

16:10 October 2024

A monthly bulletin of agricultural news

AGRI Titbits

Spices
Research news
Biodiversity
Climate change
Organic farming
ICAR in print
IISR in print
General
Malayalam news

Agri Titbits is an effort to collect and preserve agricultural news, especially spices, appearing in news papers and online media.
Published by Director, ICAR-IISR, Kozhikode; Compiled & prepared by Jayarajan K, ICAR-Indian Institute of Spices Research

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7 TRADITIONAL INDIAN SPICES FOR IMMUNITY BOOST

Oct 20, 2024 <https://www.wionews.com/>

Traditional Indian spices have been consumed for centuries for their various health benefits. Ayurveda, the traditional Indian medical practice uses these spices to boost immunity and fight against infections.

Here are 7 Indian spices that can help in boosting immunity:

Nutmeg



This spice has antibacterial properties and can help in boosting immunity and help in recovering from sickness faster. It can cure symptoms of colds, reduce insomnia, help with joint pain, and support weight gain.

Turmeric



Turmeric is one of the most popular spices. The compound that gives it the yellow colour, curcumin, has antibacterial, anti-inflammatory and antiseptic properties. It is often used to treat flu and respiratory problems.

Cloves



Considered an immunity-boosting spice, clove has anti-inflammatory and antioxidant properties. They improve the body's resistance to fight infections, help with gastrointestinal issues, and protect from some cancers.

They are also effective for wound healing and pain relief.

Cinnamon

This aromatic spice has antiviral, antibacterial, and antifungal properties. It helps in boosting immunity, fighting infections, and treating respiratory problems. It is also rich in antioxidants and helps regulate blood sugar levels.

Cumin seeds



Cumin seeds are a good source of iron and have various health benefits. They have anti-inflammatory and antioxidant properties. They help in maintaining blood sugar levels and are beneficial for skin health.

Black pepper

Rich in antioxidants and anti-microbial properties, black pepper is often used in tea during winter to boost immunity and keep infections at bay. It is beneficial in treating respiratory infections, sore throat and colds.

Fenugreek



Fenugreek is a natural antioxidant and helps in strengthening the immune system. It is also known to have benefits for various other conditions including digestive issues, diabetes, high blood pressure and arthritis.

DELHI DEVELOPMENT AGENCY TO SELL MEGHALAYA'S LAKADONG TURMERIC VARIETY SOON

Oct 21, 2024

<https://www.newindianexpress.com/>



After its successful plantation on the banks of Yamuna, the Delhi Development Agency (DDA) will soon make Meghalaya's 'Lakadong turmeric' available to the city residents. The agency had experimented with the non-native turmeric species at Baansera and hit an 80 per cent success rate.

The DDA officials said that they plan to replicate the plantation at other green areas of the city as well.

“The DDA, on the initiative of L-G VK Saxena, has planted Lakadong turmeric under the thick bamboo groves over 2 acres of land at Baansera, which have shown

excellent growth in the last 4 months. This variety will soon be available to people of Delhi through sale by DDA,” the agency said.

Lakadong turmeric is a rare and prized variety native to the Jaintia Hills of Meghalaya. It is known for its high curcumin content, which gives it a bright yellow colour, distinct aroma and earthy flavour.

UNVEILING TURMERIC'S BRAIN-BOOSTING SECRETS

Oct 15, 2024 <https://www.newsbytesapp.com/>



Turmeric, a golden spice beloved in Asian cuisine, is now recognized for more than its flavor. Recent research highlights its potential health benefits, particularly for the brain. This article delves into the science behind how

turmeric might enhance cognitive function and mental health. It explores turmeric's brain-boosting properties, offering insight into how this spice could be a valuable addition to a health-conscious lifestyle.

Curcumin enhances neurogenesis

Curcumin, the active compound in turmeric, has been shown to promote neurogenesis - the process of creating new brain cells. Studies indicate that curcumin increases brain-derived neurotrophic factor (BDNF) levels, a protein essential for the growth and differentiation of new neurons. This effect could potentially improve memory and cognitive function, making turmeric a valuable addition to a brain-healthy diet.

Turmeric lowers risk of brain diseases

The anti-inflammatory and antioxidant properties of curcumin in turmeric may lower the risk of developing neurodegenerative diseases such as Alzheimer's and Parkinson's. By reducing inflammation and oxidative stress in the brain, curcumin can help protect against neuronal damage and decline. Regular consumption

of turmeric could therefore play a role in preventing or slowing down the progression of these diseases.

Mood enhancement properties

Turmeric has also been linked to improved mood and mental well-being. The compound curcumin may boost serotonin and dopamine levels in the brain, which are neurotransmitters associated with feelings of happiness and pleasure. For individuals experiencing depression or anxiety, incorporating turmeric into their diet might offer a natural way to enhance mood without the side effects associated with some pharmaceutical treatments.

Cognitive function support

Studies suggest that turmeric supports cognitive functions, notably enhancing working memory, attention span, and mood stability in older adults experiencing age-related cognitive declines. The anti-inflammatory properties of curcumin are key, helping to maintain a healthy blood flow to the brain. This is vital for preserving cognitive abilities as we age, highlighting turmeric's potential role in a brain-healthy diet.

Potential role in stroke recovery

Emerging evidence indicates that turmeric could aid in stroke recovery by promoting neural repair mechanisms within the brain. Curcumin's ability to reduce inflammation and oxidative damage is believed to facilitate improvements in neurological function post-stroke. While more research is needed to fully understand this benefit, turmeric shows promise as part of rehabilitation strategies following cerebral injuries.

JAMAICAN GINGER - ONE OF THE BEST IN THE WORLD

October 10, 2024 <https://jamaica.loopnews.com/>



Jamaica has made significant strides in positioning its spice industry, particularly ginger, turmeric and pimento, on the global stage.

Through the five-year United States Department of Agriculture (USDA) Food for Progress

Jamaica Spices Project, which began in 2022, key milestones have already been achieved, laying the groundwork for the future of the country's spice sector.

Chief of Party, USDA Food for Progress Jamaica Spices Project, Dr Ronald Blake, said that six foundational studies along with research with key partners were conducted during the first year of the project, providing critical empirical data.

“For the first time, we have empirical evidence that shows that a particular Jamaican product is the best in the world,” said Dr Blake, noting that a test was conducted on the Jamaican ginger by Rutgers' Food Innovation Center, one of the world's leading research institutions.

“They have done the test, and they have not just looked at the Jamaican ginger but they have looked at the ginger from our other major trading partners,” Dr Blake adding that “what makes ginger high quality is something called gingerols, and [they] found that our ginger has four times more gingerols than the others”.

D. Blake further noted that the foundational studies conducted identified gaps in the spices sector and outlined necessary interventions that would be required to strengthen its international presence.

The USDA Food for Progress Jamaica Spices Project has, so far, put 157 acres of new production (ginger, turmeric and pimento) on the ground, using clean planting material.

The project has also fostered crucial linkages among producers, processors and exporters, laying the foundation for expanded production and processing capabilities.

“We are building some key relationships. We have also worked with some of our major agro-processors in Jamaica and we have provided them with grants to upgrade their mechanisation to pull and push back on production,” said Dr Blake. He informed that by doing this, agro-processors will be able to transform primary production into secondary and tertiary products for both local and export markets. Ginger and turmeric, once considered simple culinary staples, are now recognised as essential inputs in the pharmaceutical industry, particularly in treatments for respiratory illnesses.

“I like to tell the world that you will never be able to look at a list of superfoods and ginger and turmeric will not be on it, even if that list is as short as five, anywhere in the world. It, therefore, means that Jamaica can reset its economic viability through ginger and turmeric,” Dr Blake said.

The project is being done in collaboration with the Ministry of Agriculture and Fisheries (MOAF), the Rural Agricultural Development Authority (RADA), the Jamaica Agricultural Commodities Regulatory Authority (JACRA), Jamaica Promotions Corporation (JAMPRO), micro, small and medium-sized enterprises (MSMEs) and farmer-based organisations (FBOs).

SAUDI ARABIA LAUNCHES AMBITIOUS SAFFRON CULTIVATION PROJECT TO BECOME GLOBAL PRODUCER

October 12, 2024

<https://gulfnews.com/>



Saudi Arabia has announced an ambitious initiative to become a leading producer of saffron, often referred ‘red gold’ due to its high value and status as one of the world's most expensive spices.

The National Centre for Research and Development of Sustainable Agriculture unveiled a comprehensive plan to cultivate saffron in the Kingdom, targeting four main regions: Riyadh, Qassim, Tabuk, and Al Baha.

This initiative is part of a broader agricultural strategy aimed at enhancing natural resources and advancing applied agricultural research.

According to the government centre, the project will explore various factors that could influence saffron production, including optimal planting times, appropriate fertilisers, and ideal plant density.

The research will also assess the impact of soil salinity, irrigation water, and hydroponic and vertical farming techniques on crop yield.

Saudi Arabia’s commitment to expanding saffron production is driven by the spice's economic potential and the country's significant consumption levels.

In 2020 alone, the Kingdom imported 125 tons of saffron, accounting for about a third of global production, with an expenditure exceeding 112 million riyals (around \$30 million).

The cultivation process for saffron is labour-intensive. Saffron bulbs, which are planted seasonally, begin to flower in the fall and continue into early winter.

Each bulb, which remains productive for up to seven years, initially blooms two years after planting and can multiply into five additional bulbs.

Despite these challenges, a hectare of saffron plants yields only 4 kilograms of the spice, extracted from the threads of a small violet-coloured flower.

With Iran currently leading as the world's top producer and exporter of saffron, Saudi Arabia's entry into this market is seen as a significant shift towards agricultural diversification and economic self-sufficiency.

HOW 'VACCINATING' PLANTS COULD REDUCE PESTICIDE USE AND SECURE GLOBAL FOOD SUPPLIES

October 15, 2024 <https://www.frontiersin.org/>



As the climate crisis alters familiar growing conditions, we urgently need to find ways of protecting the world against famines. Currently, our food system is heavily dependent on pesticides—but these pesticides grow less effective as pests develop resistance to them, have a substantial carbon footprint, and can damage biodiversity. Induced resistance, using plants' immune systems to build up their strength and fight pests, could be critical to reducing our reliance on pesticides and developing sustainable agriculture.

In a growing and changing world, we need to find ways of putting food on everyone's table. Pesticides have enabled mass cultivation on an incredible scale, but they can have harmful secondary effects on humans and wildlife, and pests are rapidly evolving to overcome them. To overcome this challenge and develop the sustainable and resilient agriculture of the future, scientists writing in *Frontiers in Science* explore the potential of induced resistance. Like a vaccination for plants,

it deliberately triggers a plant's immune system, so that when the plant encounters a similar stress in the future, it fights back better.

“While induced resistance has been studied for decades, its exploitation in crop protection has only recently begun to gain momentum,” said Prof Brigitte Mauch-Mani of the University of Neuchâtel, lead author of the article. “We argue in favor of a holistic approach to crop protection, which combines multiple strategies to deliver tailored solutions. Induced resistance sits in the heart of such an integrated approach.”

Food for thought

Right now, crops are mostly protected using pesticides and breeding for resistance genes, although there is a significant risk that pests will out-evolve plants intended to resist them. Induced resistance enhances abilities a plant already has to provide more sustainable and potentially broader-spectrum protection: defending against several pathogens and pests, not just one.

Induced resistance can take several different forms—for instance, plants releasing compounds which attract herbivores' predators—but the best known and most widespread is defense priming. Defense priming takes place when part of a plant experiences a stress, and this weakly activates defense mechanisms which then activate fully when the plant undergoes another attack. Intriguingly, this priming seems to last so long that it can appear in the next generation of plants, potentially transmitted via epigenetic mechanisms.

However, induced resistance usually doesn't offer complete protection, so must be combined with other measures. It also needs to be carefully calibrated to ensure that it doesn't leave a plant open to other threats and doesn't compromise growth by causing the plant to allocate too many resources to defense.

“Induced resistance is the result of a complex network of developmental and environmental pathways in the plant,” explained Mauch-Mani. “So safe and efficient exploitation of induced resistance is not as straightforward as the introgression of a single gene or spraying a single pesticide. We will need case-

by-case evaluation of the optimal growth conditions, crop germplasm, and agricultural practices to capitalize on induced resistance's multifaceted benefits.”

Seeds of the future

Once implemented, induced resistance could do more than just ward off pests. Some of the defense compounds that plants produce in response to induced resistance are linked to health benefits or higher-quality nutrition, meaning that we could benefit not just from avoiding pesticides but from eating healthier food. Induced resistance is also faster than traditional breeding, offering a quicker way to adapt to changing climatic conditions. It's harder for evolving pests to evade, and it has the potential to offer broad-spectrum protection.

Combined with integrated pest management that uses pests' natural enemies as crop protection, we could use induced resistance to cut pesticides to a bare minimum, making agriculture more sustainable. We could also secure much longer-lasting crop protection, once we develop a better understanding of the epigenetic mechanisms that transmit defense priming to a new generation.

To make induced resistance part of farmers' and food scientists' toolkits, the researchers said we urgently need more research that covers more real-world circumstances. We also need to understand how induced resistance performs under less controlled conditions and support the development of methods that can be scaled up to field trials and then into full-scale agriculture. The researchers also called for legislative support to establish quality standards, protecting producers and consumers.

“We strongly believe that fundamental research into induced resistance will be critical for the transition towards a truly sustainable food supply,” said Mauch-Mani. “However, there is an urgent need for better communication between discovery-focused research and other stakeholders who have the expertise to translate discovery into application.

“Governments need to create a research environment and funding climate that allows for more efficient knowledge exchange between scientists, policymakers,

and industry. Like the biology underpinning it, successful exploitation of induced resistance relies on a multifaceted effort.”

This article is part of the Frontiers in Science multimedia article hub ‘Boosting plant immunity for sustainable agriculture’, which also features an editorial, two viewpoints, and a policy outlook from other eminent experts: Prof Nicole M. van Dam (Friedrich Schiller University Jena, Germany), Dr Axel Mithöfer (Max Planck Institute for Chemical Ecology, Germany) and Dr Alexandra C. U. Furch (Friedrich-Schiller-University, Germany), Dr Jyoti Shah (University of North Texas, USA), and Dr Osama El-Lissy (Food and Agriculture Organization of the United Nations, Italy)—as well as an explainer with infographics.

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HOW PLANTS COMPETE FOR LIGHT: RESEARCHERS DISCOVER NEW MECHANISM IN SHADE AVOIDANCE

October 21, 2024 <https://phys.org/news>



Plants that are close together do everything they can to intercept light. This "shade avoidance" response has been extensively researched. It is therefore even more remarkable that researchers from the laboratory of Molecular Biology at

Wageningen University have discovered another entirely new mechanism: the important role of the hormone cytokinin.

Their research has been published in Nature Communications.

Plants in nature, in the field or in the greenhouse compete with each other for light, moisture and nutrients. The more densely planted they are, the tougher the competition. But how do they know they are getting a bit crowded?

"In densely planted crops, red light is absorbed faster than far-red light, which is instead reflected. The red-to-far-red ratio therefore decreases with greater density. Plants 'see' this through the light-sensitive pigment phytochrome," says Ronald Pierik, professor of molecular biology at Wageningen University & Research.

The pigment is like a switch: it can be active or inactive. The red-to-far-red ratio operates the button, so to speak. That sets off a whole series of responses.

Pierik says, "With relatively high levels of far-red light, as is the case in densely planted crops, the stems grow longer, as do the petioles. The leaves themselves move from a horizontal to a more vertical position. Anything to rise above their neighbors and intercept more light."

The leaves of bean plants are constantly in motion, helping them to optimally position themselves for light capture. Leaf movements also help the model plant *Arabidopsis* to outgrow its competitors. Video credit: Ronald Pierik and Christa Testerink, <https://plantmoves.nl>

Aboveground and underground competition

Much is already known about this response and the mechanisms that drive it.

"How plants process information relating to light is important for our crops. Because we always plant them close together. The question is how far you can go," says Pierik.

However, plants not only compete for light but also for nutrients, for example.

"You should therefore consider shade avoidance in conjunction with other responses to competition. You would then get much closer to the situation in the field. This line of thinking led our postdoctoral researcher Pierre Gautrat, who started this work in our former group at Utrecht University, to the idea of examining aboveground and belowground competition in conjunction. One of the

research questions was whether the plant, if it does not receive much nutrition in the form of nitrogen, can still respond well to far-red light," he says.

Cytokinin serves as a messenger

For this, the growing tissues need to know how much nitrogen is available in the soil. They know that because a message passes from the roots to the growth points. In this case, the messenger is the plant hormone cytokinin. This hormone is formed in the roots and passes through the veins to the part of the plant that is above ground. If there is a large amount of nitrogen present, there will also be lots of cytokinin.

"In fact, the shade avoidance response appears to be inhibited when nitrogen is low. However, we have demonstrated that you can actually trick the plant. If you give it extra cytokinin, when nitrogen is low, you still get substantial length growth with extra far-red light. This is the first time that anyone has shown that cytokinin plays a role in shade avoidance. We have therefore discovered a new mechanism. This is quite remarkable, because these processes have already been studied very intensively," says Pierik.

And it gets even more remarkable: Until now, cytokinin was known to be the very hormone that inhibits length growth. "Looking back, all the trials on which that conclusion was based involved seedlings raised in the dark. You only get that response when you grow them in the light. And not with ordinary white light, but only with an excess of far-red light," he explains.

The inhibitor inhibited

The researchers also investigated how this mechanism works at the genetic level. "There are specific proteins that inhibit plant sensitivity to cytokinin. The genes encoding these proteins are themselves inhibited when exposed to far-red light. In other words, the inhibitor is inhibited. And that is precisely what stimulates sensitivity. These are also very new insights," Pierik says.

The architecture of crops can be very important.

"We learned that from the Green Revolution. That resulted in much higher yields because agronomists started growing rice and wheat varieties that put less energy

into length growth and more into the grains. Such new insights can help agronomists and growers achieve better production in crops like barley, wheat, maize and rice," he concludes

BIODIVERSITY

THIS NATIONAL PARK IS INDIA'S SECOND BUTTERFLY BIODIVERSITY HOTSPOT WITH 446 SPECIES

18 Oct, 2024

<https://timesofindia.indiatimes.com/>



Through research by Dr. Monsoon Jyoti Gogoi, 446 butterfly species have been discovered in Kaziranga National Park, with 18 new to India. This diversity makes Kaziranga a vital conservation site,

alongside its 'Big Five' species. A recent Butterfly Conservation Meet aimed to promote butterfly awareness and protection efforts.

Assam's Kaziranga National Park, has earned one more accolade to its name. Through years of research carried out by Dr Monsoon Jyoti Gogoi, a young lepidopterist hailing from Kaziranga, have discovered 446 butterfly species in the park, making Kaziranga second butterfly diversity hub, after Namdapha National Park in Arunachal Pradesh.



Gogoi, who has been studying butterflies since 2007, also authored a new pictorial guidebook on butterflies which documents the 446 species of butterflies recorded in Kaziranga.

Amongst the new species, 18 are new records for India. Some of these species include, Burmese Threering, Glassy Cerulean, Dark-bordered Hedge Blue, Andaman Yellow Banded Flat, Ferrar's Cerulean, Great Red-vein Lancer, Peacock

Oakblue, Singled-lined Flash, Yellow-tailed Awlking, White Palm Bob, Yellow Onyx, Long-winged Hedge Blue, Ace sp, Hill Ace and Dwarf Banded Demon. This makes butterflies an essential part of Kaziranga's conservation efforts,



standing alongside its renowned 'Big Five' species—the royal Bengal tiger, Indian one-horned rhinoceros, Asian elephant, wild water buffalo, and swamp deer.

Butterfly Conservation Meet, the first of its kind, was held from September 27 to 29 this year to check the status of the butterflies, and it reportedly attracted 40 butterfly enthusiasts from across the country. These included participants from, the North Eastern Hill University, Cotton University, various Assam colleges, Maharashtra forest department, Corbett Foundation, and key members of the North East Butterflies group. At the meet, Gaurab Nandi Das from the Czech Republic gave insights on 'taxonomy of butterflies', that aimed to raise awareness around conserving and protecting butterflies at the Kaziranga National Park. It also focussed on encouraging the participants to devote specifically towards the projects on monitoring and habitat protection. Reflecting on the achievements, Jyoti Gogoi commented that the record is special for Kaziranga National Park as it lies outside the Himalayan and Patkai mountain ranges, and thus the existence of high species diversity is remarkable. Along with Kaziranga National Park, the Panbari Reserve Forest in Kaziranga is also home to a wide variety of butterfly species. Assam's national park is spread across the districts of Golaghat, Sonitpur, Biswanath and Nagaon. The park is home to two-thirds of the world's Indian rhinoceroses and is considered a UNESCO world heritage site.

INDIA'S DISAPPEARING WETLANDS ARE AN EARLY WARNING SIGN OF DRASTIC BIODIVERSITY LOSS

18 Oct 2024 <https://india.mongabay.com/>



The gradual impacts of global warming, habitat destruction, and biodiversity loss are bringing the world closer to the edge of various tipping points, beyond which changes in earth systems will be sudden and irreversible. The disappearance of Chennai's

wetlands is an example of an early warning before local tipping points are reached, states this year's Living Planet Index (LPI) by World Wide Fund for Nature (WWF).

In 2015, the capital of the southern state of Tamil Nadu, Chennai, faced a flood that was called "the worst in a century". Then, in 2019, water levels dropped so severely that many said "day zero" had arrived. Rapid urbanisation led to the degradation of around 85% of the city's wetlands, and the "damage inflicted on the city was made worse by the destruction of species-rich wetlands and natural drainage systems, which used to shield people from the worst impacts of both droughts and floods," the report says.

Between 1940 and 2014, India lost about one third of its wetlands to urbanisation. There are other alarming trends too – a majority of bird species in India are on the decline, signalling rapid habitat loss, including from ecosystems like open savannah grasslands.

Local tipping points can have ripple effects regionally, and sometimes globally. The Living Planet Index report, a bi-annual publication, tracks the rate at which wildlife populations are changing over time as an indicator of ecosystem functioning. According to the report, habitat destruction and overexploitation of

natural resources are the primary drivers of biodiversity loss in the Asia-Pacific region.

The report's findings were published ahead of the 16th global Conference of Parties (COP16) to the United Nations Convention on Biological Diversity meeting due to be held in Cali, Colombia October 17 onwards, where governments will contemplate how to halt biodiversity loss and aid conservation. "We need to increase transnational efforts, to have a different perspective and a different vision. We need a structural reform of the financial system so that countries have the financial mechanisms they need to respond to these crises," Colombia's environment minister and COP16's President Elect María Susana Muhamad González shares in a statement.

Biodiversity is declining everywhere

The statistics are concerning across every region of the world. Overall, wild vertebrate species have declined by 73% between 1970 and 2020, according to the LPI. The Latin America and Caribbean region experienced the sharpest decline (95%) followed by Africa (76%) and Asia and the Pacific (60%). These declines are a result of "humanity's disregard for the complex interrelationships within ecosystems and the delicate balance between the biosphere and the atmosphere," the report says.

Even though Europe and Central Asia North America have the lowest declines (35% and 39%), it's a reflection of the fact that "large-scale impacts on nature were already apparent before 1970 in these regions: some populations have stabilized or increased thanks to conservation efforts and species reintroductions," it says.

The declines are based on data collected from 35,000 population trends of 5,495 species, and reported across marine, terrestrial, and freshwater ecosystems. Freshwater ecosystems are most vulnerable because of pressures on their ecosystems. The Chinook salmon, for example, declined by 88% because of

warming waters and obstruction of migratory routes from dams and other major infrastructure projects.

In the Asia Pacific region, where species populations are declining by 1.8% annually, “the threat of invasive species and disease is frequently reported for populations,” the report says. Reptiles are most threatened by invasive species in the region, the report finds.

Transforming food and finance systems

A major factor driving habitat destruction is agriculture and existing food systems. Our food systems are “inherently illogical,” the report states, because food production is coming at the cost of biodiversity without delivering adequately on nutrition. Food systems – particularly large-scale agriculture – has been identified as a threat to 24,000 of the 28,000 species at risk of extinction.

Programmes such as the Andhra Pradesh Community-Managed Natural Farming (APCNF) initiative are a “good example of the positive socio-economic impacts of nature-positive food production,” the report says. The initiative includes a host of practices such as avoiding the use of synthetic fertilisers and pesticides and sowing indigenous crops and seeds. The initiative has resulted in the doubling of crop diversity and an increase in farmers’ net income by 49%.

“We have to increase the resilience of small farms, including how they can survive despite the changing climate and the current collapse of the climate system. The other [focus should be on] pricing. If you have good food, you will get better pricing, and better offtake means you will sell all,” Pavan Sukhdev, an economist and CEO of GIST Impact, an impact data and analytics provider that led the initiative, told Mongabay India last year.

The Living Planet Index report proposes four steps to improve food systems. These include optimising crop yields and livestock productivity in a sustainable way (i.e. without putting additional stress on freshwater resources, increasing greenhouse gas emissions or exacerbating nitrogen and phosphorus pollution),

ensuring a healthy and nutritious diet, reducing food loss waste, and finance to support all of the above.

Only 4% of global climate finance goes towards food systems, even though they account for a third of emissions. Most subsidies towards agriculture and food systems are “market-distorting” because they incentivise more production without accounting for negative environmental impacts, according to a report by the Climate Policy Initiative.

“Governments need to integrate nature, climate and nutrition into other policy areas, including agriculture, land use, health, finance and trade. Private companies also have a critical role to play by encouraging sustainability and nature-positive practices along their value chains, including eliminating deforestation and conversion, and tackling food loss and waste,” the Living Planet report says.

Global Biodiversity Framework

In 2022, world leaders adopted the Kunming-Montreal Global Biodiversity Framework (GBF), an agreement with four broad goals and 23 targets aimed at conserving biological diversity and indigenous rights. Among them is the goal to effectively manage and conserve 30% of terrestrial, inland water, and coastal and marine areas by 2030. Under the Paris Agreement, countries have agreed to limit global warming to “well below” 2 degrees Celsius.

“Right now, commitments, actions and outcomes across government, the private sector and civil society are insufficient, disjointed and siloed,” the report says. National governments, including India, are expected to submit their National Biodiversity Strategies and Action Plans to align with the GBF.

VIJAYAPURA'S MAMADAPURA FOREST IS 5TH BIODIVERSITY HERITAGE SITE OF KARNATAKA

Oct 17, 2024

<https://timesofindia.indiatimes.com/>



Karnataka govt Wednesday notified a new biodiversity heritage site in Vijayapura district. The sprawling 1,494-acre reserve forest at Mamadapura village has been notified as the fifth biodiversity site and

renamed Shri Siddeshwara Swamiji Biodiversity Heritage Site. The site will officially be inaugurated on Jan 2, coinciding with the second death anniversary of late spiritual leader Siddeshwara Swami. Notifying the new heritage site, forest minister Eshwar Khandre said this will pave the way for conservation of flora and fauna in North Karnataka region. "The govt has decided to name the site after Shri Siddeshwara Swami of Jnanayogashrama. Known for his philosophical thoughts, Siddeshwara Swami contributed in a big way towards environmental conservation. His love for flora and fauna inspired several citizens to turn to conservation. The region has a unique ecosystem of deciduous forest with shrubs along with a salubrious population of wildlife. Hence, the govt has decided to notify the forest as a heritage site," Khandre explained. Several political functionaries from North Karnataka, led by industries minister MB Patil and textile minister Shivananda Patil had appealed to the govt to declare Mamadapura forest as Siddeshwara Swamiji Biodiversity Heritage Site.

"The move will not affect the livelihood of villagers as none will be evicted. However, commercial activities that could change the topography of the region won't be allowed. Besides, the forest area will get additional security cover under Section 37 of Biological Diversity Act 2002," Khandre said. Karnataka was one of the first states to conserve unique ecosystems as biodiversity

heritage sites. Nallur Tamarind Grove near Devanahalli, University of Agricultural Sciences (UAS) at Gandhi Krishi Vigyan Kendra, Hogrekan shola forest of Chikkamagaluru and Ambaragudda area of Shivamogga have already been declared biodiversity heritage sites in Karnataka.

CLIMATE CHANGE

CLIMATE CHANGE IMPACT HARSHER ON POORER FARMERS IN INDIA: FAO REPORT

October 16, 2024 <https://www.thehindu.com/>

Poor households globally lose 5% of their total income in an average year due to heat stress and 4.4% due to floods compared with households that are relatively better off, the Food and Agriculture Organization (FAO) of the United Nations said in a report on Wednesday (October 16, 2024), warning about the negative impacts of climate change on the farming population in India.

Climate change may impact food grains production up to 47% by 2080: ICAR-DG

Senior FAO economist Nicholas Sitko presented the report “The unjust climate. Measuring the impacts of climate change on rural poor, women, and youth” at an event in New Delhi.

The report said on-farm income sources of the rural poor in India were affected in different ways depending on the type of climate stress. In case of droughts or such events, poor households dedicated more time and resources to agricultural production to sustain themselves, as off-farm employment opportunities reduced. The total incomes of poor households reduce compared with those of families that have not been exposed to a significant climate stressor, it said. “The vulnerability of poor households to climate stressors is likely to be rooted in structural inequalities,” the report said and asked the government to take policy measures such as expanding the social security net.

Need for climate-smart agriculture in India



Anticipatory social protection programmes can be scaled up and scaled out to more beneficiaries in anticipation of an extreme weather event, the report suggested. “Providing effective livelihood support ahead of extreme weather events can help reduce reliance on adverse coping strategies and limit the

number of people pushed into poverty because of these events,” it said. The report recommended improving workforce diversification and enhancing off-farm employment opportunities. “Complementary support, such as mentorship programmes and initiatives to strengthen socio-emotional skills, is essential for effective participation in the modern workforce,” it said.

It urged policymakers to address “gendered barriers” in non-farm employment. “Gender-transformative methodologies, which use social behaviour change methodologies to directly challenge discriminatory gender norms, can tackle entrenched discrimination that often prevents women from exercising full agency over economic decisions that impact their lives,” it said.

The report added that floods, globally, widen the income gap between poor and non-poor households in rural areas by approximately \$21 billion a year, and heat stress by more than \$20 billion a year. “Long-term temperature rises lead to an increase in poor households’ dependency on climate-sensitive agriculture relative to that of non-poor households. A 1° C increase in average long-term temperatures leads to a 53% increase in the farm incomes of poor households and a 33% decrease in their off-farm incomes, relative to non-poor households,” the report said.

Responding to the report, NITI Aayog member Ramesh Chand told *The Hindu* that India was doing its best to deal with the issue of climate change. He said recent Periodic Labour Force Surveys had shown remarkable increase in the participation of women in workforce. “We have implemented National Innovations on Climate

Resilient Agriculture (NICRA) much earlier to address the problem of climate change. This project helped farmers adapt to severe climatic conditions. We were first in the world to do so for all crops. We also have a contingency plan for all agriculture districts. We were the first country to implement an employment guarantee scheme as a social safety net. During the pandemic, we gave 10 kilogram foodgrains free for two-third of our population. The report should have considered these aspects too. If there are any good policy suggestions by the FAO, we should consider that too,” he said.

WHY CLIMATE RESILIENT AGRICULTURE IS THE NEED OF THE HOUR

October 05, 2024

<https://www.theweek.in/>



Prime Minister Narendra Modi in August released 109 high yielding, climate resilient and biofortified varieties of crops. The new environment-friendly varieties are expected to be highly beneficial in reducing expenditure and increasing profits on farmers yields. The 109 varieties of 61 crops include 34 field crops and 27 horticultural crops. They include cereals, millets, pulses, oilseeds, fruits, vegetables and commercial crops.

The release of new seeds is an important initiative to counter the impact of climate change on agriculture. Whereas the agriculture’s contribution to climate change is considerable, the sector is likely to bear the brunt of changes in weather and climate patterns in a major way. Climate change poses a multitude of challenges to agriculture. Shifts in temperature and precipitation patterns directly affect crop yields, threatening food security for millions. Droughts, floods, and hurricanes disrupt growing seasons, leading to significant economic losses for farmers.

According to the Food and Agriculture Organization (FAO), climate change could push an additional 100 million people into hunger by 2030, if countries fail to adapt to new agricultural practices. Says Sangeeta Dawar from Bayer Crop

Science, “Climate change is one of the greatest challenges we all face today. According to a global survey of 2,000 farmers, 75 per cent recognize the reality of climate change and agree that adaptation is necessary.”

As climate change intensifies, India's nearly 120 million farmers—most with less than 5 acres of land—are seeing their livelihoods threatened by erratic rainfall patterns, rising temperatures and increased pest infestations. As India is among the countries most vulnerable to climate impacts, the new climate resilient seeds are essential in ensuring the well-being of farmers, people as well as export.

The economic implications of climate change on agriculture cannot be overstated. Farmers who adopt climate-resilient practices are better equipped to manage the risks associated with climate variability. Besides, adopting climate-resilient agricultural practices enhances resource efficiency. Speaking at the second edition of the Rith Summit organised by Arya.ag, India's largest integrated grain commerce platform, in strategic partnership with the Bill & Melinda Gates Foundation in New Delhi, Subhadeep Sanyal from Omnivore, an Indian start up in the agriculture said, “In agriculture, if we don't prioritise sustainability in relation to nature, it will directly impact our assets and, consequently, the market. Economic sustainability is a key factor for us when evaluating investments, with our focus being on increasing farmers' income and providing them better access to finance.”

Chattanathan Devarajan, Co-Founder of Arya.ag, emphasised on the importance of Public-Private Partnerships to reduce food loss, fostering multi-stakeholder collaborations for climate action, and developing a digital platform for sustainable sourcing. “We enabled Public-Private Partnership (PPP) models in collaboration with the state governments of Uttar Pradesh and Assam to contribute to climate action. These initiatives have reduced food loss by 7 per cent, enabled the conservation of 12 million litres of water, and saved 48,000 kgs of fertilisers.” Adds Raman Wadhwa, Director of DAY-NRLM at the Ministry of Rural Development, “Collaboration is key to making our efforts more climate-resilient.

No one can tackle this alone; we need multi stakeholder partnerships to drive climate action. The climate crisis is an urgent threat, and the economic cost will be enormous if we don't act. However, we can turn this challenge into an opportunity.”

As the world grapples with the escalating impacts of climate change, the agricultural sector stands at a critical crossroads. The urgency for climate-resilient agriculture has never been more pronounced. With rising temperatures, unpredictable weather patterns, and increasing frequency of extreme weather events, the need for sustainable agricultural practices is essential not only for food security but also for the health of our ecosystems and economies.

ORGANIC FARMING

HOW ONE INDIAN STATE WENT 100% ORGANIC

October 15, 2024 <https://reasonstobecheerful.world/>



In Pelling, a town in Western Sikkim in India with the best views of the Himalayan peak Kanchenjunga, Tsering Bhutia gazes at the terraced field behind his house. “We’ve grown organic black cardamom for years,”

he says. “But ever since a blight destroyed my crop, I’ve been contemplating making a homestay here instead...” About two miles away, Rinchen Lama adds homegrown vermicompost to her field. “The squash I grow is the most delicious you’ll ever eat,” she says. “But my kids also like other vegetables, so I get them from the market.”

In a state that officially went 100 percent organic in 2016, and won what many regard as the Oscar for best public policies — the UN Food and Agriculture Organisation’s Future Policy Gold Award — in 2018, such stories paint an honest

picture of the challenges that arise in fundamentally altering how our food is grown. But this change is necessary: An estimated 52 percent of agricultural land across the globe is moderately to severely degraded due to monoculture, chemical pesticide and fertilizer use, and groundwater extraction — and this will accelerate unless these practices change. And in 2019, a United Nations Environment Programme (UNEP) report found that commercial food production over the last 50 years has driven more biodiversity loss globally than any other activity.

When it comes to organic farming, Australia leads the world's tally with 53 million hectares under cultivation, and at 4.7 million hectares, India stands a far second (the United States, at 2.06 million hectares, is ninth). Not many countries and regions have managed to transition to 100 percent organic food production, as it is tricky and initially expensive. Here's how Sikkim succeeded where Sri Lanka failed disastrously.

Lessons from a failed experiment

In 2021, Gotabaya Rajapaksa, president of Sri Lanka, declared an overnight ban on the use and import of chemical fertilizers and other crop inputs in the country. A survey at the time found that over 90 percent of the two million farmers in the island nation used chemical fertilizers and 85 percent expected huge reductions in their harvest if they stopped suddenly.

Indeed, the ban, coupled with the higher production expenses, devastated food production. The government was not able to supply enough organic fertilizers, or import sufficient soil nutrients to satisfy farmers' requirements, before banning agrochemicals. Consequently, the production of rice (a significant staple on Sri Lankan plates) dropped by half, and the production of tea, Sri Lanka's largest cash crop, fell by 18 percent. In 2022, food shortages and a worsening foreign exchange crisis forced the government to call off its experiment with organic farming. The World Food Programme estimated that in 2023, 17 percent of its population of 22 million remained food-insecure, an improvement on 2022's figure of 28 percent.

In comparison, Sikkim chose the slow route: Back in 2003, the state gave itself a decade to transition to 100 percent organic. The odds were in its favor. Sikkim is India's most sparsely populated state (86 people per square kilometer, as per the 2011 census, compared to 828 in the North Indian state of Uttar Pradesh). Its mainly subsistence farms were, and continue to be, spread thinly across mountainous terrain, which makes supplying inorganic fertilizers expensive. Consequently, using homegrown organic manure and vermicompost (compost created from worm waste) was very much the norm. In fact, Sikkimese farmers were already using less nitrogenous and phosphatic fertilizers in 2003: merely 9.9 kg per hectare of cropped area, compared to Punjab (172 kg per hectare) and Haryana (150.4 kg per hectare). It also helped that the local populace already understood the value of organic food. "As children, we were taught that *basti* (local) vegetables grown without any chemical inputs by small farmers, were the best vegetables to eat," says Renzino Lepcha, CEO of Mevedir, an organic agri-business and certification agency in Sikkim. "And we chose them over those imported from the plains."

"We've borrowed this earth from our future generations..."

The state's organic journey kicked off in 2004, with an action plan in which the then-chief minister Pawan Chamling wrote, "[W]e have not inherited this earth from our forefather but have borrowed it from our future generations, it is our duty to protect it by living in complete harmony with nature and environment." This lofty idea was accompanied by pragmatism: At this juncture, the subsidy on chemical fertilizer was merely reduced (it was fully banned in 2014). The state government developed 100 model villages where organic farming was demonstrated, and as most landholdings were small, encouraged farmer-producer groups to collectively apply for organic certification. This was provided initially through certification agencies like Mevedir, and later, starting in 2015, through the newly-minted Sikkim State Organic Certification Agency.

Bottom of Form

In 2010, the Sikkim Organic Mission, the nodal agency that implemented the state's organic policy, was formed. "We underwent many training modules and learned about different aspects of organic farming — making fertilizers and crop medicines from cow dung and urine, multi-cropping, crop rotation, composting, etc.," Bhutia, the farmer in Pelling, recalls. "Most of these were easy, and cheap to adopt." By 2016, when the state government and contracted agencies had certified more than 75,000 hectares of land, the state was declared to have become 100 percent organic.

But even though the transition was leisurely and well-planned, Sikkim faced — and continues to face.

“Why export organic pineapples — and eat non-organic fruit at home?”

In 2022, 82 percent of the respondents in a study of the state by the Ashoka Trust for Research in Ecology and the Environment (ATREE), a nonprofit focused on conservation and sustainable development, reported that they still source their staple food from the market or through the public distribution system. "And this is not necessarily organic," Sarala Khaling, an ecologist and interdisciplinary researcher at ATREE, says. "Farmers are growing more cash crops than food crops," she says, describing the state's changing foodscape, which is influencing what farmers are choosing to grow — or not grow. "I've seen many farms abandoned for reasons including economic unviability, climate uncertainty, reduced land holding sizes and loss of interest in farming among the youth."

This declining interest in farming has been exacerbated by a drop in agricultural production between 2017 and 2020, and the lack of agricultural infrastructure to make agribusinesses financially feasible (which could make farming more attractive to the younger generation). "Initially in 2006, we started sending ginger and turmeric to Holland and Germany by air," Lepcha says. "But in the absence of any cold chain infrastructure, our export volumes were so small that they weren't commercially viable."

There has been a decline in political interest in organic farming in Sikkim as well. In the 2019 Assembly elections, the political party Sikkim Democratic Front, led by the erstwhile chief minister Pawan Chamling, lost to the Prem Singh Golay-led Sikkim Krantikari Morcha. Chamling, a farmer who had served five consecutive terms as chief minister of Sikkim, had spearheaded and overseen the transition to organic. But the new government, Lepcha observes, has different priorities. “Five years ago, the Krishi Bhawan (Department of Agriculture) used to be buzzing with daily meetings, training sessions and seminars on organic agriculture,” he says. “Today, there are hardly any.”

The return of the bees

On the bright side, studies and field observations indicate that Sikkim’s fragile mountain ecology is thriving today. “We can actually see on the ground that going organic has improved the soil quality and biodiversity in the areas that we work,” Lepcha says. Mevedir presently works with 30 farmer groups across three districts in Sikkim. “Most farmers we work with experience the positive effects of going organic, and it certainly helps that homemade crop inputs are way cheaper than buying their chemical counterparts,” he says.

Rain-fed agriculture has helped reduce the need for irrigation and conserve water, a scarce commodity in the Himalayas. Some reports suggest that since 2014, bee populations have been rebounding, with yields of pollinator-dependent cardamom increasing by more than 23 percent. The organic tag is also fueling an increase in wellness tourism, and tourist arrivals in the state have increased by 25 percent since 2016. Khaling sounds a warning note here, however, saying that she is apprehensive about “opening the floodgates of an ecologically fragile zone to mass tourism.”

Even though the government focus on organic agriculture has lessened, Lepcha says that farmers supplying to Mevedir continue to practice it. Marginal farmers like Bhutia and Lama prefer the organic way as well.

“Sikkim isn’t a failed model, but it isn’t easily replicable either!”

Sikkim’s unique traits — low population density, small landholding size, large natural resource base, historical prevalence of organic farming and most importantly, political will — have lubricated its organic journey. However, as GV Ramanajanegulu of the Hyderabad-based Center for Sustainable Agriculture points out, these traits also make its organic transition hard to replicate. “But while the state’s organic transition may not have been 100 percent successful, it is proof that if a government has the will, it can intervene and transform farming,” he says.

The Sikkim case highlights another key takeaway: Going organic is much more than simply using organic agricultural inputs. It is as much about changing how we grow as it is about changing what we actually eat. Lama’s children groan every time there is squash for dinner, and at Mevedir’s organic vegetable outlet in Gangtok, Lepcha is seeing a growing demand for exotic and out-of-season vegetables like tomatoes. “While this demand exists, vendors in Sikkim will be forced to import from other parts of the country,” he says.

Khaling and her colleagues at ATREE suggest that it would be more transformative to broadly uphold all the principles of agroecology (the complex interrelationship between people, food production, livelihoods and the environment) instead of narrowly focussing on organic farming alone. “Replenishing the water and soil used for farming, eating what we’re producing, allowing biodiversity and domestic animals to thrive alongside farms and most of all, ensuring that farming practices improve the lives and lifestyles of the farmers themselves, could improve the Sikkim model,” she says.

Meanwhile, Lama’s children noisily protest against squash being on their dinner menu yet again, and once again, for a little variety, she buys some potatoes from the local market to cook into a curry.

MEGHALAYA GOVERNMENT LAUNCHES LAND MANAGEMENT PROJECT AIMING ORGANIC FARMING IN STATE

Oct 01, 2024

<https://www.indiatodayne.in/>



The Meghalaya government, on October 1 launched the Sustainable Land Management Meghalaya Project, aiming a boost in sustainability and organic farming objectives in the state.

The project has been launched in conjunction with KfW Development Bank.

Taking to the microblogging site X, Chief Minister Conrad K Sangma lauded the initiative. He wrote, "Today we successfully launched the Sustainable Land Management Meghalaya Project, in conjunction with KfW Development Bank, representing a major stride towards sustainability and organic farming objectives in Meghalaya."

The Meghalaya chief minister informed that the initiative capitalises on traditional farming methods which aim to establish market connections for farmers.

The initiative also addresses productivity challenges through organic farming promotion, certification streamlining, farmer capacity enhancement, and market linkage fortification.

EXPLORING ANAEROBIC SOIL DISINFESTATION TO BOOST ORGANIC FARMING AND WEED MANAGEMENT

October 3, 2024 <https://www.seedworld.com/>



Weeds are a major barrier to achieving higher yields in organic vegetable and horticultural crop systems. The lack of effective biological weed-management solutions presents a significant challenge to the broader adoption of organic farming practices. To address this, the

U.S. Department of Agriculture (USDA) has awarded a \$1 million, four-year grant to a Penn State-led team of plant scientists and an economist to explore anaerobic soil disinfestation (ASD), a microbial-driven process aimed at weed management to support the transition from conventional to organic farming systems.

“Anaerobic soil disinfestation — often referred to as ASD — is emerging as a broad-spectrum biological soil treatment for the management of soilborne pests and pathogens, including weeds,” said Francesco Di Gioia, associate professor of vegetable crop science at Penn State’s College of Agricultural Sciences. “It is an ecological alternative to chemical soil fumigation. The method consists of incorporating easily decomposable organic amendments into the soil, followed by irrigation to saturation and soil cover with impermeable plastic.”

The ASD process promotes the decomposition of organic matter through soil saturation, creating anaerobic conditions that build up volatile fatty acids and other organic acids that are toxic to weeds. Without oxygen, weed seed respiration is suppressed, and changes in soil temperature and pH levels work together to kill weed tissues, preventing further propagation.

The project’s primary goal is to improve the profitability and sustainability of organic vegetable and specialty crop production while facilitating the transition to

organic farming. According to Di Gioia, this will be achieved by optimizing and integrating ASD as a biological weed-management strategy in specialty crop systems, with a focus on promoting soil health.

The research will include coordinated on-farm demonstration trials in Florida and Pennsylvania, two states representing the U.S. Northeast and Southeast, to evaluate ASD's effectiveness in suppressing key weed species.

"In addition to assessing the efficacy of anaerobic soil disinfestation in suppressing specific weeds, the project will allow us to investigate the impact of ASD on soil-plant nutrient dynamics, investigate the mechanism of suppression, and examine the impact of the treatment on the soil microbiome," Di Gioia explained.

Claudia Schmidt, assistant professor of marketing and local/regional food systems at Penn State, will study the economic sustainability of ASD.

"She will identify obstacles to the adoption of this new biological solution," Di Gioia said in a Penn State news release. "She will oversee the economic analysis and assessment of the obstacles to adoption."

This research is part of the USDA's \$121 million investment to advance research and extension activities to address key challenges in specialty crops, including fruits, vegetables, tree nuts, dried fruits, horticulture, nursery crops, and organic agriculture. The funding includes \$70.4 million for specialty crop production research and \$50.5 million to support farmers and ranchers who grow and market organic food, fiber, and products.

Other key team members from Penn State include Caio Brunharo, assistant professor of weed science, Francisco Dini-Andreote, assistant professor of phytobiomes, and horticulture educators Leah Fronk and Glen Bupp from Penn State Extension. Additional team members include Erin Rosskopf, research leader/microbiologist, and Jason Hong, research molecular biologist, both from the USDA's Agricultural Research Service U.S. Horticultural Research

Laboratory in Fort Pierce, Florida, and Natosha Finley, assistant professor of chemistry at Central State University.

ICAR IN PRINT

EXPERTS DISCUSS WAYS TO MAKE CULTIVATION OF SPICES PROFITABLE

Oct 17, 2024

<https://www.tribuneindia.com/>



The three-day annual group meeting of the 35th All-India Coordinated Research Project on Spices started at Chaudhary Charan Singh Haryana Agricultural University (HAU) on Tuesday.

The Deputy Director General (Horticulture) of Indian Council of Agricultural Research (ICAR) Dr SK Singh was the chief guest, while the meeting was chaired by the Vice Chancellor of the HAU Prof BR Kamboj.

Scientists from 40 All India Agricultural Research Project Centres are participating in this meeting being jointly organised by the Department of Vegetable Science of the HAU and Indian Council of Agricultural Research, Central Spices Research Institute, Kozhikode, Calicut, Kerala.

Need to promote natural farming

- Scientists from 40 All-India Agricultural Research Project Centres are participating in the three-day meet.
- They were of the view that farmers could earn more profit than other crops by cultivating spice crops.
- They said natural farming should be promoted among farmers for spice cultivation.

Addressing the meeting, chief guest Dr Singh said more work needs to be done on the cultivation of spices from nursery to post-production processing in the field to make the cultivation of spices more profitable. He said farmers could earn more

profit than other crops by cultivating spice crops. “Farmers need to be motivated to engage in farming by forming groups with the help of farmer producers’ organisations (FPOs). Due to changes in the climate, planning according to agro-climatic zones and cultivating improved varieties will give more benefits. He said that along with increasing production, there is also a need to improve the quality of spices so that there is no harm to health due to the use of spices,” he said. The ICAR has national-level institutes of spices working in Kozhikode and Ajmer. He also called for making farmers aware to promote natural farming in spice cultivation. He said recently 109 varieties of climate change tolerant and high-yielding crops were released, which included six varieties of spice crops.

HAU Vice Chancellor Dr Kamboj said spices not only added flavour and taste to the food but also enhance its quality and medicinal values.” India is also known as the “Land of Spices” as it is the largest producer, consumer and exporter of spices and spice products. Indian spices are famous in the world. Out of 109 spices listed by the International Organisation for Standardisation (ISO), India produces 63 thanks to its diverse agro-climatic zones. Out of the total 63 spices grown in India, 20 are classified as seed spices whose dried seeds or fruits are used as spices and they contribute to about 45 per cent of the country’s area and 18 per cent of the total spice production,” he informed.

The VC also stressed the need to formulate strategies to ensure national food and nutrition security by highlighting the challenges of the spice industry, which include declining productivity, soil health issues, microbial dynamics, climate change, food safety challenges, increasing problems of adulteration in spices. It is important to adopt modern technology to increase the production of spices. He emphasised on working in coordination to deal with various challenges, including climate change.

He said the three-day deliberations will help experts from different fields to give suggestions for future studies and research initiatives in spices.

ICAR-CITH, RELEASES SEVEN VARIETIES IN TEMPERATE HORTICULTURAL CROPS

24-10-2024

<https://icar.org.in/i>



ICAR-Central Institute of Temperate Horticulture, Srinagar released seven varieties of temperate horticultural crops through SVRC

including three apple hybrids (CITH-Ammol, CITH-Pride & CITH-Priame), two walnut varieties (CITH-Early & CITH-Prolific), one onion variety (CITH-Reg Gem) and one garlic variety (CITH-Jumbo).

The varieties were released through SVRC during 10th meeting of State Seed Sub Committee held at Civil Secretariat, Srinagar under the Chairmanship of Shri Shailendra Kumar IAS, Principal Secretary to the Government, Agriculture Production Department.

In apple two varieties (CITH-Pride & CITH-Priame) are scab resistant with quality features and will play an important role in reducing the use of pesticides in the future and thus saving environment and human health with better returned. One apple variety (CITH-Ammol) is improvement of indigenous apple cultivar “CITH-Ambri-1” having traits like early maturity, higher aroma and better shelf life. Walnut variety (CITH-Early) is early maturing with better nut and kernel quality features and another walnut variety (CITH-Prolific) is having lateral bearing habit and thus high yielding with better quality nuts & kernel characteristics.

These varieties will replace the non-descriptive heterogeneous walnut produce with homogenous high quality walnut produce having higher commercial value and export qualities.

Onion variety (CITH Red Gem) is first long day onion variety with red colour in our country having enhanced shelf life which will improve the availability period and market value of the produce. Garlic variety (CITH Jumbo) is the first long

day garlic variety which will replace the non-descriptive local and Chinese genotypes and will have better market potential due to uniformity and quality in produce.

FIRST-DRONE-BASED MARINE MAMMAL-FISHERY INTERACTION STUDY IN INDIA

4th October 2024 <https://icar.org.in/>



ICAR - Central Institute of Fisheries Technology, Kochi, has carried out a drone-based survey to study marine mammal fishery interaction. This is the first initiative in the country to use drone technology for marine mammal research,

providing a significant boost to marine mammal conservation efforts. The study was carried out under the Marine Mammal Stock Assessment in India (MMSAI) project funded by the Pradhan Mantri Matsya Sampada Yojana (PMMSY). Traditional survey methods often face constraints related to time, costs, and difficulties in monitoring elusive marine species across vast oceanic areas. In contrast, drones provide a more efficient, non-invasive, and cost-effective solution for collecting comprehensive data.

Dr George Ninan, Director, ICAR-CIFT, stated that the innovative approach is expected to provide crucial data on the behavioral aspects, development of scientific mitigation measures, and conservation of protected marine species.

The research team consists of Dr. Prajith K.K, Shri. Paras Nath Jha, Dr. Dhiju Das P. H., Dr. Rithin Joseph, Shri. Hrishikesh P. and Shri. Immanuel Shaji successfully identified a pod of Indo-Pacific humpback dolphins (*Sousa Sp.*) from off Kochi. These dolphins are listed as endangered under the International Union for Conservation of Nature's (IUCN) Red List.

7 NEW HIGH YIELDING SPICE VARIETIES IDENTIFIED

October 18, 2024

<https://www.thehindubusinessline.com/>



All India Coordinated Research Project on Spices (AICRPS) has identified seven new high yielding spice varieties.

These are Karan Dhaniya-1 (Coriander) and IISR Surya (Turmeric), Jodhpur Jeera-1 (Cumin), CAZRI Cumin-1 (Cumin), Gujarat Fennel-13 (Fennel), RMt-259 (Fenugreek) and SAS-KEVU (Ginger). These varieties

are expected to enhance productivity and resilience, thus aiding farmers to adapt to the changing agricultural conditions, a press release issued here said.

The new varieties were identified in the 35th Annual Group Meeting of the Indian Council of Agricultural Research – AICRP on Spices held at Chaudhary Charan Singh Haryana Agricultural University (CCS HAU).

The event was organized by AICRP, under the aegis of Indian Institute of Spices Research (IISR), Kozhikode.

Rajbir Garg, Director of Research, CCS HAU, highlighted the importance of collaborative efforts in advancing spice research. D. Prasath, Project Coordinator of ICAR-AICRP on Spices and Principal Scientist at IISR, provided an overview of the project's achievements and future directions.

The meeting also introduced five new technologies designed to make a significant impact in spice cultivation, notable among these are seed rhizome priming with *Trichoderma* to enhance yield in ginger and turmeric, and advanced management techniques for controlling rhizome rot in cardamom. These technologies aim to boost crop productivity and address prevalent agricultural challenges.

With the introduction of these new varieties and technologies, Indian spices are poised to maintain its leadership in the global market, ensuring sustainable growth for farmers and the industry alike, the press release added.

GENERAL

EXPORT PRICES INCREASE SHARPLY, THE US CONTINUES TO BE THE LARGEST MARKET FOR VIETNAMESE PEPPER

21/10/2024 <https://www.vietnam.vn/>



Pepper prices today November 22, 10 in the domestic market are flat in some key localities, trading from 2024 - 142.500 VND/kg.

Specifically, pepper price today at Gia Lai at 143.000 VND/kg.

Pepper prices today in the provinces Dong Nai (142.500 VND/kg); Dak Lak (144.500 VND/kg); Dak Nong (144.500 VND/kg); Ba Ria - Vung Tau (143.500 VND/kg) and Binh Phuoc (143.000 VND/kg).

Thus, after a slight increase for one day, domestic pepper prices today remained stable in some key growing areas. The highest pepper price was recorded at 1 VND/kg.

According to data from the Vietnam Pepper and Spices Association (VPSA), in the first 15 days of October, Vietnam exported 10 tons of pepper, with a total export turnover of 9.039 million USD.

Thus, Vietnam's pepper exports from the beginning of the year to mid-October reached 10 tons, with a turnover of 209.933 billion USD, down 1,05% in volume but up 1,9% in turnover compared to the same period last year.

The US remained the main export market, accounting for 31,7%, reaching 2.865 tons, while Olam was the largest exporter, reaching 1.424 tons, accounting for

15,8%. Next were Nedspice Vietnam: 945 tons, Phuc Sinh: 793 tons, Tran Chau: 761 tons, and Lien Thanh: 578 tons.

On the other hand, in the first 15 days of October 10, Vietnam imported 2024 tons, with a total import turnover of 2.295 million USD. Indonesia is the main pepper supplier to Vietnam, accounting for 13,7%, reaching 79,5 tons.

The main importing enterprises include: Tran Chau: 407 tons, Harris Spice: 360 tons, Phuc Sinh: 350 tons, Olam Vietnam: 342 tons and Phuc Thinh: 327 tons.

With the current higher price level than previous years, along with the assessment that Vietnam's pepper exports will continue to receive price support in the coming time, farmers in localities across the country tend to replant this once-famous "black gold" crop. Accordingly, many farming households with old pepper gardens have boldly invested in new planting or expanding the area compared to before.

At the end of last week's trading session, the International Pepper Community (IPC) listed Lampung black pepper price (Indonesia) at 6.794 USD/ton; Brazilian black pepper price ASTA 570 at 6.400 USD/ton; Kuching black pepper price (Malaysia) ASTA at 8.700 USD/ton.

Muntok white pepper price 9.302 USD/ton; Malaysian ASTA white pepper price is at 11.200 USD/ton.

Vietnam black pepper price is trading at 6.500 USD/ton for 500 g/l type; type 550 g/l at 6.800 USD/ton; White pepper price is at 9.500 USD/ton.

IPC commented that the pepper market last week continued to have mixed reactions. Domestic and international Indian pepper prices continued to be reported with a downward trend in the past 3 weeks. When the Indonesian Rupiah strengthened against the USD, it helped the country's pepper prices increase again.

A 75-YEAR-OLD WAYANAD FARMER'S INNOVATION JOURNEY

October 04, 2024 <https://www.thehindu.com/>



Alanchery Balakrishnan, a veteran farmer from Kammana in Wayanad, has achieved another feather in his cap with an innovative turmeric variety. The farmer was recently granted a patent for this newly developed turmeric variety called '916' from the Protection of Plant Varieties and Farmers' Rights Authority under the Government of India.

Mr. Balakrishnan have earlier made notable achievements in pepper cultivation too, with developing and patenting different variants, including Ashwathi and Suvarna varieties.

The 75-year-old farmer chose to follow his passion for farming after completing his SSLC and decades later, he is cultivating not only crops but also a legacy of achievements in the agricultural sector.

Mr. Balakrishnan found the mother plant of 916 turmeric rhizome accidentally around 10 years ago. While tending to his garden, the farmer noticed that one specific type of turmeric yielded not only a higher quantity but also had a more vibrant golden hue compared to its counterparts. According to Mr. Balakrishnan, he let the flowers of the plant bloom and got nearly 30 seeds from the mother plant. He later sowed them, and almost all the seeds germinated. Mr. Balakrishnan's experimentation bore fruit as he was able to harvest over a kilogramme of rhizomes from just one plant with the same characteristics as the mother plant.

With the name 916 attached to his turmeric, Mr. Balakrishnan sought formal recognition for his creation from the Protection of Plant Varieties and Farmers' Rights Authority. His journey for acknowledgement was a long seven-year quest

that culminated in the award of a 15-year patent for the turmeric variety. "This recognition is a great inspiration for me," Mr. Balakrishnan told The Hindu.

The farmer is currently awaiting a patent for his latest creation, 'Preethi' pepper variety. He is also actively preserving 12 native varieties of Wayanad pepper, including Karimkotta, Valenkotta, and Kalluvalankotta, among others.

Mr. Balakrishnan was bestowed with the Farmer Scientist Award from Kerala Agricultural University in 2008, followed by the National Agricultural Award from the National Innovation Foundation in 2009. In 2023, he was also honoured by the State Biodiversity Board for his efforts in plant conservation.

AGRICULTURE DRONE PILOTS IN HIGH DEMAND AS JOBS TAKE FLIGHT

Oct 15, 2024 <https://timesofindia.indiatimes.com/>

Youth in Telangana and Andhra Pradesh are increasingly finding lucrative opportunities as agricultural drone pilots, earning up to Rs 60,000 a month by spraying pesticides on farmlands. This surge in demand for drone pilots comes amid a significant shortage across India. Reports indicate that while there are around 24,000 registered drone pilots in the country, the actual requirement is far higher, running into lakhs.

V Prem Kumar, co-founder and CEO of Hyderabad-based Marut Drones, emphasised this growing gap between supply and demand.

"Currently, India has 1 lakh drones in operation, but by 2027, that number is expected to rise to 1 million across various industries. Despite this growth, we face a serious shortage of skilled drone pilots," he said. Under the Directorate General of Civil Aviation's (DGCA) Drone Rules 2021, anyone flying small to medium-sized commercial drones must hold a remote pilot certification and a license. Each drone is assigned a unique serial number, which can be verified on the DGCA portal. However, Prem Kumar pointed out that many drones in operation lack these numbers. "The number of drones without serial

numbers could be five to ten times more than those registered," he added. To meet the growing demand, Marut Drones and other companies have begun working with service providers to scale up operations. "Agriculture, in particular, is offering vast potential, with lakhs of drones needed regularly for various tasks," Prem Kumar added.

In Hyderabad, several drone training academies have emerged, including the Marut Drone Academy, which has partnered with Professor Jayashankar Telangana State Agricultural University (PJTSAU). Other institutions include the govt-run Telangana Academy, India Drone Academy, and Dronacharya, a North India-based organisation.

Prem Kumar highlighted that the training programmes focus on empowering farmers, women self-help groups (SHGs), farmer producer organisations (FPOs), young farmers, and agriculture graduates. "We are equipping them with the skills to adopt drone technology in agriculture," he said. So far, over 700 pilots, including 150 women from SHGs, have completed the training.

The seven-day training module covers drone aviation, advanced operations such as payload installation, spraying systems, and practical flying sessions. "Graduates can find employment in a range of sectors, from agriculture and mining to mapping and construction. During peak farming seasons, trained and licensed drone pilots can earn between Rs 60,000 and Rs 70,000 per month," Prem Kumar shared.

These trained pilots invest in drones worth Rs 6 lakh each, and farmers hire them much like they would hire a tractor service. The use of drones has drastically reduced the time taken to spray pesticides — from days to mere hours — while also keeping farmers safe from the harmful effects of pesticide exposure.

As drones continue to revolutionise agriculture, the demand for skilled pilots is only expected to rise further.

വയനാട്ടിലെ '916 മഞ്ഞളിന്' പേറ്റന്റ് തിരക്കും; 15 വർഷത്തേക്കുള്ള പേറ്റന്റ് സ്വന്തമാക്കി കർഷകൻ

Oct 22, 2024 <https://www.etvbharat.com/>



സ്വയം വികസിപ്പിച്ചെടുത്ത '916' മഞ്ഞളിനാണ് പേറ്റന്റ് ലഭിച്ചത്. ഇപ്പോൾ പുതിയതായി വികസിപ്പിച്ചെടുത്ത 'പ്രീതി' എന്ന കുരുമുളക് ഇനത്തിന്റെ പേറ്റന്റിനായി

കാത്തിരിക്കുകയാണ് ബാലകൃഷ്ണനിപ്പോൾ.പത്താംക്ലാസ് പൂർത്തിയാക്കിയശേഷം സ്വന്തം ഇഷ്ട പ്രകാരം മുഴുനീള കർഷകനായതാണ് വയനാട് മാനന്തവാടിക്കടുത്തുള്ള കമ്മന, അമ്പിളി നിലയത്തിലെ ആലഞ്ചേരി ബാലകൃഷ്ണൻ. 75-ാം വയസിലും കൃഷിയിൽ നിറഞ്ഞുനിൽക്കുന്ന ബാലകൃഷ്ണൻ ഇപ്പോൾ അംഗീകാര നിറവിലാണ്. സ്വയം വികസിപ്പിച്ചെടുത്ത '916' മഞ്ഞളിന് പേറ്റന്റ് കിട്ടിയ സന്തോഷത്തിലാണ് അദ്ദേഹം. ബാലകൃഷ്ണന്റെ തോട്ടത്തിൽ നട്ട മഞ്ഞൾ പറിച്ചുനോക്കിയപ്പോൾ ഒരു ചുവടിൽനിന്ന് കൂടുതൽ വിളവും മറ്റു മഞ്ഞൾ കടകളെ അപേക്ഷിച്ച് കൂടുതൽ സ്വർണ്ണ വർണ്ണവും ശ്രദ്ധയിൽപ്പെട്ടു. ഒരു വർഷം മഞ്ഞളൊന്നും പഠിക്കാതെ നിന്നപ്പോൾ ചെടി പൂവിട്ടു. പൂക്കൾക്കിടയിൽ വിത്തുണ്ടാവുമെന്ന് മനസിലാക്കിയ ബാലകൃഷ്ണൻ ഇവ

ശേഖരിച്ച് പാകി മുളപ്പിച്ച് പരീക്ഷണം നടത്തി. ഇങ്ങനെ നട്ട ഒരു ചുവടിൽനിന്ന് ഒന്നരക്കിലോയിലധികം മഞ്ഞൾ ലഭിച്ചതായി ബാലകൃഷ്ണൻ പറഞ്ഞു.

സ്വന്തമായി വികസിപ്പിച്ചെടുത്ത മഞ്ഞളിന് '916' എന്നാണ് ബാലകൃഷ്ണൻ പേരിട്ടത്. ഇതിന്റെ കൂടുതൽ പ്രചാരത്തിനും മറ്റുമായി ഭാരതസർക്കാരിന് കീഴിലുള്ള പ്രൊട്ടക്ഷൻ പ്ലാന്റ് വെറൈറ്റിസ് ആൻഡ് ഫാർമേഴ്സ് റെഗുലേഷൻ അതോറിറ്റിക്ക് അപേക്ഷ നൽകി കാത്തിരിക്കുകയായിരുന്നു. ഏഴു വർഷമായുള്ള കാത്തിരിപ്പിനൊടുവിലാണ് ബാലകൃഷ്ണന്റെ '916' മഞ്ഞളിന് 15 വർഷത്തെ പേറ്റന്റ് ലഭിച്ചത്. അംഗീകാരം ലഭിച്ചതിൽ ഏറെ സന്തോഷമുണ്ടെന്നും ഇത് കൂടുതൽ പ്രചോദനമാവുമെന്നും ബാലകൃഷ്ണൻ പറഞ്ഞു.



സ്വന്തമായി കുരുമുളക് വള്ളികൾ വികസിപ്പിച്ചും ബാലകൃഷ്ണൻ നേരത്തേ മാതൃക തീർത്തതാണ്. അശ്വതി, സുവർണ ഇനങ്ങളാണ് വികസിപ്പിച്ചെടുത്തത്. ഇവയ്ക്കും പേറ്റന്റ് ലഭിച്ചിട്ടുണ്ട്. പുതിയതായി വികസിപ്പിച്ചെടുത്ത 'പ്രീതി' എന്ന ഇനത്തിന്റെ പേറ്റന്റിനായി കാത്തിരിക്കുകയാണിപ്പോൾ.

തനി വയനാടൻ കുരുമുളക് ഇനങ്ങളായ കരിംകൊട്ട, വാലൻകൊട്ട, കല്ലുവാലൻകൊട്ട, കറുത്തവാലൻകൊട്ട, കല്ലുവള്ളി, ചെറുവള്ളി (ഒന്ന്, രണ്ട്), ഉതിരൻകൊട്ട,

ഉപ്പുതിരൻകൊട്ട, വയനാടൻ ബോൾട്ട്, അരിക്കൊട്ട, മൂലന്തേരി, ഐന്തിരിയൻ തുടങ്ങി 12 ഇനങ്ങൾ ബാലകൃഷ്ണൻ സംരക്ഷിക്കുന്നുണ്ട്.

2008 ൽ കേരള കാർഷിക സർവകലാശാലയുടെ കർഷക ശാസ്ത്രജ്ഞ അവാർഡും 2009ൽ നാഷണൽ ഇനവേഷൻ ഫൗണ്ടേഷൻ്റെ ദേശീയ കർഷക അവാർഡും ബാലകൃഷ്ണനെ തേടിയെത്തി. 2023ൽ സംസ്ഥാന ജൈവവൈവിധ്യ ബേർഡിൻ്റെ സസ്യസംരക്ഷണത്തിനുള്ള പുരസ്കാരവും ലഭിച്ചു. ഭാര്യ രുക്മിണിയും ബാലകൃഷ്ണൻ്റെ കാർഷിക പ്രവർത്തനങ്ങൾക്കൊപ്പം സജീവമായി രംഗത്തുണ്ട്.

ഇറക്കി-കയറുമതിയിൽ കുരുമുളകിന് ഭൂതവാട്ടം; ഒരു മാസം കൊണ്ട് ഇടിഞ്ഞത് 34 രൂപ

22 oct, 2024 <https://dhanamonline.com/>



അഞ്ച് ആഴ്ച കൊണ്ട് കുരുമുളകു വില ഇടിഞ്ഞത് കിലോഗ്രാമിന് 34 രൂപയോളമാണ്. കഴിഞ്ഞ ആഴ്ചയിൽ 11 രൂപയാണ് വില ഇടിഞ്ഞത്. കഴിഞ്ഞ രണ്ടാഴ്ചയ്ക്കിടെ കിലോയ്ക്ക് 19 രൂപയോളമാണ് കുരുമുളകിന് കുറഞ്ഞത്.

സൗത്ത് ഏഷ്യൻ ഫ്രീ ട്രേഡ് (SAFTA) ഉടമ്പടിയുടെ ഭാഗമായി 8 ശതമാനം തീരുവയിൽ ശ്രീലങ്കയിൽ നിന്ന് ഇറക്കുമതി ചെയ്ത കുരുമുളക് വൻതോതിൽ എത്തിയതാണ് വിലയിടിവിനുള്ള പ്രധാന കാരണമെന്ന് കർഷകർ പറയുന്നു.

കൊച്ചിയിൽ അൺഗാർബിൾഡിന് 627 രൂപയും ഗാർബിൾഡിന് 647 രൂപയുമാണ് വില. ശ്രീലങ്കൻ കുരുമുളക് ദക്ഷിണേന്ത്യൻ വിപണികളിൽ പോലും വിൽക്കപ്പെടുന്ന സാഹചര്യമാണ് ഉള്ളത്. ഇത് തദ്ദേശീയ കർഷകരിൽ കൂടുതൽ സമ്മർദ്ദമാണ് ചെലുത്തുന്നത്.

ശ്രീലങ്കയിൽ നിന്ന് വൻതോതിൽ ഇറക്കുമതി

ജൂലൈ, ഓഗസ്റ്റ്, സെപ്റ്റംബർ മാസങ്ങളിൽ ശ്രീലങ്കയിൽ നിന്നുള്ള മൊത്തം കുരുമുളക് ഇറക്കുമതി 10,433 ടൺ ആണ്. ശ്രീലങ്കയിൽ കുരുമുളക് ഉൽപ്പാദനം 25,000 ടണ്ണിനു മുകളിലായി വർദ്ധിച്ചിട്ടുണ്ടെന്ന് ഇന്ത്യൻ പെപ്പർ ആൻഡ് സ്പൈസസ് ട്രേഡ് അസോസിയേഷൻ പറയുന്നു. തങ്ങളുടെ അധിക സ്റ്റോക്ക് ഇന്ത്യൻ വിപണിയിൽ വിറ്റഴിക്കാനാണ് ശ്രീലങ്ക ശ്രമിക്കുന്നത്.

അതേസമയം ശ്രീലങ്കൻ കുരുമുളകിന് ഗുണ നിലവാരം കുറവാണെന്ന് ഇടുക്കി നെടുങ്കണ്ടത്തെ കുരുമുളക് കർഷകനായ ജോജി തോമസ് പറയുന്നു. സാന്ദ്രത കുറവ്, ഉയർന്ന ഈർപ്പം, ഫംഗസിന്റെ സാന്നിധ്യം തുടങ്ങിയവ ശ്രീലങ്കൻ കുരുമുളകിൽ ഉണ്ട്. ആഭ്യന്തര കർഷകരെ നേരിട്ട് ബാധിക്കുന്നതിനാൽ ഇത്തരം ഇറക്കുമതി നിയന്ത്രിക്കണമെന്നാണ് കർഷകർ ആവശ്യപ്പെടുന്നത്.

വിയറ്റ്നാം, ശ്രീലങ്ക, ഇന്ത്യ തുടങ്ങിയ രാജ്യങ്ങളാണ് കുരുമുളകിന്റെ പ്രധാന ഉൽപ്പാദകർ. കേരളത്തിൽ കുരുമുളക് കൂടുതലായും ഉൽപ്പാദിപ്പിക്കപ്പെടുന്നത് ഇടുക്കി, വയനാട് ജില്ലകളിലാണ്. കേന്ദ്ര സർക്കാർ അവശ്യ സാധനങ്ങളുടെ പട്ടികയിൽ കുരുമുളകിനെയും ഉൾപ്പെടുത്തിയതിനാൽ ഒരു പരിധിക്ക് മുകളിൽ കുരുമുളക് വില ഉയരാനും തടസമുണ്ട്.

ജനുവരി വരെ വിലയിൽ ചാഞ്ചാട്ടത്തിന് സാധ്യത

കിലോഗ്രാമിന് 620 രൂപ വരെ വില താഴ്ന്ന ശേഷം നിലവിൽ 630 രൂപയ്ക്കടുത്താണ് ഇടുക്കിയിൽ കർഷകരിൽ നിന്ന് കുരുമുളക് ശേഖരിക്കുന്നത്. ജനുവരിയോടു കൂടി വില 700 രൂപയ്ക്കടുത്തെത്താനും എന്ന പ്രതീക്ഷയിലാണ് തങ്ങളെന്ന് നെടുങ്കണ്ടത്തെ കർഷകനായ ഉപ്പുട്ടിൽ തങ്കച്ചൻ പറയുന്നു. 620-700 രൂപ നിലവാരത്തിൽ കുരുമുളക് ജനുവരി വരെ നിൽക്കാനാണ് സാധ്യത. രാജ്യ വ്യാപകമായി ഇത്തവണ കുരുമുളകിന്റെ ഉൽപ്പാദനം വളരെ കുറവാണ്. ഇത് ജനുവരി കഴിയുമ്പോൾ വില 700-750 രൂപ നിലവാരത്തിൽ എത്താൻ ഇടയാക്കുമെന്ന പ്രതീക്ഷയും കർഷകർ പങ്കുവെക്കുന്നു.

ശ്രീലങ്കയിൽ നിന്ന് കുരുമുളക് ഇറക്കുമതി ചെയ്ത്, ഇന്ത്യയിൽ നിന്ന് വീണ്ടും കയറ്റുമതി ചെയ്യുന്നതിനു വേണ്ടിയാണ് വൻതോതിൽ രാജ്യത്തേക്ക് കുരുമുളക് എത്തിക്കുന്നത്. ഇറക്കുമതി നയത്തിലെ പഴുതുകളാണ് പുനർ കയറ്റുമതിക്ക് വേണ്ടി ഇറക്കുമതി ചെയ്ത കുരുമുളകിനെ ആഭ്യന്തര വിപണിയിലേക്ക് കടക്കാൻ സഹായിക്കുന്നതെന്ന് ഇന്ത്യൻ പെപ്പർ ആൻഡ് സ്പൈസ് ട്രേഡേഴ്സ് ഗ്രോവേഴ്സ് കൺസോർഷ്യം ആരോപിച്ചു. ആഭ്യന്തര കർഷകരുടെ താൽപ്പര്യത്തെ മോശമായി ബാധിക്കുന്നതിനാൽ ഇത്തരം ഇറക്കുമതി നിയന്ത്രിക്കാൻ കേന്ദ്ര സർക്കാർ തയാറാകണമെന്നും കൺസോർഷ്യത്തിന്റെ കേരള ഘടകം ആവശ്യപ്പെട്ടു.

ഇറക്കുമതി ചെയ്ത കുരുമുളക് വീണ്ടും കയറ്റുമതി ചെയ്യുന്നതിന് ഡി.ജി.എഫ്.ടി (ഡയറക്ടറേറ്റ് ജനറൽ ഓഫ് ഫോറിൻ ട്രേഡ്) ആറ് മാസത്തെ സമയമാണ് നൽകുന്നത്. ഇറക്കുമതി-കയറ്റുമതി നയത്തിലെ പ്രധാന അപാകതകളിലൊന്നാണ് ഇത്. കേരളത്തിന്റെ പ്രധാന നാണ്യവിലയായ കുരുമുളക് പോലുള്ള ഇനത്തെ വളരെ പ്രതികൂലമായാണ് ഇത് ബാധിക്കുന്നതെന്നും കർഷക സമൂഹം പറയുന്നു.

ദിവസം എട്ടു പേരുടെ കൃഷിപ്പണി ചെയ്യും; യന്ത്രത്തൊഴിലാളിയെ നിർമ്മിച്ചു കർഷകൻ; പിന്നാലെ ഒരു ലക്ഷം രൂപ അവാർഡ്

17 Oct, 2024 <https://www.manoramaonline.com/>



കൃഷിപ്പണിക്കു തൊഴിലാളികളെ കിട്ടാനില്ലാത്തത് എല്ലാവരെയുംപോലെ പാലക്കാട് ചിറ്റൂർ കല്യാണപ്പേട്ടയിലെ കർഷകൻ സദാശിവന്റെയും പ്രശ്നമായിരുന്നു. പക്ഷേ, അതിന്റെ പേരിൽ കൃഷി ഉപേക്ഷിക്കാനൊന്നും സദാശിവൻ തുനിഞ്ഞില്ല. പകരം സ്വന്തമായൊരു യന്ത്രത്തൊഴിലാളിയെത്തന്നെ നിർമ്മിച്ചു. മാത്രമല്ല, ഈ കണ്ടെത്തലിന് ഒരു ലക്ഷം രൂപയുടെ സർക്കാർ പുരസ്കാരവും നേടി.

ഇന്ന്, സദാശിവന്റെ കൃഷിയിടത്തിൽ ദിവസം 7-8 തൊഴിലാളികൾ ചെയ്യുന്ന ജോലി ഈ യന്ത്രത്തൊഴിലാളി ചെയ്യുന്നു. യന്ത്രം പ്രവർത്തിപ്പിക്കാൻ സദാശിവനോ പ്ലസ് ടു വിദ്യാർഥിയായ മകൻ മാധവോ മതി. ഒരു ദിവസം യന്ത്രം പ്രവർത്തിപ്പിക്കാൻ ഇന്ധനച്ചെലവ് 1000 രൂപയിൽ താഴെ മാത്രം. പ്രവർത്തിപ്പിക്കുന്ന ആളുടെ കുലിക്കുകൂടി കണക്കിട്ടാലും 2,200-2,500 രൂപ മാത്രം. അതെ, സദാശിവന്റെ അഗ്രി നാനോ എക്സ്കവേറ്റർ ചില്ലറക്കാരനല്ല.

രണ്ടു പൂവ് നെൽകൃഷിയും മികച്ച വിളവുള്ള 250 തെങ്ങുകളുമുള്ള കൃഷിയിടമുള്ള സദാശിവനു കൃഷിയെക്കാൾ ആവേശമുള്ള കാര്യമാണ് കൃഷിയന്ത്രങ്ങളുടെ രൂപകൽപനയും നിർമ്മാണവും. സാങ്കേതിക പരിശീലനങ്ങളുടെ പിൻബലമില്ലാതെ സദാശിവൻ കർഷകർക്കുവേണ്ടി വികസിപ്പിച്ച യന്ത്രങ്ങൾ പലതുണ്ട്. മകൻ മാധവിനുമുണ്ട് യന്ത്രങ്ങളോട് ആവേശം. സദാശിവൻ വികസിപ്പിച്ച ഒട്ടേറെ യന്ത്രങ്ങളിൽ ഏറ്റവും ഗംഭീരം ഈ കുഞ്ഞൻ മണ്ണുമാന്തിയന്ത്രം തന്നെ.

നാനോ മണ്ണുമാന്തി

കൃഷിപ്പണിയിൽ കൈക്കോട്ടുപണിക്കാർക്കാണ് ഏറ്റവും ക്ഷാമം. തെങ്ങിനും കമുകിനുമൊക്കെ തടമെടുക്കാനും വാഴയ്ക്കു ചാലു കീറാനും ഇഞ്ചിക്കും മഞ്ഞളിനും തടം തയ്യാറാക്കാനും തൊഴിലാളികളെ കിട്ടാനില്ല. കിട്ടിയാൽത്തന്നെ വൈദഗ്ധ്യമുള്ളവർ കുറവ്. ഈ പണികളൊക്കെ വലിയ അധ്വാനമില്ലാതെയും സമയബന്ധിതമായും കർഷകനു സ്വയം ചെയ്യാൻ കഴിയുന്ന ചെറുയന്ത്രമാണ് സദാശിവന്റെ അഗ്രി നാനോ എക്സ്കവേറ്റർ. ചെറു ഹിറ്റാച്ചി പോലുള്ള മണ്ണുമാന്തിയോടാണ് നാനോ എക്സ്കവേറ്ററിനു സാമ്യം. എന്നാൽ വിപണിയിലെ മണ്ണുമാന്തിയുടെ നാലിലൊന്നു വിലയേ സദാശിവന്റെ ഈ യന്തിരനു വരൂ.



സാധാരണ ചെറു മണ്ണുമാന്തിക്ക് ഏതാണ്ട് 27 എച്ച്പിയുള്ള മോട്ടറും 3 ടൺ ഭാരവും വരും. ആ സ്ഥാനത്ത് 5 എച്ച്പി മോട്ടറിൽ പ്രവർത്തിക്കുന്ന, 600 കിലോ ഭാരം മാത്രമുള്ള യന്ത്രമാണ് നാനോ ഏക്സ്കവേറ്റർ. ഹൈഡ്രോളിക് മോട്ടർ സംവിധാനം. ഏഴടി നീളം, മൂന്നേക്കാൽ അടി മാത്രം വീതി. അതുതന്നെയാണ് അതിന്റെ മെച്ചവും. വലുപ്പക്കൂടുതൽ മൂലം സാധാരണ മണ്ണുമാന്തികൾക്കു കടന്നുചെല്ലാൻ കഴിയാത്ത പുരയിടങ്ങളിൽ ഈ കുഞ്ഞൻ അനായാസമെത്തും. മറ്റ് എസ്കവേറ്ററുകൾ ട്രാക്ക് ചെയിനിൽ സഞ്ചരിക്കുമ്പോൾ പവർഡ്രിവിന്റെയും പവർ വീഡറിന്റെയും ടയറുകളാണ് സദാശിവന്റെ നാനോ

യന്ത്രത്തിനുള്ളത്. അതിനാൽ വിളകൾക്കിടയിലൂടെ എളുപ്പത്തിൽ ഓടിച്ച് പണി ചെയ്യാം. 9 ഇഞ്ച് ആണ് ബക്കറ്റ് വലുപ്പം. ഒരു മീറ്റർ ആഴത്തിൽ വരെ മണ്ണിളക്കാം, കുഴിയെടുക്കാം. മണ്ണു വടിച്ചു നീക്കിക്കൊണ്ടുപോകാനുള്ള സൗകര്യവുമുണ്ട്. 360 ഡിഗ്രി തിരിയില്ലെങ്കിലും എല്ലാ കൃഷിപ്പണികൾക്കും ഉതകുംവിധം യന്ത്രത്തിന്റെ കൈ ഇരുവശത്തേക്കും തിരിയും. മൂന്നോട്ടു പിന്നോട്ടും ഓടിക്കാനുള്ള പെഡൽ പ്രവർത്തിപ്പിക്കാനും വളരെ എളുപ്പം.

യന്ത്രം ഒരു മണിക്കൂർ പ്രവർത്തിപ്പിക്കാൻ ഒരു ലീറ്ററിൽ താഴെ മാത്രം ഡീസലേ വേണ്ടിവരും. നാലര ലക്ഷം രൂപയോളം മുടക്കു വരുന്ന യന്ത്രം സ്വന്തമായി വാങ്ങിയാൽ മിക്ക കൃഷിപ്പണികളും നമുക്കു സ്വന്തമായി ചെയ്യാം. യന്ത്രം കണ്ട് താൽപര്യപ്പെട്ട് പലരും നിർമ്മിച്ചു നൽകാൻ ആവശ്യപ്പെടുന്നുണ്ടെങ്കിലും 3 മാസത്തോളമെടുക്കും ഒരേണ്ണം നിർമ്മിക്കാനെന്നു സദാശിവൻ പറയുന്നു.