to co-develop, test and monitor new practices and technologies on farms.

This $70 million investment in research and development fulfills the Budget 2017 commitment to support discovery science and innovation.

LAB-GROWN CLEAN MEAT COULD PREVENT GLOBAL FOOD CRISIS, SAYS REPORT

LIVEKINDLY-SEPTEMBER 3, 2018

We would need five planets if the rest of the world ate as much meat as the US. 86 percent of nations are currently living beyond their means. Humanity is using natural resources 1.7 times faster than what the planet can regenerate in a year. This is the news we are faced with at an increasing, and more urgent, rate. But there is hope. According to the Adam Smith Institute, a leading think tank, slaughter-free, lab-grown meat could prevent a global food crisis.

"The UK should recognise that cultured meats are a game-changer," Dr. Madsen Pirie of the Adam Smith Institute told The Sun.

Slaughter-free meat, also known as "clean meat," "cultured meat," and "lab-grown meat," is meat grown from real animal cells through a process known as cellular agriculture. It eliminates the need to breed, raise, and slaughter animals for food en-masse, thus reducing the heavy environmental impact of factory farming. According to the institute, lab-grown meat requires 99 percent less land than industrial animal agriculture. This further supports findings released last July which indicated that a global shift away from reliance on animal agriculture could feed the planet.

"For 12,000 years humans have reared animals for meat. In the future, they will not need to," Pirie continued. "This will release millions of acres of pasture land for other uses. It will resolve all of the ethical issues involved in the rearing and slaughter of animals."

The report also uncovered that clean meat could curb other worldwide crises, such as global warming, by potentially reducing up to 96 percent of agricultural greenhouse gas emissions. The issue of antibiotic-resistant bacteria found in the majority of factory farm-produced meats could also be reduced, as cultured meats require no antibiotic use. Some speculate that with more land freed up, the current housing crisis in the UK could be resolved.

While the prospect of animal products grown in a lab may seem futuristic, clean meat has seen enormous progress in recent years. According to Josh Tetrick, CEO and founder of the California-based food tech company JUST, the brand's lab-grown meat may be available on the market by the end of the year.

Even meat industry professionals can sense that consumer preferences may change as slaughter-free meat becomes more readily available. In September 2017, China, the

world's largest consumer of pork, invested $300 million into lab-meat. Major US meat producer, Tyson Foods, is also seeing the potential of clean meat with investments in Israeli startup Future Meat Technologies Ltd. and San Francisco-based cultured meat brand, Memphis Meats.

MALAYALAM NEWS

പ്രളയക്കെടുതി

കൃഷി പുനരുജ്ജീവിപ്പിക്കാൻ ശാസ്ത്രജ്ഞർ മുന്നിട്ടിറങ്ങുന്നു

എം ജിഷിന

കോഴിക്കോട്

കാർഷിക മേഖലയിൽ പ്രളയമുണ്ടാക്കിയ പ്രത്യാഘാതങ്ങൾ പഠിച്ച് പരിഹാര നിർദേശത്തിനായി ശാസ്ത്രജ്ഞർ മുന്നിട്ടിറങ്ങുന്നു. ഇന്ത്യൻ കൗൺസിൽ ഓഫ് അഗ്രികൾച്ചറൽ റിസർച്ച് (ഐസിഎആർ) ആണ് പ്രളയ പ്രത്യാഘാതവും അതിജീവന മാർഗങ്ങളും പഠിച്ച് റിപ്പോർട്ട് തയ്യാറാക്കാൻ ശാസ്ത്ര വിദഗ്ധർ ഉൾപ്പെടുന്ന സമിതി രൂപീകരിച്ചത്. ഹോർട്ടികൾച്ചറൽ സയൻസ് ഡെപ്യൂട്ടി ഡയറക്ടർ ജനറൽ ഡോ. എ കെ സിങ് അധ്യക്ഷനായ സമിതിയുടെ പ്രവർത്തനങ്ങൾ തിങ്കളാഴ്ച മുതൽ തുടങ്ങും. നാച്ചുറൽ റിസോഴ്സസ് അസി. ഡയറക്ടർ ജനറൽ, എഡിജി പ്ലാന്റ് പത്തോളജി, ഐസിഎആറിന്റെ കീഴിൽ കേരളത്തിലുള്ള സ്ഥാപനങ്ങളുടെ ഡയറക്ടർമാർ, കാർഷിക സർവകലാശാല റിസർച്ച് ഡയറക്ടർ എന്നിവർ അംഗങ്ങളാണ്.

കൃഷിയിലും കൃഷി അനുബന്ധ മേഖലയിലും പ്രളയം എത്രമാത്രം ബാധിച്ചു എന്നതാണ് പഠനത്തിന്റെ കാതൽ. കർഷകർക്കുണ്ടായ നഷ്ടം, പ്രളയശേഷം വിളകൾ നേരിടുന്ന അസുഖം, മണ്ണിന്റെ മാറ്റം, കൃഷി പുനരുജ്ജീവിപ്പിക്കുന്നതിന് കൈക്കൊള്ളേണ്ട നടപടികൾ എന്നിവ ഉൾപ്പെടുത്തിയാണ് ഗവേഷണം നടത്തുന്നത്. പ്രശ്ന പരിഹാരത്തിന് കേന്ദ്രം കൈക്കൊള്ളേണ്ട നടപടികൾ സംബന്ധിച്ച് സമിതി റിപ്പോർട്ടിൽ ശുപാർശ ചെയ്യും.

കൃഷിയ്ക്കുപുറമെ ഫിഷറീസ്, ഉഗ സംരക്ഷണം എന്നീ മേഖലകൾ നേരിടുന്ന പ്രതിസന്ധിയും പഠനവിധേയമാക്കും. ഇന്ത്യൻ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് സ്പൈസസ് റിസർച്ച് (ഐഐഎസ്ആർ), സിടിസിആർഐ (സെൻട്രൽ ട്യൂബർ ക്രോപ്സ് റിസർച്ച് ഇൻസ്റ്റിറ്റ്യൂട്ട്), സിഎംഎഫ്ആർഐ (സെൻട്രൽ മറൈൻ ഫിഷറീസ് റിസർച്ച് ഇൻസ്റ്റിറ്റ്യൂട്ട്), സിഐഎഫ്ടി (സെൻട്രൽ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് ഫിഷറീസ് ടെക്നോളജി), സിപിസിആർഐ (സെൻട്രൽ പ്ലാന്റേഷൻ ക്രോപ്സ് റിസർച്ച് ഇൻസ്റ്റിറ്റ്യൂട്ട്, കാർഷിക സർവകലാശാല എന്നിവയുടെ കൂട്ടായ്മയിലാണ് പഠനം. ഓരോ സ്ഥാപനവും അതത് മേഖലയിൽ നിന്നുള്ള വിവരങ്ങൾ ശേഖരിച്ച് റിപ്പോർട്ട് തയ്യാറാക്കി ഉടൻ സമർപ്പിക്കണമെന്നാണ് നിർദേശിച്ചതെന്ന് ഇന്ത്യൻ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് സ്പൈസസ് റിസർച്ച് ഡയറക്ടർ ഡോ. കെ നിർമൽ ബാബു പറഞ്ഞു.

ഓരോ സ്ഥാപനവും ബന്ധപ്പെട്ട മേഖലയിലെ പ്രശ്നങ്ങൾ പഠിക്കാൻ പ്രത്യേക സംഘത്തെ നിയോഗിച്ചു കഴിഞ്ഞു. കൃഷി വകുപ്പിന്റെ സഹകരണത്തിൽ ഓരോ വിഭാഗവും പ്രളയ ബാധിത മേഖലകളിലെത്തി സാമ്പിളെടുക്കൽ ഉൾപ്പെടെ വിവര ശേഖരണം നടത്തും.

പിന്നീട് അത് വിലയിരുത്തി വ്യത്യസ്ത റിപ്പോർട്ടുകൾ സമിതി മെമ്പർ സെക്രട്ടറി വിളിക്കുന്ന യോഗത്തിൽ സമർപ്പിക്കും. സംസ്ഥാനത്ത് സുഗന്ധവിളകളിലുണ്ടായ പ്രത്യാഘാതത്തെക്കുറിച്ച് പഠിക്കാൻ ഐഐഎസ്ആറിൽ പ്രത്യേക സംഘത്തെ നിയോഗിച്ചിട്ടുണ്ട്. നാല് മുതൽ ആറ് വരെ അംഗങ്ങളുള്ള അഞ്ച് ടീമുകൾ തിങ്കളാഴ്ച മുതൽ ദുരിത ബാധിത മേഖലകളിലെത്തി വിളകളിലുണ്ടായ മാറ്റങ്ങൾ, രോഗം, നഷ്ടം തുടങ്ങിയ വിവരങ്ങൾ ശേഖരിക്കും.

കൃഷിയിലും കൃഷി അനുബന്ധ മേഖലയിലും പ്രളയം എത്രമാത്രം ബാധിച്ചു എന്നതാണ് പഠനത്തിന്റെ കാതൽ. കർഷകർക്കുണ്ടായ നഷ്ടം, പ്രളയശേഷം വിളകൾ നേരിടുന്ന അസുഖം, മണ്ണിന്റെ മാറ്റം, കൃഷി പുനരുജ്ജീവിപ്പിക്കുന്നതിന് കൈക്കൊള്ളേണ്ട നടപടികൾ എന്നിവ ഉൾപ്പെടുത്തിയാണ് ഗവേഷണം നടത്തുന്നത്.

Mathrubhumi 17/9/18

പ്രളയം: കൃഷിനാശം വിലയിരുത്തി വിദഗ്ധസംഘം

പേരാമ്പ്ര ▸ വെള്ളപ്പൊക്കത്തിലുണ്ടായ കൃഷിനാശത്തെയും തുടർന്നുണ്ടായ രോഗകീടബാധയും വിലയിരുത്താൻ പെരുവണ്ണാമൂഴി കൃഷിവിജ്ഞാന കേന്ദ്രത്തിലെ വിദഗ്ധർ ജില്ലയിലെ വിവിധയിടങ്ങളിൽ സന്ദർശിച്ചു. വേളം, ചക്കിട്ടപാറ, മരുതോങ്കര, കാവിലുമ്പാറ, നടുവണ്ണൂർ, ഉള്ള്യേരി, ഉണ്ണികുളം എന്നീ പഞ്ചായത്തുകളിലാണ് സന്ദർശനം നടത്തിയത്. കെടുതിയുടെ വിശദമായ റിപ്പോർട്ട് ഭാരതീയ കാർഷികഗവേഷണ കൗൺസിലിന് സമർപ്പിക്കും.

വേളം പഞ്ചായത്തിലെ ഒരുമ കാർഷികഗ്രൂപ്പിന്റെ വിളനാശം സംഘം നേരിൽക്കണ്ടു. പച്ചക്കറിക്കൃഷിക്ക് ദേശീയ, ജില്ലാ തലത്തിൽ പുരസ്കാരം ലഭിച്ച ഈ വനിതാസംഘത്തിന് ലക്ഷങ്ങളുടെ നഷ്ടം പ്രളയത്തിലുണ്ടായി. രണ്ടായിരത്തോളം വാഴകൾ, അഞ്ചേക്കർ ഭൂമിയിലെ നെൽക്കൃഷി, മൂന്നേക്കർ സ്ഥലത്തെ കരനെല്ല്, രണ്ടരയേക്കർ മരച്ചീനി, കുരുമുളക്, എന്നിവയെല്ലാം നശിച്ചിരുന്നു. നെൽപ്പാടങ്ങളിൽ ആഴ്ന്നിറങ്ങിയ മണൽ അടിഞ്ഞുകൂടി. ഇത് നെൽക്കൃഷിയിറക്കാൻ പറ്റാത്ത അവസ്ഥയാണുണ്ടാക്കിയത്.

പെരുവയലിലെ അമ്പുമ്പത്തെ നിയോഗിച്ചു കഴിഞ്ഞു. കൃഷി വകുപ്പിന്റെ സഹകരണത്തിൽ ഓരോ വിഭാഗവും പ്രളയ ബാധിത മേഖലകളിലെത്തി സാമ്പിളെടുക്കൽ ഉൾപ്പെടെ വിവര ശേഖരണം നടത്തും.

പിന്നീട് അത് വിലയിരുത്തി വ്യത്യസ്ത റിപ്പോർട്ടുകൾ സമിതി മെമ്പർ സെക്രട്ടറി വിളിക്കുന്ന യോഗത്തിൽ സമർപ്പിക്കും. സംസ്ഥാനത്ത് സുഗന്ധവിളകളിലുണ്ടായ പ്രത്യാഘാതത്തെക്കുറിച്ച് പഠിക്കാൻ ഐഐഎസ്ആറിൽ പ്രത്യേക സംഘത്തെ നിയോഗിച്ചിട്ടുണ്ട്. നാല് മുതൽ ആറ് വരെ അംഗങ്ങളുള്ള അഞ്ച് ടീമുകൾ തിങ്കളാഴ്ച മുതൽ ദുരിത ബാധിത മേഖലകളിലെത്തി വിളകളിലുണ്ടായ മാറ്റങ്ങൾ, രോഗം, നഷ്ടം തുടങ്ങിയ വിവരങ്ങൾ ശേഖരിക്കും.

പ്രളയത്തിൽ കൃഷിനാശമുണ്ടായ സ്ഥലങ്ങൾ പെരുവണ്ണാമൂഴി കൃഷിവിജ്ഞാനകേന്ദ്രത്തിലെ വിദഗ്ധർ സന്ദർശിക്കുന്നു

ലത്തിഫിന്റെ സമ്മിശ്ര കൃഷിയിടവും സംഘം സന്ദർശിച്ചു. ഫാമിൽ വൃക്ഷത്തൈകളും, പാലുൽപന്നങ്ങളും, വിത്തുതേങ്ങ, ആട്, കോഴി, പശു ഇവയുടെ തീറ്റകളും എന്നിവ നശിച്ചു. വെള്ളപ്പൊക്കത്തിൽ അറുന്നൂറോളം കരിങ്കോഴികളും ഭക്ഷ്യ, അലങ്കാര മത്സ്യങ്ങളും എന്നിവയും ചത്തൊടുങ്ങി.

കൃഷിവിജ്ഞാനകേന്ദ്രം പ്രോഗ്രാം കോ-ഓർഡിനേറ്റർ ഡോ. പി. രാധാകൃഷ്ണൻ, സബ്ജക്ട് മാറ്റർ സ്പെഷ്യലിസ്റ്റുകളായ ഡോ. പി.എസ്. മനോജ്, ഡോ. എസ്. ഷണ്മുഖവേൽ, ഡോ. ബി. പ്രദീപ്, ഡോ. കെ.കെ. ഐശ്വര്യ, കൃഷി ഓഫീസർ സായിറാം ഹരിദാസ് എന്നിവരാണ് സംഘത്തിലുണ്ടായിരുന്നത്.

ശുചിത്വ ഭാരത മിഷൻ ദ്വൈവാര പരിപാടിയുടെ ഭാഗമായി ഭാരതീയ സുഗന്ധവിള ഗവേഷണ സ്ഥാപനത്തിന്റെ നേതൃത്വത്തിൽ ചെലവൂർ ടൗണിൽ നടത്തിയ ബോധവത്കരണ ജാഥ

ശുചിത്വ ബോധവത്കരണ ജാഥ നടത്തി

ചെലവൂർ: ശുചിത്വ ഭാരത മിഷൻ ദ്വൈവാര പരിപാടിയുടെ ഭാഗമായി ഭാരതീയ സുഗന്ധവിള ഗവേഷണ സ്ഥാപനത്തിന്റെ നേതൃത്വത്തിൽ ചെലവൂർ ഗവൺമെന്റ് എൽപി സ്കൂളിന്റെ സഹകരണത്തോടെ ശുചിത്വ ഭാരത ബോധവത്കരണ ജാഥ നടത്തി.

സ്കൂൾ പരിസരത്ത് നിന്ന് ആരംഭിച്ച ജാഥ ചെലവൂർ ടൗണിൽ സമാപിച്ചു. വിദ്യാർഥികളും അധ്യാപകരും പിടിഎ പ്രതിനിധികളും രക്ഷകർത്താക്കളും ഭാരതീയ സുഗന്ധവിള ഗവേഷണ സ്ഥാപനത്തിലെ പ്രതിനിധികളും ജാഥയിൽ പങ്കെടുത്തു.

ഹെഡ്മാസ്റ്റർ അബ്ദുൾ കരീം അധ്യക്ഷത വഹിച്ചു. ബോധവത്കരണ ക്ളാസിൽ ഭാരതീയ സുഗന്ധവിള ഗവേഷണ സ്ഥാപനം ശാസ്ത്രജ്ഞ ഡോ.സി.കെ. തങ്കമണി മുഖ്യപ്രഭാഷണം നടത്തി.

സ്കൂളിലെ ഹരിത ക്ലബിലെ അംഗങ്ങൾക്ക് ഭാരതീയ സുഗന്ധവിള സ്ഥാപനം ഉത്പാദിപ്പിച്ച കുറ്റികുരുമുളക് തൈകൾ വിതരണം ചെയ്തു.

ഡോ.അഭിരാമി, ഡോ.അനൂപ് ക്ലാസെടുത്തു. എ.കെ. രാഹുൽ, ഡോ.ബിജു, പിടിഎ പ്രസിഡന്റ് സിദ്ദിഖ് വെള്ളയോടി എന്നിവർ പ്രസംഗിച്ചു.

കൃഷിയിടങ്ങളിൽ വിദഗ്ധ പരിശോധന

ഉളിക്കൽ● പ്രളയത്തിൽ സുഗന്ധവിളകൾ നശിച്ച കൃഷിയിടങ്ങൾ വിദഗ്ധസംഘം പരിശോധിച്ചു. ഇന്ത്യൻ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് സ്പൈസസ് റിസർച് സെന്ററിലെ ശാസ്ത്രജ്ഞരായ ഡോ. ഇ.ജയശ്രീ, ഡോ. സി.കെ.തങ്കമണി എന്നിവരുടെ നേതൃത്വത്തിലുള്ള സംഘമാണ് പരിശോധന നടത്തിയത്.

കൃഷി ഉദ്യോഗസ്ഥരായ വി.രാജീവ്, കെ.പി.അശോക് കുമാർ എന്നിവരും ഒപ്പം ഉണ്ടായിരുന്നു.

ഇഞ്ചി, മഞ്ഞൾ, കുരുമുളക്, ജാതിക്ക തുടങ്ങിയ വിളകളുടെ വിളനാശം പരിശോധിച്ചു. കാലാങ്കി, കോളിത്തട്ട്, അറബി, മട്ടണി തുടങ്ങിയ സ്ഥലങ്ങളിലെ കർഷകരുമായി സംസാരിച്ചു.

നൂറ് ഏക്കറോളം സുഗന്ധവിളകളാണ് ഇവിടെ നശിച്ചത്. ഇരിട്ടി സിഎംഐ സ്കൂൾ കുട്ടികൾ സമാഹരിച്ച ഒരു ലക്ഷം രൂപ കൈമാറി. ഇരിട്ടി ഡപ്യൂട്ടി തഹസിൽദാർ ശശിധരൻ കളത്തിലിനു പ്രിൻസിപ്പൽ ഫാ.ജോർജ് പുഞ്ചയിൽ, അധ്യാപകൻ എം.രമേശൻ, ലീഡർമാരായ ഫാത്തിമ മിന്ന, നഖുൽ എസ്.സുധൻ, അലന ജോസഫൈൻ, അഭിയ മറിയ ജോയി, അഗസ്റ്റിൻ ജെയ്സൻ എന്നിവർ ചേർന്നു കൈമാറി.

കൂടാളി● പഞ്ചായത്ത് ഭരണസമിതി അംഗങ്ങൾ ഒരു മാസത്തെ വേതനം മുഖ്യമന്ത്രിയുടെ ദുരിതാശ്വാസ നിധിയിലേക്ക് നൽകും. പ്രസിഡന്റ് പി.പി.നൗഫൽ ഒരു മാസത്തെ വേതനം മന്ത്രി ഇ.പി.ജയരാജനു കൈമാറി.

കൃഷി നാശം;വിദഗ്ദ സംഘം പയ്യാവൂർ സന്ദർശിച്ചു

പയ്യാവൂർ: സുഗന്ധവിളകൃഷിക്കുണ്ടായ നാശവും രോഗബാധയും വിലയിരുത്താനായി കേന്ദ്ര സുഗന്ധവിള ഗവേഷണ സംഘം പയ്യാവൂർ പഞ്ചായത്തിൽ സന്ദർശനം നടത്തി.പ്രകൃതിക്ഷോഭവും മഴയുടെ സംഗം അവതരിപ്പിക്കും ആധികൃവും മൂലം നാശമുണ്ടായ സ്ഥലങ്ങളിലാണ് കോഴിക്കോട് സുഗന്ധവിള ഗ വേഷണ കേന്ദ്രത്തിലെ വിദഗ്ദർ പരിശോധന നടത്തിയത്. കുരുമുളക് ,ജാതി, ഇഞ്ചി, മഞ്ഞൾ തുടങ്ങിയ വയുടെ പ്രശ്നങ്ങളാണ് പരിശോധിച്ചത്.കീട രോഗബാധ , മണ്ണിലുണ്ടായ മാറ്റങ്ങൾ, ചെടികൾക്കുണ്ടായ കേടുപാടുകൾ തുടങ്ങിയവ ചോദിച്ചറിഞ്ഞ സംഘം സ്ഥലത്തെ മണ്ണ് സാമ്പിളുകൾ പരിശോധിയ്ക്കെടുക്കുകയും മാർഗ്ഗ നിർദ്ദേശങ്ങൾ നൽകു കയും ചെയ്തു. ഗവേഷണ കേന്ദ്രത്തിലെ ഡോ. തങ്കമണി, ഡോ.ജയശീ എ ന്നിവ രോടൊപ്പം പയ്യാവൂർകൃഷി ഓ ഫീ സർബിജു ജോസഫ റുംഉണ്ടായിരുന്നു.

പ്രളയക്കെടുതി: കൃഷിനാശം വിലയിരുത്താൻ കേന്ദ്രസംഘം

മാള • പ്രളയത്തെ തുടർന്നുണ്ടായ കൃഷിനാശം വിലയിരുത്താൻ കേന്ദ്രസംഘം മാളയിലെത്തി. ഇന്ത്യൻ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഓഫ് സ്പൈസസ് റിസർച്ച് വിഭാഗത്തിലെ ഒരു സംഘം ശാസ്ത്രജ്ഞരാണു പ്രദേശത്തെ കൃഷിയിടങ്ങൾ സന്ദർശിച്ചത്. പ്രളയബാധിത പ്രദേശങ്ങളിൽ സർവേ നടത്തി ഇന്ത്യൻ കൗൺസിൽ ഓഫ് അഗ്രികൾച്ചറൽ റിസർച്ചിന് (ഐസിഎആർ) റിപ്പോർട്ട് സമർപ്പിക്കും.

ഐസിഎആറിനു കീഴിൽ വിവിധ സംഘങ്ങൾ രൂപീകരിച്ചാണു റിപ്പോർട്ട് തയാറാക്കുന്നത്. പ്രളയത്തിനുശേഷം വിളകൾ നേരിടുന്ന അസുഖങ്ങൾ, മണ്ണിനു സംഭവിച്ചിട്ടുള്ള മാറ്റങ്ങൾ എന്നിവയാണു പരിശോധിക്കുന്നത്.

തൃശൂരിൽ മഞ്ഞൾ, ജാതി കൃഷികളാണു കൂടുതൽ നശിച്ചിട്ടുള്ളത്.

ചാലക്കുടി, മാള മേഖലകളിൽ ജാതികൃഷി വ്യാപകമായി നശിച്ചിട്ടുണ്ടെന്നു സംഘം പറഞ്ഞു. കുഴൂർ പഞ്ചായത്തിലും ഡോ. രമയുടെ നേതൃത്വത്തിലുള്ള സംഘം സന്ദർശനം നടത്തി.

സുഗന്ധവിളകൾ ഉണങ്ങി നശിക്കുന്നു; വിദഗ്ധസംഘം പരിശോധന നടത്തി

സുഗന്ധവിളകളെ ബാധിച്ച രോഗം തിരിച്ചറിയാൻ കോഴിക്കോട് ഭാരതീയ സുഗന്ധവിള ഗവേഷണ കേന്ദ്രത്തിലെ വിദഗ്ധർ പരിശോധന നടത്തുന്നു

പേരാമ്പ്ര ▸ മലയോരമേഖലയിൽ സുഗന്ധവിളകൾ ഉണക്കംബാധിച്ച് വ്യാപകമായി നശിക്കാൻ ഇടയായ കാരണങ്ങൾ കണ്ടെത്താൻ കോഴിക്കോട് ഭാരതീയ സുഗന്ധവിള ഗവേഷണ കേന്ദ്രത്തിലെ വിദഗ്ധർ ചക്കിട്ടപാറ ഗ്രാമപ്പഞ്ചായത്തിലെ പൂഴിത്തോട് മേഖലയിൽ പരിശോധന നടത്തി. സയൻറിസ്റ്റുകളായ സുശീലാഭായി, ശാരദാംബ എന്നിവരുടെ നേതൃത്വത്തിലായിരുന്നു പരിശോധന.

കൃഷിനാശം സംഭവിച്ച തോട്ടങ്ങളിൽനിന്ന് ഉണങ്ങിനശിച്ച വിളകളുടെ വേര്, മണ്ണ് എന്നിവ പരിശോധനയ്ക്കായി ശേഖരിച്ചിട്ടുണ്ട്. പേരാമ്പ്ര കൃഷി അസി. ഡയറക്ടർ എ. പുഷ്പ, കൃഷി ഓഫീസർ ജിജോ ജോസഫ് തുടങ്ങിയവരും ഒപ്പമുണ്ടായിരുന്നു.

പ്രളയത്തെ തുടർന്നുള്ള കൃഷിനാശവും രോഗ കീടബാധയും വിലയിരുത്തുന്നതിനായി എത്തിയ പെരുവണ്ണാമൂഴി കൃഷി വിജ്ഞാന കേന്ദ്രത്തിലെ വിദഗ്ധർ വേളം ഒരുമ വനിത കാർഷിക ഗ്രൂപ്പിന്റെ മഞ്ഞൾ കൃഷി പരിശോധിക്കുന്നു.

പ്രളയത്തെ തുടർന്നുള്ള കൃഷിനാശം: വിദഗ്ധർ സ്ഥലം സന്ദർശിച്ചു

പേരാമ്പ്ര • പ്രളയത്തെ തുടർന്നുള്ള കൃഷിനാശവും രോഗകീടബാധയും വിലയിരുത്തുന്നതിനായി പെരുവണ്ണാമൂഴി കൃഷി വിജ്ഞാന കേന്ദ്രത്തിലെ വിദഗ്ധർ വേളം, ചക്കിട്ടപാറ, മരുതോങ്കര, കാവിലുംപാറ, നടുവണ്ണൂർ, ഉള്ളിയേരി, ഉണ്ണികുളം പഞ്ചായത്തിലെ വിവിധ കൃഷിയിടങ്ങൾ സന്ദർശിച്ചു. പ്രളയത്തെ തുടർന്ന് 15 ലക്ഷത്തോളം രൂപയുടെ കൃഷിനാശമുണ്ടായ വേളത്തെ ഒരുമ വനിത കാർഷിക ഗ്രൂപ്പിന്റെ കൃഷിയിടത്തിലായിരുന്നു ആദ്യ സന്ദർശനം.

രണ്ടായിരത്തോളം വാഴകൾ, 5 ഏക്കർ നെൽകൃഷി, 3 ഏക്കർ കരനെല്ല്, രണ്ടര ഏക്കർ മഞ്ഞൾ എന്നിവ പൂർണമായും നശിച്ചിട്ടുണ്ടിവിടെ. പെരുവയലിലെ സമ്മിശ്ര കൃഷിഫാമും സംഘം സന്ദർശിച്ചു.

അബ്ദുൽ ലത്തീഫിന്റെ ഉടമസ്ഥതയിലുള്ള ഫാമിൽ ഫലവൃക്ഷത്തൈകൾ, പാൽ ഉൽപന്നങ്ങൾ, വിത്തുതേങ്ങ, ആട്, കോഴി പശു എന്നിവയുടെ തീറ്റകൾ, 600 കരിങ്കോഴികൾ, അലങ്കാര മത്സ്യങ്ങൾ എന്നിവയും നശിച്ചതായി സംഘം അറിയിച്ചു.

കൃഷി വിജ്ഞാന കേന്ദ്രം പ്രോഗ്രാം കോ ഓർഡിനേറ്റർ ഡോ. പി. രാധാകൃഷ്ണൻ, ഡോ. പി.എസ്. മനോജ്, ഡോ. എസ്. ഷണ്മുഖവേൽ, ഡോ. ബി. പ്രദീപ്, ഡോ. കെ.കെ. ഐശ്വര്യ, കൃഷി ഓഫിസർ സായിറാം ഹരിദാസ് എന്നിവരാണ് പരിശോധന നടത്തിയത്.

മഴക്കെടുതിയെത്തുടർന്ന് സുഗന്ധ വിളകളിൽ വ്യാപക രോഗം

മനോരമ SEPTEMBER 14, 2018

ചക്കിട്ടപാറ• മലയോരത്ത് മഴക്കെടുതിയെത്തുടർന്ന് സുഗന്ധ വിളകളിൽ വ്യാപക രോഗം പിടിപെടുന്നത് കർഷകർക്ക് ഇരുട്ടടിയാകുന്നു. ജാതി,കുരുമുളക്,ഗ്രാമ്പു എന്നിവയുൾപ്പെടെയുള്ള വിളകളാണ് ഉണങ്ങി നശിക്കുന്നത്. രോഗങ്ങൾ പടരുന്ന പൂഴിത്തോട് മേഖല കൃഷി വകുപ്പിന്റെ ഉന്നത ഉദ്യോഗസ്ഥർ സന്ദർശിച്ചു. കൃഷി നശിച്ച പ്രദേശങ്ങളിൽ നിന്നും വേര്,മണ്ണ് എന്നിവ വിദഗ്ധ പരിശോധനക്കായി ശേഖരിച്ചു. വണ്ട് തുരക്കുന്ന മരങ്ങളുടെ ചുവട്ടിൽ ഇമിഡാക്ലോപ്രിഡ് ഒരു മില്ലി,ഒരു ലിറ്റർ വെള്ളത്തിൽ കലക്കി ചുവട്ടിൽ ഒഴിക്കണം.

കാലവർഷക്കെടുതിയിൽ കൃഷി നാശമുണ്ടായ പ്രദേശവും ഉദ്യോഗസ്ഥർ സന്ദർശിച്ചു. കോഴിക്കോട് ഭാരതീയ സുഗന്ധവിള ഗവേഷണ കേന്ദ്രം ശാസ്ത്രജ്ഞരായ സുശീലാഭായ്, ശാരദാംബ, പേരാമ്പ്ര കൃഷി അസി.ഡയറക്ടർ എ.പുഷ്പ, ചക്കിട്ടപാറ കൃഷി ഓഫിസർ ജിജോ ജോസഫ്, ആത്മ ഫീൽഡ് ഉദ്യോഗസ്ഥരായ കെ.അജാസ്, എൻ.ഷൈജ എന്നിവരാണ് സംഘത്തിലുണ്ടായിരുന്നത്.

ഇടുക്കിയിൽ വിദഗ്ധ സംഘം പരിശോധന ആരംഭിച്ചു

പ്രളയക്കെടുതിയുടെ പശ്ചാത്തലത്തിൽ ഇടുക്കി ജില്ലയിലെ കാർഷിക മേഖലകളിൽ വിദഗ്ധ സംഘം പരിശോധന ആരംഭിച്ചു. കാർഷിക വിളകൾക്കുണ്ടായ വ്യതിയാനവും ഭൂമിയിലുണ്ടായ ഘടനാ വ്യത്യാസവുമാണ് 30 അംഗ സംഘം വിലയിരുത്തുന്നത്.

കേരളാ കർഷിക സർവ്വകലാശാല , ഭാരതീയ സുഗന്ധവിള ഗവേഷണ കേന്ദ്രം, ഇന്ത്യൻ കാർഡമം റിസർച്ച് ഇൻസ്റ്റിറ്റൂട്ട് മൈലാംടുംപാറ, ഇന്ത്യൻ അഗ്രികൾച്ചറൽ സ്റ്റാറ്റസ്റ്റിക്സ് റിസേർച്ച് ഇൻസ്റ്റിറ്റ്യൂട്ട് കോഴിക്കോട്, എന്നിവടങ്ങളിൽ നിന്നുള്ള ശാസ്ത്രജ്ഞരും, ഉദ്യോഗസ്ഥരും അടങ്ങുന്ന സംഘമാണ് ജില്ലയിൽ സന്ദർശനം നടത്തുന്നത്.

മുപ്പതു പേരടങ്ങുന്ന സംഘം 3 ഗ്രൂപ്പുകളായി തിരിഞ്ഞ് കട്ടപ്പന നഗരസഭാ പരിധിയിലുള്ള ഇരട്ടയാർ, വെള്ളയാംകുടി, കട്ടപ്പന തുടങ്ങിയ സ്ഥലങ്ങളിൽ വിവിധ കൃഷിയിടങ്ങളിൽ സന്ദർശനം നടത്തുകയും, ഘടനാവ്യത്യാസം ഉള്ള കൃഷിയിടങ്ങളിലെ മണ്ണ്, ജലം, കൃഷിവിളകളുടെ സാമ്പിളുകൾ ശേഖരിക്കുകയും ചെയ്തു. സന്ദർശനത്തിന്റെ ഭാഗമായി കട്ടപ്പന മുൻസിപ്പൽ ചെയർമാനും, കൗൺസിലർമാരുമായി ചർച്ച നടത്തി.

മഴക്കെടുതിയുടെ പശ്ചാത്തലത്തിൽ പ്രകൃതിയിലുണ്ടായ വ്യതിയാനങ്ങളെക്കുറിച്ചും കാർഷിക വിളകൾക്കുണ്ടായ രോഗബാധയും ജനിതകമാറ്റങ്ങൾ എന്നിവ പരിശോധിക്കുകയും ചെയ്തു. ഏലം മേഖലയിലും, കുരുമുളക് മേലലയിലും ഉണ്ടായ നഷ്ടങ്ങൾ കണക്കിലെടുത്ത് കർഷകർക്കായി അടിയന്തിര ധനസഹായം നൽകണമെന്ന് നഗരസഭ ആവശ്യപ്പെട്ടു.
കേരള കാർഷിക വകുപ്പിലെ രണ്ട് ഡെപ്യൂട്ടി ഡയറക്ടർമാരാണ് സന്ദർശനങ്ങൾക്ക് നേതൃത്വം നൽകുന്നത്. ഇരട്ടയാർ, കാമാക്ഷി, വത്തിക്കുടി മരിയാപുരം, വണ്ടൻമേട്, ചക്കുപള്ളം, കുമളി തുടങ്ങിയ സ്ഥലങ്ങൾ സംഘം അടുത്ത രണ്ടു ദിവസങ്ങളിൽ സന്ദർശനം നടത്തും

Agriculture

പ്രളയത്തിൽ കുരുമുളക് കൃഷിയുടെ അടിത്തറയിളകി; 40 ശതമാനം നഷ്ടം

വിയറ്റ്നാമിൽനിന്നുള്ള ഇറക്കുമതിയാണ് കുരുമുളക് വില ഇടിയാൻ കാരണമെന്ന് വ്യാപാരികൾ ചൂണ്ടിക്കാട്ടുന്നു

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കൊച്ചി: പ്രളയം കേരളത്തിലെ കുരുമുളക് കൃഷിയുടെ അടിത്തറയാണ് ഇളക്കിയത്. പ്രളയത്തെ തുടർന്ന് സംസ്ഥാനത്തെ 40 ശതമാനം കുരുമുളക് കൃഷിയാണ് നശിച്ചതെന്ന് സർക്കാർ ഏജൻസികൾ റിപ്പോർട്ട് ചെയ്യുന്നു.

കഴിഞ്ഞ ദിവസം കൊച്ചിയിൽ ചേർന്ന പെപ്പർ ടാസ്ക് ഫോഴ്സ് യോഗത്തിലാണ് വിവിധ സർക്കാർ ഏജൻസികൾ ഇതു സംബന്ധിച്ച റിപ്പോർട്ട് സമർപ്പിച്ചത്. വയനാട്ടിലാണ് ഏറ്റവും വലിയ നാശമുണ്ടായത്. വയനാട്ടിൽ 90 ശതമാനത്തിൽ കൂടുതൽ നാശമുണ്ടായതായി സർക്കാർ ഏജൻസികൾ റിപ്പോർട്ട് ചെയ്തു. ഇടുക്കിയിൽ ഏതാണ്ട് 30 ശതമാനം നാശമാണുണ്ടായത്. കർണാടകത്തിൽ കുടക്, സഖ്‌ലേഷ്പുർ, ഹസ്സൻ, ചിക്മംഗളൂർ എന്നിവിടങ്ങളിലായി 40 ശതമാനം കൃഷിനാശമുണ്ടായി.

രണ്ടാഴ്ചയ്ക്കിടയിൽ കിലോഗ്രാമിന് 17 രൂപയാണ് കുറഞ്ഞത്. അൺഗാർബിൾഡ് ക്വിന്റലിന് 37,400 രൂപയും ഗാർബിൾഡിന് 39,400 രൂപയുമാണ് വ്യാഴാഴ്ചത്തെ വില.

വിയറ്റ്നാമിൽനിന്നുള്ള ഇറക്കുമതിയാണ് കുരുമുളക് വില ഇടിയാൻ കാരണമെന്ന് വ്യാപാരികൾ ചൂണ്ടിക്കാട്ടുന്നു. ജനുവരി മുതൽ ജൂലായ് വരെയുള്ള കാലയളവിൽ വിയറ്റ്നാമിൽനിന്ന് 13,500 ടൺ കുരുമുളക് രാജ്യത്ത് ഇറക്കുമതി ചെയ്തതായി വിയറ്റ്നാം പെപ്പർ അസോസിയേഷന്റെ റിപ്പോർട്ടിൽ പറയുന്നു. ഇതുകൂടാതെ മ്യാൻമർ, ബംഗ്ലാദേശ്, നേപ്പാൾ, ശ്രീലങ്ക എന്നിവിടങ്ങളിലേക്ക് ഇക്കാലയളവിൽ 6,800 ടൺ കുരുമുളക് കയറ്റുമതി ചെയ്തതായും വിയറ്റ്നാം പെപ്പർ അസോസിയേഷൻ വ്യക്തമാക്കുന്നു. ഈ രാജ്യങ്ങളിൽനിന്ന് കുരുമുളക് അനധികൃതമായ വഴികളിലൂടെ ഇന്ത്യയിലേക്ക് വരുന്നതായും കച്ചവടസമൂഹം ചൂണ്ടിക്കാട്ടുന്നു. വിയറ്റ്നാമിൽനിന്ന് ഏറ്റവും കൂടുതൽ കുരുമുളക് ഇറക്കുമതി ചെയ്യുന്ന മൂന്നാമത്തെ രാജ്യമായി ഇന്ത്യ മാറിയെന്ന് വിയറ്റ്നാമിന്റെ കണക്കിൽ പറയുന്നു.

വിയറ്റ്നാം കുരുമുളകിന് അന്താരാഷ്ട്ര വിപണിയിൽ ടണ്ണിന് 2,800 ഡോളർ മാത്രമാണുള്ളത്. ഇന്ത്യൻ മുളകിന്റെ അന്താരാഷ്ട്ര വിലയെക്കാൾ വളരെ താഴ്ന്ന വിലയാണിത്. വിയറ്റ്നാമിൽ ഉത്പാദനം കൂടുതലാണ്. പുറമെ നിന്ന് ധാരാളം കുരുമുളക് വരുന്നതിനാൽ കുറഞ്ഞ വിലയ്ക്ക് ആഭ്യന്തര വിപണിയിൽ ആവശ്യത്തിന് മുളക് കിട്ടുന്നുണ്ട്. പ്രളയം വഴിയുണ്ടായ കനത്ത കൃഷിനാശത്തിനിടയിലുള്ള മുളകിന് വില കിട്ടാത്ത സ്ഥിതിയാണ് കേരളത്തിലെ കർഷകർക്ക്. ചരിത്രത്തിലെ ഏറ്റവും വലിയ വെല്ലുവിളിയാണ് കർഷക സമൂഹം നേരിടുന്നതെന്നും കർഷകരെ രക്ഷിക്കാൻ സർക്കാരാണ് ഇടപെടേണ്ടതെന്നും ഇന്ത്യൻ പെപ്പർ ട്രേഡേഴ്സ് ആൻഡ് പ്ലാന്റേഴ്സ് കൺസോർഷ്യം പ്രസിഡന്റ് കിഷോർ ശ്യാംജി പറഞ്ഞു.