

ICAR - Central Coastal Agricultural Research Institute in Print Media



भाकृअनुप - केंद्रीय तटीय कृषि अनुसंधान संस्थान
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ICAR-Central Coastal Agricultural Research Institute



Gomantak Dated 10-01-2023

कृषी शास्त्रज्ञ त्रिवेश मयेकर यांचे यश : पॉलिकल्चर आणि शाश्वत पद्धतीने मत्स्यशेती

मत्स्यशेतीतून मिळाला साडेपाच किलो वजनाचा 'चणक'

अनिल पाटील

पणजी, ता. ९ : एकात्मिक पॉलिकल्चर आणि शाश्वत पद्धतीने केलेल्या मत्स्य शेतीत चक्क साडेपाच किलोचा चणक मासा सापडला असून इतक्या मोठ्या प्रकारची ही पहिलीच नोंद आहे, अशी माहिती आयसीएआरच्या केंद्रीय कृषी संशोधन केंद्राचे शास्त्रज्ञ त्रिवेश मयेकर यांनी दिली आहे.

रुचकर चव आणि टिकाऊपणा यामुळे मोठी व्यावसायिक

मागणी असलेल्या चणक माशाची पॉलिकल्चर आणि शाश्वत पद्धतीने शेती केल्यास त्याचा शेतकऱ्यांना मोठा फायदा होत आहे. जुने गोवे येथील आयसीएआरच्या केंद्रीय कृषी संशोधन केंद्रात या पद्धतीने मत्स्य शेती केली जाते. यामध्ये अशा प्रकारच्या शेतीमध्ये वाढलेला चणक माशाचे वजन तब्बल साडेपाच किलो भरले आहे. इतका मोठ्या मासा सापडण्याची ही पहिलीच वेळ असून शेतकऱ्यांनी अशा पद्धतीने शेती केल्यास त्यांच्या उत्पादनात आणि उत्पन्नात वाढ होईल असे मत शास्त्रज्ञ मयेकर यांनी व्यक्त

केले आहे. समुद्रात नैसर्गिक दृष्ट्या या माशाची मोठी वाढ होऊ शकते मात्र गोड्या पाण्याच्या तलावांमध्ये कृत्रिम खाद्यावर हे मासे इतके वाढू शकत नाहीत.

या संशोधन केंद्रामध्ये गेल्या दोन वर्षांपासून अधिक काळ चणक मासे उत्पादनावर प्रयोग केले जात आहेत. त्यामध्ये अत्यंत चांगल्या पद्धतीचे रिझल्ट्स मिळाले आहेत. पश्चिम किनारपट्टीतील सर्वच राज्यांमध्ये चणक मासा मिळतो. मुबलक मांस, कमी काटे आणि रुचकर चव यामुळे या माशाला मोठी व्यावसायिक मागणी आहे.



'चणक' माशासह शास्त्रज्ञ त्रिवेश मयेकर.

पॉलिकल्चरकडे वळा

मत्स्य उत्पादनामध्ये कृत्रिम खाद्याऐवजी पॉलीकल्चर पद्धतीने मासे वाढविल्यास मोठे उत्पन्न मिळते हे प्रयोगांना सिद्ध झाले आहे. यात तिलापिया, कटला, रोहू, कॉमन क्रांप मासे एकत्र वाढविले जातात. चणक मांसाहारी असल्याने कृत्रिम खाद्याऐवजी हे नैसर्गिक खाद्य मिळते आणि त्याची वाढ चांगली होते.

'चणक'चे उत्पादन वाढवा

माशांमध्ये कोळंबीला मोठी मागणी असते. यासाठी पारंपरिक मत्स्य उत्पादक कोळंबीला प्राधान्य देतात. मात्र एकूण उत्पादनाच्या दृष्टिकोनातून चणक मासा कोळंबीला चांगला पर्याय आहे. योग्य पद्धतीने काळजी घेतल्यास चणक ५ ते ६ किलोपर्यंत वाढतो, हे आता सिद्ध झाले आहे. त्यामुळे शेतकऱ्यांनी या तंत्रज्ञानाचा वापर करून मत्स्य शेती करावी, असे आवाहन शास्त्रज्ञांनी केले आहे.

Times of India
Dated 23-01-2023

ICAR: Ornamental fishery lucrative livelihood option

TIMES NEWS NETWORK

Panaji: The ICAR-Central Coastal Agricultural Research Institute (ICAR-CCARI) recently highlighted the potential of ornamental fish culture as a livelihood option.

The ICAR-CCARI held a hands-on training session for 27 fish farmers during which they were informed about breeding and larval rearing of ornamental fish, tank fabrication, tank set up and maintenance, and ornamental fish feed preparation.

The farmers were also taken on a visit to the institute's aquarium and aquaculture farm.

"There is full technical support from the institute for fisheries development activities for Goa," said director, ICAR-CCARI, Parveen Kumar.

Section in-charge, animal and fishery science, Shirish Narnaware, emphasised on the role of local communities and self-help groups in promoting ornamental fish culture as an income source.

Krishak Jagat (Online) Dated 04-02-2023

ICAR-CCARI, ABI (AGNI) ने गोवा में युवा कृषि-उद्यमी सम्मेलन का आयोजन किया

04 फरवरी 2023, नई दिल्ली: ICAR-CCARI, ABI (AGNI) ने गोवा में युवा कृषि-उद्यमी सम्मेलन का आयोजन किया - आईसीएआर सेंट्रल कोस्टल एग्रीकल्चरल रिसर्च इंस्टीट्यूट का एग्री बिजनेस इनक्यूबेशन (एबीआई) केंद्र, AGNI (इनक्यूबेशन के माध्यम से स्टार्टअप के पोषण के लिए कृषि आधारित विकास अवसर) ने गोवा में 31 जनवरी से 1 फरवरी 2023 तक दो दिवसीय "यंग एग्री एंटरप्रेन्योर कॉन्क्लेव 2023" का आयोजन किया।

यंग एग्री एंटरप्रेन्योर्स कॉन्क्लेव की परिकल्पना प्रज्वलित युवा दिमाग (40 वर्ष से कम आयु) से सर्वश्रेष्ठ कृषि स्टार्ट अप विचारों की पहचान करने के लिए की गई थी ताकि उन्हें AGNI से ऊष्मायन समर्थन के माध्यम से आगे बढ़ाया जा सके।

कॉन्क्लेव का उद्घाटन श्रीमती स्वितिका सचान आईएएस निदेशक (उद्योग व्यापार और वाणिज्य निदेशालय) गोवा सरकार द्वारा किया गया था। उन्होंने युवाओं के बीच कृषि उद्यमिता को बढ़ावा देने में AGNI के प्रयासों की सराहना की।

शिक्षा जगत और उद्योग जगत के प्रतिष्ठित पैनलिस्टों द्वारा स्टार्ट अप के विचारों का समालोचनात्मक मूल्यांकन किया गया। सर्वश्रेष्ठ तीन स्टार्टअप विचारों को AGNI ट्रॉफी से सम्मानित किया गया और शीर्ष 10 को AGNI में ऊष्मायन शुल्क के लिए एक वर्ष की छूट से सम्मानित किया गया। ICAR CIRCOT मुंबई के RAFTAAR ABI (RABI) की एक टीम ने कॉन्क्लेव के दौरान आइडिया और सीड स्टेज स्टार्टअप सपोर्ट के लिए AGNI के साथ भविष्य के सहयोग के लिए कार्यक्रम में भाग लिया।

कॉन्क्लेव के दौरान, डॉ. प्रवीण कुमार, निदेशक, आईसीएआर-सीसीएआरआई, गोवा ने आश्वासन दिया कि AGNI उद्यमिता के माध्यम से कृषि में युवाओं को बनाए रखने के बड़े लक्ष्य के साथ इन विचारों को उद्योगों में बदलने के लिए हर संभव प्रयास करेगी।

कॉन्क्लेव का समन्वय डॉ. मथाला जूलियट गुप्ता, वरिष्ठ वैज्ञानिक और पीआई और डॉ. आर. सोलोमन राजकुमार, वरिष्ठ वैज्ञानिक और अग्नि के सह-पीआई द्वारा किया गया था।

Times of India Dated 23-02-2023

At Barcem, 50 tribal women learn about value-added millets

TIMES NEWS NETWORK

Panaji: A hands-on training programme to prepare various value-added products of millets such as 'ragi idli', 'jowar idli', 'little millet upma' and 'finger millet barfi' was held for 50 women of the tribal farming community of Barcem, Quepem.

The programme was organised at the ICAR-CCARI (Indian Council of Agricultural Research- Central Coastal Agricultural Research Institute).

The women belonged to 10 self-help groups (SHGs). Under the scheduled tribe component (STC), the beneficiary farm women were also given the required utensils and accessories such as idli cookers, kadais, frying spoons, measuring cups and hand gloves.

The programme was organised at the Indian Council of Agricultural Research-Central Coastal Agricultural Research Institute. The women belonged to 10 self-help groups. Under the scheduled tribe component, the beneficiary farm women were also given the required utensils and accessories such as idli cookers, kadais, frying spoons, measuring cups and hand gloves

Experts from the institute guided the beneficiaries and trainees on how initiatives can be taken up to form SHG-based cultivation and make value additions to millets.

The experts urged the beneficiaries to utilize the given inputs to ma-

ke value additions to millets produced by themselves.

Collaborative efforts of the SHGs and the institute were discussed to promote cultivation, processing and marketing of millets by the beneficiaries as part of community farming.

Another training programme was held for 20 students of Goa College of Home Science, Panaji.

Dr Parveen Kumar, director, ICAR-CCARI, Goa, highlighted the objectives of celebrating the International Year of Millets, 2023, and the importance of millets as climate-smart crops which require very low inputs. Dr Mahesh Pai, the principal of Goa College of Home Science, called for initiating more collaborations with ICAR-CCARI and ICAR-KVK, North Goa, for human resource development.

Times of India (Online) Dated 01-04-2023

Multimedia millets expo till Mar 3

TNN / Mar 1, 2023, 04:44 IST



Panaji: A multimedia exhibition on International Year of Millets to educate visitors about the importance of millets and encourage inclusion of millets in daily diets is going to be open to public till March 3 at KTC, Panaji. The ICAR-Central Coastal Agricultural Research Institute (CCARI) have set up a stall at KTC where visitors can see live samples of millets and interact with subject experts on millets.

"Millets require very few inputs and consume very little water making them easy to grow for farmers. Millets can help fight a variety of lifestyle diseases while providing the body with a large amount of nutrition," said Praveen Kumar, director, ICAR-CCARI. He credited the inclusion of millets in his diet for his weight loss and improved control of blood sugar levels.

The exhibition was inaugurated by North Goa superintendent of Police Nidhin Valsan who is a cancer survivor and a triathlon athlete. He said that millets played a large part of his health turnaround. Sharing his own story on millets, he said that millets were key in his training for the recent Ironman triathlon which the officer successfully completed. "For the last ten months my dinner and breakfast have comprised of millet preparations. Ragi malt has been my dinner every day since I first made the switch and my strength and endurance have improved remarkably without any weight gain," he said.

Goan Varta Dated 21-03-2023

Pernem, Bicholim at risk of severe soil loss

UNION MINISTER FOR AGRICULTURE REPLIES TO UNSTARRED QUESTION BY FALEIRO

THE GOAN NETWORK

MARGAO

An assessment conducted by the ICAR-National Bureau of Soil Survey & Land Use Planning on soil fertility in Goa has shown that Pernem and Bicholim talukas have extremely severe potential soil losses, accounting for 4.1 per cent area of the State.

Comparatively, parts of Sattari, Salcete, Sanguem, Quepem and Canacona talukas have moderate soil erosion and moderately severe potential soil losses accounting for 8.8 and 8.9 per cent respectively in the State.

The talukas of Pernem, Bardez, Bicholim, Sattari, Tiswadi, Ponda, Quepem and Sanguem have severe and very severe potential losses accounting for an area of 26.9 per cent and 22 per cent of the State, respectively.

Union Minister for Agri-

Centre says salt-tolerant rice varieties developed to protect khazan lands

MARGAO: Asserting that the State government is implementing a scheme for the protection of notified khazan lands by taking up repairs and strengthening of bunds to protect the khazan lands from damages due to salinity ingress, Union Agriculture Minister Narendra Singh Tomar said the ICAR-Goa has developed salt-tolerant rice varieties, namely, Goa Dhan 1, Goa Dhan 2, Goa Dhan 3 and Goa Dhan 4 for salt-affected soils of Goa.

He further told the Rajya Sabha that the ICAR-Central Coastal Agricultural Research Institute (CCARI) has developed Goa Bio 1, Goa Bio 2, CCARI Bio 3, and CCARI Bio 4 for improving the biological activity of different types of soils to promote plant growth and improve plant health.

culture and Farmers Welfare, Narendra Singh Tomar stated the assessment report to the Rajya Sabha to an unstarred question tabled by Rajya Sabha MP Luizinho Faleiro.

The Minister informed that

the Indian Council of Agricultural Research (ICAR)- Central Coastal Agricultural Research Institute Goa has studied soil health degradation and management from important horticultural crops like Cashew,

Mango and Coconut.

"On average, soil loss from Cashew, Mango and Coconut cropping systems were 24, 12.6 and 10.5 tonnes/hectare/year, respectively. The runoff loss as a percentage of rainfall in Cashew, Mango and Coconut cropping systems were 23%, 32.1% and 23.8%. The nutrient loss from Cashew, Mango and Coconut cropping systems were 35.8, 76.4 and 62.1 kg nitrogen (N)/hectare, 1.9, 13.8 and 10.9 kg phosphorus (P)/hectare (P) and 52,33.6 and 19.3 kg potassium (K) hectare, respectively," the reply stated.

The Minister gave this reply in response to an unstarred question tabled by Faleiro seeking to know whether any soil health management studies are conducted in Goa with respect to major crops of rice, Coconut, Cashew, areca nuts, mango, spices etc. the findings of soil degradation in Goa and

whether there are any recommended technologies to remedy the invasion of saline water, soil erosion, physical degradation, chemical degradation, biological degradation etc.

The Minister further said that the Central government is implementing a National Project on the Management of Soil Health & Fertility (Soil Health Card/Soil Health Management), now, merged as the Soil Health & Fertility component of the Rashtriya Krishi Vikas Yojana (RKVY) scheme through the State government.

"The main objective of the scheme is to assist states in promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilizers including secondary and micronutrients in conjunction with organic manures and bio-fertilizers for improving soil health and its productivity," he said.

Navhind Times Dated 21-03-2023

'CCARI-Goa has developed salt-tolerant varieties of rice'

Varieties include Goa Dhan 1, Goa Dhan 2, Goa Dhan 3, Goa Dhan 4

Special Correspondent

Panaji

Union Minister for Agriculture and Farmers Welfare Narendra Singh Tomar, on Monday, said that the Central Coastal Agricultural Research Institute (CCARI)-Goa has developed salt-tolerant varieties of rice namely Goa Dhan 1, Goa Dhan 2, Goa Dhan 3 and Goa Dhan 4 for salt-affected soils of Goa.

"The CCARI has also developed Goa Bio 1, Goa Bio 2, CCARI Bio 3, CCARI Bio 4 for improving the biological activity of different types of soils to promote the plant growth and improve the plant health," he added.

Replying to the related question from the Rajya



The CCARI has also developed Goa Bio 1, Goa Bio 2, CCARI Bio 3, CCARI Bio 4 for improving the biological activity of different types of soils to promote the plant growth and improve the plant health"

Narendra Singh Tomar,
Union Minister for
Agriculture and Farmers
Welfare

Sabha member Luizinho Faleiro in the Parliament on Monday, Tomar said that a

package of practices of integrated nutrient management involving Goa Bio-1, a talc-based bio-formulation, and crop establishment methods to improve paddy productivity on the salt-affected soils, has been standardised and disseminated.

"It has also standardised different soil and water conservation measures namely continuous contour trenches with stylosanthes Scabra and Vetiveria Zizanioidesis for cashew crop, continuous contour trenching with vegetative barriers (Vetiveria Zizanioidis) in mango, and circular trenching in coconut to reduce erosion losses and degradation," he added.

The reply of the Union Minister for Agriculture and

Farmers Welfare further informed that the central government is implementing a national project on Management of Soil Health and Fertility (Soil Health Card/Soil Health Management), now, merged as Soil Health and Fertility component of Rashtriya Krishi Vikas Yojana (RKVY) through the state government.

"The main objective of the scheme is to assist states in promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilisers including secondary and micro nutrients in conjunction with organic manures and bio-fertilisers for improving soil health and its productivity," the reply noted.

Tarun Bharat Dated 21-03-2023

काजू, आंबा, नारळ उत्पादनामुळे मातीची धूप

आयसीएआर केंद्राचा निष्कर्ष, तोमर यांची राज्यसभेत माहिती

प्रतिनिधी

पणजी

काजू, आंबा, नारळ या पिकांमुळे गोव्यातील मातीची धूप होऊन नुकसान होते असा निष्कर्ष गोव्यातील आयसीएआर या केंद्रीय कृषी संशोधन केंद्राने काढला आहे. त्यामुळे मातीचा कस कमी होत चालल्याचे निदान करण्यात आल्याची माहिती केंद्रीय कृषीमंत्री नरेंद्रसिंग तोमर यांनी राज्यसभेत दिली आहे.

खासदार लुईझिन फालेरो यांनी गोव्यातील विविध पीक लागवडीमुळे माती परीक्षण करण्यात येऊन तिचे आरोग्य, व्यवस्थापन यावर अभ्यास करण्यात आला आहे काय? अशी विचारणा केली होती. त्यावर उत्तर देताना तोमर बोलत होते. ते म्हणाले की, पावसामुळेही मातीची धूप होते. सत्तरी, सालसेत, सांगे, केपे, काणकोण तालुक्यात काही प्रमाणात मातीची धूप झाल्याचे

आयसीएआरच्या सर्वेक्षणातून समोर आले आहे. पेडणे, बार्देश, डिचोली, तिसवाडी, फोंडा या भागातील मातीचे धुपीमुळे मोठे नुकसान झाल्याचे निदान आयसीएआरने काढले आहे. पेडणे-डिचोलीत ते प्रमाण जास्त असल्याचे आयसीएआरचे म्हणणे आहे, असे तोमर यांनी लेखी उत्तरात नमूद केले आहे.

गोवा आयसीएआरने भाताच्या काही प्रजाती विकसित केल्या असून मातीचा कस तसेच उत्पादन क्षमता वाढावी म्हणून योजना आखल्या आहेत. मातीचे परीक्षण करण्यात येते तसेच त्यांची माहिती शेतकरीवर्गास देण्यात येते. त्याकरीता माती परीक्षण आरोग्य कार्ड दिले जाते व मातीच्या कसाची नोंद ठेवण्यात येते. शिवाय कस वाढावा म्हणून खते वापरण्याची शिफारस केली जाते, असेही तोमर यांनी उत्तरात म्हटले आहे.

Times of India Dated 21-03-2023

'Extremely severe' soil erosion likely in Pernem, Bicholim

TIMES NEWS NETWORK

Margao: An assessment made by ICAR-National Bureau of Soil Survey and Land Use Planning has found extremely severe soil loss potential of over 80 tonne per ha per year in Pernem and Bicholim talukas.

This was revealed in a reply tabled in the Rajya Sabha by the Union minister for agriculture Narendra Singh Tomar to a question by Luizinho Faleiro.

ICAR-National Bureau of Soil Survey and Land Use Planning has prepared the Land Resources Inventory (LRI) of Goa at a scale of 1:10,000 and assessed soil fertility and brought out soil fertility maps and Land Resources Information System (LRIS) Goa mobile app to indicate soil and soil fertility information.

ICAR-Central Coastal Agricultural Research institute, Goa, has studied soil health degradation and management from important horticultural crops like cashew, mango, and coconut.

On an average, soil loss from cashew, mango and coconut cropping systems were 24, 12.6 and 10.5 tonnes per ha per year, respectively.

The run-off loss as percentage of rainfall in cashew, mango and coconut cropping systems were 23%, 32.1% and 23.8%.

The nutrient loss from cashew, mango and coconut cropping systems were 35.8, 76.4 and 62.1 kg nitrogen per ha, 1.9, 13.8 and 10.9 kg phosphorus per ha and 52, 33.6 and 19.3 kg potassium per ha, respectively, the reply stated.

It was informed that the Centre is implementing a national project on management of soil health and fertility through the state government.

The main objective of the scheme, the reply stated, is to assist states in promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilisers in conjunction with organic manures and bio-fertilizers for improving soil health.

PIB Website (<https://pib.gov.in>) Dated 22-03-2023

Ministry of Agriculture & Farmers Welfare



Statement by ICAR-CCARI on Soil and Nutrient loss in major crops of Goa

ICAR-CCARI, Goa has developed technologies for soil and water conservation measures in important crops of Goa, to reduce the soil and nutrient loss

Posted On: 22 MAR 2023 5:30PM by PIB Mumbai

Goa, 22 March 2023

Indian Council of Agricultural Research - Central Coastal Agricultural Research Institute, Goa issued a statement today regarding media reports based on information given by Narendra Singh Tomar, Union Minister of Agriculture and Farmers Welfare in response to an unstarred question by Luizinho Faleiro, Member of Parliament, Rajya Sabha on Soil Health management studies in Goa.

The state of Goa is characterised by its unique undulated topography where the slope of the land varies from 0-280% with an average slope of 14.41%. The state also receives excessive rainfall of more than 3000 mm/year. Soil erosion losses in Goa vary from moderate (< 15 t/ha/year) to extremely severe (> 80 t/ha/year) classes while the national average soil loss in India is 15.59 t/ha/year. The permissible soil loss limit for India is 11.2 t/ha/year. The cultivation of crops like cashew, mango and coconut helps to reduce erosion losses compared to fallow or barren lands.

Based on more than 15 year studies conducted at ICAR-CCARI, Goa, soil erosion losses in cashew, mango and coconut cropping systems were estimated to be 24, 12.6 and 10.5 t/hectare/year, respectively without any conservation practices i.e. control. **The soil erosion losses in these cropping systems are less or close to the national average soil loss.**

To further reduce the soil and nutrient loss ICAR-CCARI, Goa has developed technologies for soil and water conservation measures in important crops of Goa like cashew, mango and coconut based on the long-term studies conducted. Studies on cashew were conducted on 19% slope during 2001-2013.

In cashew, the soil and water conservation measure standardised (continuous contour trenching + vegetative barrier of vetiver grass) reduced the runoff by 44.5%, soil loss by 47% (reduced from 24 to 12.3 t/ha/year) and NPK loss by 60.2% (reduced from 89.7 to 35.7 kg/ha/year) with increased soil organic carbon stock by 140%. Litterfall in cashew which starts during November-December covers the soil surface and acts as a physical barrier to runoff and reduces soil erosion losses. Further, the leaf litter helps to develop a conducive environment for micro-flora and -fauna such as earthworms. Improved organic matter and microbial activities lead to an increased infiltration rate. This will result in improved soil moisture conservation and groundwater recharge. Studies on mango were conducted on 19% slope during 2002-2019. In mango, a soil and water conservation measure of continuous contour trenching + vegetative barrier of vetiver grass (CCT+VB) reduced soil loss by 83% (reduced from 12.6 to 2.15 t/ha) and runoff by 53% than control (reduced from 42.1 to 22.3%). This recommended measure on an average reduced NPK loss by 88.6% over control. Studies on coconut were conducted on 14% slope during 2008-2019. In coconut, circular trenching reduced soil loss and runoff by 76 and 34%, respectively which has reduced the NPK loss by 78.2% over control. The cultivation of crops like cashew, mango and coconut reduces soil erosion however adoption of soil and water technologies developed by ICAR-CCARI further help to reduce soil erosion loss and improve soil health.

continued.....

ICAR - Central Coastal Agricultural Research Institute in Print Media

Soil and nutrient loss in major crops of Goa

Crop	Duration of study	Slope (%)	Soil loss (t/ha/year)			
			Estimated soil loss without crop*	Without any conservation measures i.e. Control	With ICAR-CCARI recommended technology/conservation measures	% reduction in soil loss
Cashew	2001-2013	19	39.89	24.0	12.3	47
Mango	2002-2019	19	28.66	12.6	2.15	83
Coconut	2008-2019	14	12.90	10.5	2.18	76

*According to Goa Bhoomi GeoPortal, ICAR-NBSS&LUP, Nagpur

Crop	Duration of study	Slope (%)	NPK loss (kg/ha/year)		
			Without any conservation measures i.e. Control	With ICAR-CCARI recommended technology/conservation measures	% reduction in NPK loss
Cashew	2001-2013	19	89.7	35.7	60.2
Mango	2002-2019	19	123.8	14.5	88.6
Coconut	2008-2019	14	92.3	19.8	78.2

Soil and water conservation measures in cashew orchard



- ✓ Site- slope (19%) with annual rainfall of > 3000 mm
- ✓ Runoff reduced by 44.5%, soil loss reduced by 47% & SOC stock increased by 140%
- ✓ CCT + VB in cashew reduced nutrient loss by 60.2% compared to control

Soil and water conservation measures



- Soil and water conservation measures in mango
- Continuous contour trenching + vegetative barrier (CCT+VB) reduced soil loss by 83% (12.6 to 2.15 t/ha) and runoff by 53% than control (42.1 to 22.3%)
- In Mango, CCT + VB on an average reduced nutrient loss by 88.6% over control

- Soil and water conservation measures in coconut
- Circular trenching reduced soil loss and runoff by 76 and 34%, respectively
- Nutrient loss reduced by 78.2% over control
- Increased plant growth parameters



Dr. Gopal Ramdas Mahajan (Phone number : 9595167318), Senior Scientist at ICAR-CCARI may be contacted for any query regarding the above statement.

Goan Varta Dated 23-03-2023

तंत्रज्ञानाच्या मदतीने मातीची धूप झाली कमी!

प्रतिनिधी । गोवन वार्ता

भारतीय कृषी अनुसंधान परिषदेच्या माहितीतून स्पष्ट

पणजी : भारतीय कृषी अनुसंधान परिषद - केंद्रीय कृषी संशोधन संस्था, गोवा यांनी अभ्यासातून विकसित केलेल्या तंत्रज्ञानाच्या मदतीने राज्यातील मातीची धूप कमी होण्यास मदत झाली आहे. खासदार लुईझिन फालेरो यांनी राज्यसभेत उपस्थित केलेल्या प्रश्नाला उत्तर देताना केंद्रीय कृषिमंत्री नरेंद्र सिंग तोमर यांनी भारतीय कृषी अनुसंधान परिषदेच्या माहितीनुसार हे सप्टीकरण दिले.

डोंगराळ भाग हे गोवा राज्याचे वैशिष्ट्य आहे. येथे जमिनीचा उतार ०.२८ टक्के दराने बदलत राहते, याचा सरासरी उतार १४.४१ टक्के इतका असतो. राज्यात प्रतिवर्षी ३००० मिमीपेक्षा अधिक



पाऊस पडतो. राज्यातील मातीची धूप ही अत्यंत गंभीर समस्या आहे. परिषदेच्या गेल्या १५ वर्षांच्या अभ्यासानुसार काजू, आंबा आणि नारळ या पिकांच्या लागवडीत मातीची धूप होण्याचे प्रमाण कमी असते.

याच अभ्यासाच्या आधारावर परिषदेने जमिनीतील माती आणि पोषक तत्वांचे नुकसान कमी करण्यासाठी काजू, आंबा आणि

आंबा, नारळ पिकांमुळे मातीची धूप कमी

२००२ ते २०१९ या काळातील दरम्यान आंबा तसेच २००८ ते २०१९ या काळातील नारळ पिकावरील अभ्यासातून या पिकांमुळे मातीची धूप कमी होत असल्याची माहिती समोर आली आहे, असे परिषदेने म्हटले आहे. परिषदेकडून या पिकांसाठी विविध तंत्रज्ञानाचा वापर केला जात आहे.

नारळ यांसारख्या गोव्यातील महत्त्वाच्या पिकांमध्ये माती व जलसंधारण उपायांसाठी तंत्रज्ञान विकसित केले आहे. २००१ ते २०१३ या कालावधीत हा अभ्यास केला गेला.

या अभ्यासानुसार काजूच्या पिकांच्या बाबतीत नोव्हेंबर-डिसेंबरमध्ये सुरू होणारा काजूचा कचरा मातीचा पृष्ठभाग व्यापतो, ज्यामुळे माती वाहून जाण्यासाठी भौतिक

अडथळा निर्माण होतो आणि जमिनीची धूप कमी होते. पुढे, या पानांचा कचरा सूक्ष्म-वनस्पती आणि गांडुळ्यांसाठी अनुकूल वातावरण विकसित करण्यास मदत करतो. सुधारित सेंद्रिय पदार्थ आणि सूक्ष्मजीवांच्या क्रियांमुळे जमिनीची सुपिकता वाढते. यामुळे जमिनीतील आर्द्रता संवर्धन आणि भूजल पुनर्भरण यात सुधारणा होते.

Herald Dated 23-03-2023

Soil erosion leads to major crop losses over last 15 years ICAR-CCARI Goa study shows losses in cashew, mango and coconut cropping systems

Team Herald

PANJIM: Soil erosion in Goa has led to major crop losses over last 15 years.

Studies conducted at the Indian Council of Agricultural Research-Central Coastal Agricultural Research Institute (ICAR-CCARI), Goa show losses in cashew, mango and coconut cropping systems, estimated to be 24, 12.6 and 10.5 tonnes per hectare per year, respectively without any conservation practices i.e. control, which are less or close to the national average soil loss.

To further reduce the soil and nutrient loss, the ICAR-CCARI, Goa has developed technologies for soil and water conservation measures in important crops such as cashew, mango and coconut based.

Studies on cashew were

SOIL EROSION LOSSES:

Crop	Loss (tonnes per hectare per year)
Cashew	24
Mango	12.6
Coconut	10.5
Total	47.1

conducted on 19 per cent slope from 2001-2013. In cashew, the soil and water conservation measure standardised (continuous contour trenching and vegetative barrier of vetiver grass) reduced the runoff by 44.5 percent, soil loss by 47 percent (reduced from 24 to 12.3 t/ha/year) and NPK (Nitrogen, Phosphorus, and Potassium) loss by 60.2 percent (reduced from 89.7 to 35.7 kg/ha/year) with increased soil organic carbon stock by 140 percent.

Litterfall in cashew,

which starts during November-December, covers the soil surface and acts as a physical barrier to runoff and reduces soil erosion losses.

Further, the leaf litter helps in creating a conducive environment for the micro-flora and-fauna, such as earthworms. Improved organic matter and microbial activities lead to an increased infiltration rate. This will result in improved soil moisture conservation and groundwater recharge.

Studies on mango were conducted on 19 percent

To further reduce the soil and nutrient loss, the ICAR-CCARI, Goa has developed technologies for soil and water conservation measures in important crops such as cashew, mango and coconut based

slope during 2002-2019, wherein, a soil and water conservation measure of continuous contour trenching (CCT) and vegetative barrier (VB) of vetiver grass reduced soil loss by 83 per cent (reduced from 12.6 to 2.15 t/ha) and runoff by 53% than control (reduced from 42.1 to 22.3 per cent). This recommended measure on an average reduced NPK loss by 88.6 percent over control. Stud-

ies on coconut were conducted on 14 per cent slope during 2008-2019.

In coconut, circular trenching reduced soil loss and runoff by 76 and 34 percent, respectively, which has reduced the NPK loss by 78.2 per cent over control.

The cultivation of crops like cashew, mango and coconut reduces soil erosion however adoption of soil and water technologies developed by ICAR-CCARI further help to reduce soil erosion loss and improve soil health.

The ICAR-CCAR statement is following information given by Union Minister for Agriculture and Farmers Welfare Narendra Singh Tomar in response to an unstarred question by Rajya Sabha MP Luizinho Faleiro, on Soil Health management studies in Goa.

Herald Dated 21-03-2023

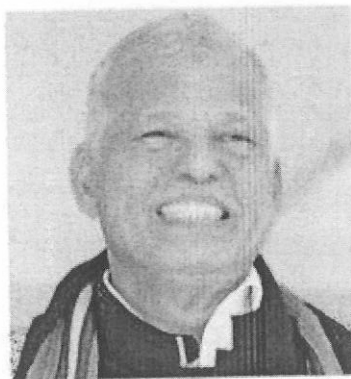
Goa has lost 4.1% of its total area to soil erosion: Union Min to Luizinho

Team Herald

PANJIM: Goa has lost 4.1 per cent of its total area to soil erosion, with Pernem and Bicholim Talukas suffering the most with loss of 80 tonnes per hectare per year, shows a study made the ICAR-National Bureau of Soil Survey and Land Use Planning.

This was informed by Union Minister for Agriculture Narendra Singh Tomar in a written reply to **TMC MP Luizinho Faleiro** in the Rajya Sabha.

The study further revealed that Pernem, Bardez, Bicholim, Sattari, Tiswadi, Ponda, Quepem and Sanguem Talukas had severe soil erosion -- 20-40 tonnes per hectare per year and very severe -- 40-80 tonnes per hectare per year accounting for an area of 26.9 and 22.0 per cent on the State, respec-



tively. Further parts of Sattari, Salcete, Sanguem, Quepem and Canacona Talukas had moderate soil erosion -- 10-15 tonnes per hectare per year and moderately severe -- 15-20 tonnes per hectare per year accounting for 8.8 and 8.9 per cent area respectively in the State.

The Union Minister told Faleiro that the Indian Council of Agricultural Research (ICAR)-Central Coastal Agricultural Research Institute (CCARI), Goa has studied soil health degradation and

management from important horticultural crops like cashew, mango and coconut. On an average, soil loss from cashew, mango and coconut cropping systems were 24, 12.6 and 10.5 tonnes per hectare per year respectively. The run off loss as percentage of rainfall in cashew, mango and coconut cropping systems were 23 per cent 32.1 per cent and 23.8 per cent.

Faleiro wanted to know whether any soil health management studies were conducted in the State with respect to major crops of rice, coconut, cashew, arecanut, mango, spices, etc and the findings of soil degradation and whether there were any recommended technologies to remedy the invasion of saline water, soil erosion, physical degradation, chemical degradation, biological degradation, etc in the State.

Pudhari Dated 23-03-2023

‘आयसीएआर’च्या उपायांमुळे मृदेची धूप होणार कमी

पणजी : पुढारी वृत्तसेवा

केंद्रीय कृषी संशोधन संस्थेने मातीची धूप तसेच त्यातील पोषक तत्वांचे नुकसान कमी करण्यासाठी कंटूर ट्रेचिंग या तंत्रज्ञानाचा वापर केला आहे. यामुळे आंबा, काजू आणि नारळ या पिकांना फायदा झाल्याचे संस्थेने सांगितले आहे.

यानुसार १९ टक्के जमिनीच्या उतार असणाऱ्या क्षेत्रातील काजू पिकासाठी माती आणि जलसंधारण योजना करून मातीची हानी ४७ टक्क्यांनी कमी झाली आहे. तर मातीतील पोषण मूल्यांचे प्रमाण होण्याचे प्रमाण ६० टक्क्यांनी कमी झाले आहे. १९ टक्के जमिनीच्या

उतार असणाऱ्या क्षेत्रातील आंबा पिकासाठी कंटूर ट्रेचिंग आणि व्हेटिव्हर गवताचा अडथळा तयार करून मातीची हानी सुमारे ८३ टक्क्यांनी कमी झाली आहे. तर मातीतील पोषण मूल्यांचे प्रमाण होण्याचे प्रमाण ८९ टक्क्यांनी कमी झाले आहे. संस्थेतर्फे २००८ ते २०१९ दरम्यान १४ टक्के उतारावर असणाऱ्या नारळावर अभ्यास करण्यात आला. गोलाकार खंदक करून मातीची हानी आणि प्रवाह अनुक्रमे ७६ आणि ३४ टक्के कमी केला आहे. मातीतील पोषण मूल्यांचे प्रमाण होण्याचे प्रमाण ७८.२ टक्क्यांनी कमी झाले आहे.

The Navhind Times Dated 23-03-2023

'ICAR helped lessen runoff, soil, NPK losses'

Soil erosion varies in moderate to extremely severe range

Special Correspondent

Panaji

Stating that the adoption of soil and water technologies developed by it has helped reduce soil erosion loss and improve soil health in Goa, the Indian Council of Agricultural Research (ICAR) - Central Coastal Agricultural Research Institute (CCARI), Goa on Wednesday said that the state is characterised by its unique undulated topography where the slope of the land varies from 0% to 280% with an average slope of 14.41%.

"Goa also receives excess rainfall of more than 3,000 mm per year, and the soil erosion losses in the state vary from moderate (< 15 t/hectare/year) to extremely severe (> 80 t/hectare/year) classes, while the national average soil loss in India is 15.59 t/ha/year," the ICAR-CCARI, Goa informed, pointing out that the permissible soil loss limit for India is 11.2 t/ha/year and the cultivation of crops like cashew, mango and coconut helps to reduce erosion losses as compared to fallow or barren lands.

The ICAR-CCARI, Goa has issued this statement in response to the media reports

HELPFUL CROPPING PATTERNS

> Cultivation of crops like cashew, mango and coconut reduces soil erosion, and adoption of soil and water technologies developed by ICAR-CCARI further helps reduce soil erosion loss and improve soil health



based on the information given by the Union Minister of Agriculture and Farmers Welfare Narendra Singh Tomar to an un-starred question asked by the Member of Parliament in Rajya Sabha Luizinho Faleiro on soil health management studies in Goa.

"Based on over 15-year studies conducted at ICAR-CCARI, Goa, soil erosion losses in cashew, mango and coconut cropping systems were estimated to be 24, 12.6 and 10.5 t/hectare/year, respectively without any conservation practices," the ICAR-CCARI, Goa informed, adding that the soil erosion losses in these cropping systems are less or close to the national average soil loss.

"To further reduce the soil and nutrient loss, ICAR-CCARI, Goa has developed technologies for soil and water conservation measures in important crops of Goa like cashew, mango and coconut based on the long-term studies conducted," the

statement revealed, adding that the studies on cashew were conducted on 19% slope, during 2001-2013.

The statement also informed that in cashew, the soil and water conservation measure standardised (continuous contour trenching + vegetative barrier of vetiver grass) reduced the runoff by 44.5%, soil loss by 47% (reduced from 24 t/hectare/year to 12.3 t/hectare/year) and NPK loss by 60.2% (reduced from 89.7 kg/hectare/year to 35.7 kg/hectare/year) with increased soil organic carbon stock by 140%.

"Litter fall in cashew which starts during November-December covers the soil surface and acts as a physical barrier to runoff and reduces soil erosion losses, and further, the leaf litter helps to develop a conducive environment for micro-flora and fauna such as earthworms," the ICAR-CCARI, Goa stated, noting that the improved organic matter and microbial activ-

ities lead to an increased infiltration rate. "This will result in improved soil moisture conservation and groundwater recharge," it added.

"The studies on mango were conducted on 19% slope during 2002-2019, and in mango, a soil and water conservation measure of continuous contour trenching + vegetative barrier of vetiver grass (CCT+VB) reduced soil loss by 83% (reduced from 12.6 t/hectare to 2.15 t/ha) and runoff by 53% than control (reduced from 42.1% to 22.3%)," the statement informed, adding that this recommended measure on an average reduced NPK loss by 88.6% over control.

"Studies on coconut were conducted on 14% slope during 2008-2019, and in coconut, circular trenching reduced soil loss and runoff by 78% and 34%, respectively, which has reduced the NPK loss by 78.2% over control," it revealed, adding that the cultivation of crops like cashew, mango and coconut reduces soil erosion, however adoption of soil and water technologies developed by ICAR-CCARI further help to reduce soil erosion loss and improve soil health.

Times of India Dated 23-03-2023

Soil erosion losses for key Goa crops less than or close to national average: ICAR

TIMES NEWS NETWORK

Panaji: A day after TOI reported that severe soil erosion is likely in parts of Goa, ICAR-CCARI on Wednesday said soil erosion losses in cashew, mango and coconut cropping systems were less than or close to the national average.

ICAR-CCARI cited several studies carried out in Goa over 15 years.

“Soil erosion losses in Goa vary from moderate to extremely severe classes. The national average soil loss in India is 15.59 t/ha/year,” said director of ICAR-CCARI Parveen Kumar. The permissible soil loss limit for India is 11.2 t/ha/year.

Kumar said that soil erosion losses in cashew, mango and coconut cropping systems were estimated to be 24 t/ha/year, 12.6 t/ha/year, and 10.5 t/ha/year, “without any conservation practices.”

The institute said that for cashew crops, conservation measures reduced the runoff by 44.5%, soil loss by 47%, and NPK (nitrogen, phosphorus, and potassium) loss by 60.2%.

“Cashew litterfall, which starts during November-December, covers the soil surface and acts as a physical barrier to runoff and reduces soil erosion losses,” said Kumar. “Further, the leaf litter helps to develop a conducive envi-

“**The cultivation of crops like cashew, mango and coconut reduces soil erosion. The adoption of soil and water technologies developed by ICAR-CCARI further helps to reduce erosion**

Parveen Kumar
DIRECTOR ICAR-CCARI

ronment for micro-flora and -fauna.” He added, “Improved organic matter and microbial activities lead to an increased infiltration rate. This will result in improved soil moisture conservation and groundwa-

ter recharge.”

As for mangoes, conservation measures reduced soil loss by 83% and runoff by 53% over control. This recommended measure, on average, reduced the NPK loss by 88.6%. As far as coconuts are concerned, circular trenching reduced soil loss and runoff by 76% and 34%, respectively and the NPK loss by 78.2%.

“The cultivation of crops like cashew, mango and coconut reduces soil erosion,” said Kumar. “However, the adoption of soil and water technologies developed by ICAR-CCARI further helps to reduce soil erosion loss and improves soil health.”

Times of India
Dated 30-03-2023

A nutty treat for cashew growers, price up by ₹25/kg

TEAM TOI

Porvorim: The fair value of an important commodity – cashew nuts – is all set to increase this year. The assured price has increased from Rs 125 per kg to Rs 150 per kg. As much as Rs 20 crore has also been allocated for various crops in the budget.

Earlier this month, Porim MLA Deviya Rane had pitched for raising the minimum support price for cashew nuts stating that many families earn a livelihood from it.

In a bid to reduce the cost of cultivation by way of on-farm production of inputs and to increase the net income of farmers, the state government will implement the National Mission on Natural Farming where the annual action plan on natural farming is under preparation for an area of 600 hectares.

The United Nations has declared 2023 as the International year of Millets. Keeping up with this, the government of India also announced 2023 as the International Year of



₹20 crore has been allocated for various crops in the budget

Millets and has lined up millet-oriented promotional activities across the country.

Goa is not far behind in promoting its preferred 'nachnem', with the first-ever Nachneachem Fest being held earlier this month and a series of activities being organised by the ICAR-CCARI to promote the crop.

Keeping up with the initiative, free seeds and a one-time assistance of Rs 20,000 per hectare have been announced for farmers in Goa to encourage them to increase the targeted area under production by 50 hectares.

Times of India Dated 02-04-2023

Natural way of farming can be easily adopted in Goa: Expert

Panaji: There is a need to adopt natural farming in our state to protect our natural resources like soil, water and air, said Parveen Kumar, director, ICAR-Central coastal agricultural research institute (ICAR-CCARI), Goa. He said that natural farming can be easily adopted in Goa due to its geographical location and natural resources. Kumar was speaking at a training programme on natural farming as a part of the International Year of Millets held recently at the institute.

A total of 45 farmers including women attended and had a live demonstration at agriculturist Sanjay Patil's farm at Savoi Verem where he explained mass multiplication of jeevamrut (natural liquid fertiliser) and its application to all his plants.

HRC Prabhu, senior scientist at the institute, briefed the farmers about the training. TNN

Tarun Bharat Dated 06-04-2023

आयसीएआर-सीसीएआरआय गोवाचा स्थापना दिवस साजरा

प्रतिनिधी
पणजी

गोव्यातील भारतीय कृषी संशोधन परिषद-केंद्रीय तटीय कृषी संशोधन संस्थेचा (आयसीएआर-सीसीएआरआय) ३४वा स्थापना दिवस नुकताच साजरा झाला. डॉ. सुरेशकुमार चौधरी, उपमहासंचालक, नैसर्गिक संसाधन व्यवस्थापन, आयसीएआर, नवी दिल्ली; परवीन कुमार, संचालक, आयसीएआर-सीसीएआरआय, नेव्हिल अल्फोन्सो, संचालक, कृषी संचालनालय, गोवा आणि नाबार्डचे महाव्यवस्थापक मिलिंद भरुड यांची याप्रसंगी उपस्थिती होती.

परवीन कुमार यांनी, संस्थेच्या कामगिरीविषयी माहिती दिली. संस्थेने आतापर्यंत तांदूळ, काजूबिया, वांगी, चवळी अशा एकूण सतरा पिकांची वाण विकसित केली आहेत. आयसीएआर-सीसीएआरआयने कार्दोझ मानकुराद आंब्याची नोंदणी केली आहे. तसेच संस्थेने दोन एकात्मिक पीक पद्धती तर पशु विज्ञानामध्ये, डुकराच्या दोन प्रजाती विकसित केल्या आहेत. संस्थेने कोकम, काजू जायफळ व आंबा मिळून सादर केलेल्या आठही वाणांना यंदा मंजूरी देऊन नोंदणी करण्यात येणार आहे. संस्थेने



८२ किनारी जिल्ह्यांतील शेतकऱ्यांपर्यंत पोहोचण्यासाठी विविध एनजीओ, संस्थांसोबत ६० सामंजस्य करार व मेमोरंड ऑफ एंज्रीमेंट केल्याची माहिती परवीन कुमार यांनी दिली.

संस्था शेतकऱ्यांच्या कल्याणासाठी गोवा सरकारला मदत करण्यास सदैव तत्पर आहे, असे डॉ. सुरेश कुमार चौधरी यांनी सांगितले.

नेव्हिल अल्फोन्सो यांनी सांगितले की, 'खाजन' जमिनीचे संरक्षण व जतन करण्यासाठी आणि अधिकाधिक क्षेत्र लागवडीखाली आणण्यासाठी कृषी विभाग प्रयत्नरत आहे. सध्या 'आंतरराष्ट्रीय भरडधान्य वर्ष' साजरे करित असताना गोव्याला भरडधान्याची समृद्ध परंपरा आहे.

कृषी विभाग रागी आणि नाचणी या पारंपरिक भरडधान्याची जास्तीत जास्त लागवड आणि उत्पादनासाठी कार्य करित आहे, असे अल्फोन्सो म्हणाले.

Times of India (Online) Dated 19-04-2023

Eighth edition of science festival kickstarts at ESG

TNN / Updated: Apr 19, 2023, 08:25 IST

59 PTS

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The film fest, on till April 20, will also feature robotics workshop

PANAJI: The eighth edition of Science Film Festival of India (SCI-FFI) which kickstarted on Tuesday will feature a workshop to show students how social media can be utilised to advance science. The three-day festival is being held till April 20 at the Entertainment Society of Goa (ESG), [Panaji](#).

Environment minister Nilesh Cabral urged students to lead the way in preserving the environment. Cabral said that putting the blame on others will have no effect. "Start with yourself and make a difference. All 'I's' have the power to change things," he said while inaugurating the science festival.

Satheesh Shenoy, national vice president of Vijnana Bharati and former director, Indian national centre for ocean information services, said that is not enough to just cultivate a scientific mentality and that there is a need to develop scientists. "A fantastic endeavour to accomplish the goal is a festival like SCI-FFI, which aims to stimulate young brains in this subject," he said.

The festival will feature science film screenings, science exhibition, science film making workshop for teachers, coding and robotics workshop and competition for students as well as interactions with eminent scientists.

continued....

ICAR - Central Coastal Agricultural Research Institute in Print Media

The films screened at the festival this edition are : AI, Attack, Avatar – 2, Keedam and Contact. An open show for the public in which the Marathi film 'Take Care, Good Night', based on cybercrime will be screened at Inox screen 1 on April 19 at 6pm.

A students' science village is also being held where hands-on science activities, demonstrations, visits to solid waste treatment plant and the ICAR-CCARI, Old Goa will be organized for students who live in rural areas of the state.

Chairman of the Dempo group of companies, Srinivas Dempo, said that science and mathematics have historically been India's strongest subjects. "After the British took over, they established a rote-learning-based educational system. However, now that the new education policy has been introduced the country will undoubtedly see a transformation," said Dempo.

The festival will feature science film screenings, science exhibition, coding and robotics workshop and competition for students as well as interactions with eminent scientists.

Agribot (Online) Dated 24-04-2023

ICAR-CCARI, Goa Conducted "Skill Development and Poultry Entrepreneurship Training Cum Demonstration" Jointly with CPDO (WR), Mumbai



A six days training cum demonstration programme on "skill development and poultry entrepreneurship" was conducted at ICAR-CCARI, Goa jointly with CPDO (WR), Mumbai during 24-29 March, 2023. The training was attended by 21 farmers from different parts of Goa. In the inaugural address, Dr. Parveen Kumar, Director emphasized on importance of skill development and poultry entrepreneurship for farmers and youths of Goa. He also interacted with the trainees about their expectations from the training. The programme consisted of fourteen lectures on different aspects of poultry farming including lectures on economics and project preparation too. Six practical demonstrations were conducted including visits to Poultry Unit (ICAR-CCARI, Goa), State Govt. Poultry Farm, Ela, and to the farmers' fields at Ponda, Goa. Dr. Tushar Gaunekar, I/C State Govt. Poultry Farm, Ela described the routine poultry farm activities and hatchery facilities to the trainees during the visit to the State Govt. Poultry Farm. Dr. Amiya R. Sahu, Scientist (Animal Genetics and Breeding) explained different breeds of poultry, their important characteristic features and breeding strategies. Dr. Rama Parab, I/C STC, Kurti, Ponda, Goa delivered a lecture on poultry farming related schemes and subsidies available for the farmers by Dept. of Animal Husbandry and Veterinary Services, Govt. of Goa. Two practical demonstrations were performed on vaccinations, biosecurity measures, sexing of birds, litter management, etc. by Dr. Neha Joshi, Farm Manager (CPDO, Mumbai) and Nibedita Nayak, Scientist (Poultry Science). Dr. Gokuldas P.P. delivered a lecture on semen collection and artificial insemination in poultry. Dr. Shirish Narnaware (I/C, Animal and Fisheries section) and Dr. Susitha Rajkumar, Senior Scientist (Vet. Pathology) delivered insightful lectures on bacterial and viral diseases of poultry, their diagnosis and management and preventive measures. A lecture on value addition of poultry products, their packaging and marketing was given by Dr. R.S. Rajkumar, Senior Scientist (Livestock Products and Technology). There was an

continued.....

ICAR - Central Coastal Agricultural Research Institute in Print Media

interactive session by the trainees with the scientists and knowledge shared by co-learning. During the valedictory session, three cash prizes given to the winners of quiz competition conducted at end of the training programme and certificates distributed to all the participants. The training was coordinated by Dr. Neha Joshi, Dr. Nibedita Nayak, Dr. Shirish Narnaware and Dr. Amiya Ranjan Sahu. The technical assistance was rendered by Mrs. Pranjali Wadekar, Mr Vishwajeet Prajapati, Mrs. Atasha and Miss Tejashvi.



Times of India Dated 27-04-2023

Of Mangoes & Memories

From crunch in land resources to rival varieties outside the state, Goan mangoes are slowing fading away

Paul Fernandes

Not too long ago, Goa, Govapuri or Gomantak could also have been also known as Ambevan. With 100 varieties of mangoes—of different sizes, shapes and taste—growing abundantly, every season laid out an assortment of luscious varieties.

Naturally, for many old-timers, some of the sweetest memories are associated in summer with mangoes and other fruits. But post-Liberation, the tree population and mango varieties have shown a decline, mainly due to urbanization and lack of commercial potential of many varieties.

“Seventy-seven varieties were documented by the Indian Council of Agricultural Research scientists Rego and Kaze under the all-India coordinated research project in 1979. We have included a few but are keen to add more if somebody can report to us new ones. Of these varieties, we have conserved as many as 42 in the field germplasm bank,” A R Desai, former ICAR-CCARI scientist, said.

The Old Goa institution is keen to lay its hands on the germplasm of the remaining ones. From its germplasm bank, ICAR-CCARI provides the grafts of any conserved variety to farmers for planting.

The crunch in land resources due to construction and development activity is a major threat to mango or-



An Italian traveller, **NICCOLAO MANUCCI**, is said to have eulogised Goan mangoes in the 17th century as the best ones

WHAT'S IN A NAME

- **Malcorado**, which means **poor colour** changed to Mancurado over the years
- The uniquely shaped Bishop variety got its name from its shape – **the Bishop's belly**. It's considered an excellent table variety – for eating
- Most mangoes were **named after families and priests** who promoted their propagation
- **Papel variety** is unique as its stone is **thin and looks like paper**



- Many mangoes have fantastic names and are also popular for their good table quality, almost on par with Mancurado but lose out on other counts – alternate bearing habit, lack of attractive colour and poor shelf life
- The biggest mango variety in Goa is **Bishop**, while the Amra (each fruit is 4-5kg) and **Hath Jhula** are other **Indian mango** varieties with big sized fruits

chards and future recruitment. Existing trees have become senile, and their production impacted by parasite attacks.

“One of the main reasons is people want space in their compounds and don't want a tall mango tree. Secondly, these varieties take a longer time to grow,” Maria Fonseca, a senior botanist said.

Goan mangoes also face stiff competition from a few varieties from other states due to their better commercial potential—regular bearing and longer shelf life.

Cardozo Mancurado, however, holds promise for its commercial

traits, its size, colour and other attributes. Deservingly, it has been registered with the National Bureau of Plant Genetic Resources, (ICAR-NBPGR), New Delhi, for its commercial traits. It is also considered a suitable candidate among the Mancurado group for Geographical Indication (GI) status.

“Hilario is another commercially important variety, the season of which starts after the Mancurado season,” Desai said.

The only way Goa can get ahead of its varietal crisis is to “plant more trees on orchard scale to preserve the economically important varieties”, Desai said.

SWEET TALK

The Portuguese and priests introduced the mango varieties in Goa during the 16th century and even grafting technique early, boosting vegetative proliferation of many varieties

Goa has an estimated **5,000** hectares under mango crop and a production of **11,000** tonne



Mancurado is the most popular variety for its excellent eating quality and aroma in Goa, while Hilario, also called ‘Mang Hilario’, and Malgues, Xavier, Fernandin are also very popular

Non-planting of new trees is likely to reduce mango production in the state, either as an orchard crop or home garden crop



Mapus or **Alphonso** from Ratnagiri and other areas – **originally from Goa** – is more prized today outside the state for its taste and longer shelf life



Scores of small unnamed varieties of mangoes, called **ghontam**, **donkam** (sour ones) were abundantly available, but are **now disappearing**



TALES AS OLD AS TIME

■ An age-old unwritten rule says that a mango tree may belong to anybody, but **once the fruit falls to the ground by itself, it belongs to nobody** or anyone can claim it. **Hurling stones or a stick to bring it down is objectionable**

■ Passers, even from their vehicles, **stopping to pick a fallen mango is a familiar sight** in Goa

PRESERVATION

■ A germplasm bank at the ICAR-CCARI, Old Goa, has preserved many mango varieties for posterity. Several such as Japao, Khapri, Panque, Aruda, Bastarda, Bombo, Temuda, Rosario, Remedios, Dom Bernardo, Dom Fernando and Dom Philippe, Severina, Timoz may have been lost

■ Others include, Sant Anton, Jeronimo, Fernando, Ferrao, Frias, Mateus, Papagi, Rebello and Revnold

Cardozo Mancurado, besides the popular Mancurado variety, **spells hope for commercial utilisation**. The variety from a tree in Cardozo family's compound at Mapus has longer shelf life, high yield (3,000 fruit in 1994-95), and also boasts of bigger fruit among other Mancurado varieties, its weight ranging from 278g to 320g



Times of India (Online) Dated 27-04-2023

State's climate change action plan now in public domain

TNN / Updated: Apr 27, 2023, 00:39 IST

71 PTS

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Goa woke up to cloudy weather on Wednesday morning

Panaji: After a prolonged consultative process and verification exercise, the Goa State Action Plan for Climate Change (GSAPCC) 2023-2033 was put in the public domain on Wednesday by environment minister Nilesh Cabral.

The plan has been prepared through Nabcons, a wholly owned subsidiary of Nabard, under the guidance of the Goa State Biodiversity Board (GSBB),

The climate change meeting organised by GSBB in the city was attended by senior climate change specialist, World Bank, Karan Mangotra; general manager and officer in-charge, Nabard, Goa, Milind Bhirud; director, ICAR-CCARI, Old Goa, Parveen Kumar; IAS, director, department of environment and climate change, Sneha Gitte; member secretary GSBB, Pradip Sarmokadam; and other dignitaries, scientists, researchers and experts.

Cabral, who attended almost a half-day session, assured implementation of the plan by adopting a sectoral approach. He said that like Nanda lake, which has been declared a Ramsar site, Goa has more such sites. He emphasised the need to restore and revive khazan bund networks along with agriculture and pisciculture that have existed for centuries. He said that although two models will be developed under the national adaptation funding, there will be efforts to tap international funding.

continued.....

Sarmokadam, who is also nodal officer of the state-level steering committee (SLSC) for NAFCC, Goa, said that the plan had been prepared as per the framework of the ministry of environment and climate change. "The ecological significance of mudflats, river banks, riparian ecosystems, mangroves, khazan ecosystems with intricate networks of bunds, smaller plateaus along beaches followed by large plateaus with grasslands, tropical and other forests have been covered as per vulnerability assessment, including strategies for dealing with climate change impacts on these ecosystems," he said.

Though it is a baseline document and an action plan for 10 years, it is a dynamic one, and will be reviewed after three years or revisited in case of breakthrough findings and other developments.

Heads of various departments and institutions, including NIO, Goa University, BITS Pilani, and the Goa Business School, and reputed NGOs, such as Teri, provided insights and suggestions on climate change interventions, opportunities, and success stories of climate change. There will be more such interactive sessions, said Cabral.

Times of India Dated 28-04-2023

'Coastal biodiversity huge opportunity, use it sustainably'

TIMES NEWS NETWORK

Panaji: With the emerging issues of coastal ecosystems, there is a need to cope with the challenges of climate change and its impacts, said Suresh Kumar Chaudhari, deputy director general (natural resource management), ICAR headquarters, New Delhi.

"The biodiversity of coastal regions is an enormous opportunity. We should utilise it sustainably," he said. Chaudhari commended the directorate of agriculture, Goa, for taking necessary steps to make Goan agriculture vibrant by emphasising education, extension, and research.

He urged scientists at the ICAR-Central Coastal Agricultural Research Institute, Goa (CCARI) to research natural farming by identifying niche commodities and areas.

"ICAR-CCARI will extend its support through technolo-

Two special team awards were given to the teams of scientists who contributed to converting barren lands to green lands through systematic transfer of technology programmes

gical backstopping and transfer of technology programmes to all stakeholders for the benefit of the coastal farmers," said Parveen Kumar, director, ICAR-CCAR, Goa.

Nevil Alphonso, director, directorate of agriculture, thanked the ICAR for the support extended to initiating the Goa College of Agriculture, very first agricultural college in the state. He emphasised taking a systematic and focused approach to promote the cultivation and processing of millet to celebrate the International Year of Millets 2023.

A unit of ICAR-IARI's Ja-

lopchar™ Technology-based eco-friendly wastewater treatment facility of capacity to treat 1 lakh litre water under the Swachhta Action Plan Program was inaugurated by Chaudhari. Developer of the technology, Ravinder Kaur, principal scientist, Water Technology Center, ICAR-IARI, New Delhi, explained the concept and functioning of the plant.

Two special team awards were given to the teams of scientists who contributed significantly to converting barren lands to green lands through systematic transfer of technology programmes and for compiling farmer profiles.

In a separate event, ICAR-CCARI, Goa, signed a memorandum of understanding with the National Innovation Foundation (NIF), Gandhinagar, Gujarat, to foster collaboration in carrying out advanced research.

Times of India Dated 30-04-2023

College students undertake mangrove plantation drive

TIMES NEWS NETWORK

Panaji: Around 500 mangrove propagules of *Rhizophora mucronata* species (the red mangrove) were planted along the Zuari river bank at Bondebhat, Sancoale, under the initiative 'Come let's Man-Groove'.

The initiative proposed to complete planting of 5,000 propagules before the monsoon sets in. The collection of the mangrove propagules and year-old plantlets was done at Cortalim by the students and staff of St Joseph Vaz College, Cortalim, as part of Earth Day observation.

Restoration of the mangroves was taken up at the shoreline which was damaged when Cyclone Tauktae hit the Goan coast.



Restoration of the mangroves was taken up at the shoreline at Sancoale, which was damaged when Cyclone Tauktae hit the Goan coast

"Mangroves act as the first defence line against the rising sea in the coastal areas. They are a vital component of coastal ecosystems providing ecological, economic and social benefits," said Pratiksha Marathe, a student.

A total of 25 volunteers participated in the initiative comprising students of the college, members of the Nisarga Nature Club, Chicalim Youth Farmers Club (CYFC) and Goencho Ekvott. The drive is a second restoration cycle of the Mangrove Conservation Initiative at Sancoale.

Bolmax Pereira, the co-ordinator of the initiative, said that the outcomes of the first phase have taught them many things about the conservation drive which helped in the second phase. "The dos and

don'ts will be implemented during the next phase for a successful drive this year for securing the vulnerable river bank at Bondebhat," he said.

Sandeep Azrenkar of Nisarga Nature Club appreciated the young brigade of volunteers who took time out for the initiative.

The activity is supported by the forest department, Goa State Biodiversity Board, ICAR-CCARI and Diocesan Commission for Ecology.

"The first phase of this initiative was held on the Goa statehood day on May 30, 2022, the survival rate of which was found to be minimal due to strong wave action at the plantation site that washed away most of the propagules before they could establish themselves," the students said.

PIB Website (<https://pib.gov.in>) Dated 03-05-2023

“Shramik Samman Diwas” observed at ICAR – CCARI

Posted On: 03 MAY 2023 3:01PM by PIB Mumbai

Goa : 3 May 2023

ICAR - Central Coastal Agricultural Research Institute (CCARI), Goa celebrated International Labour Day-2023 as “Shramik Samman Diwas” to recognize and appreciate the contribution of labourers from all sections and units towards the development of the Institute. The event was attended by Dr. A. R. Desai, Ex-Principal Scientist (Fruit Science) as the Guest of Honour, Shri Chandra Shekhar, IAS (Retd.) from Hisar, Haryana as the Special Guest, and Dr. N. P. Singh, Emeritus Scientist as the Chief Guest.



Dr. Parveen Kumar, Director of ICAR CCARI, along with the guests, felicitated labourers by presenting them with hats for field work. He briefed the gathering about various welfare activities and facilities being provided and created for the labourers in the Institute premises. He also affirmed that the Institute would always protect the rights of labourers and reminded everyone to perform their duties with a sense of belongingness and utmost sincerity.



A total of 180 participants including contractual labourers, security guards, housekeeping staff, project staff, young professionals and Institute staff members attended the program. The event provided a platform to recognize the tireless efforts of the labourers and to acknowledge their vital contribution to the growth of the Institute.

Times of India Dated 05-05-2023

Pre-monsoon deficit 91.9%, stokes worry

Eye On Water Availability Before Rains

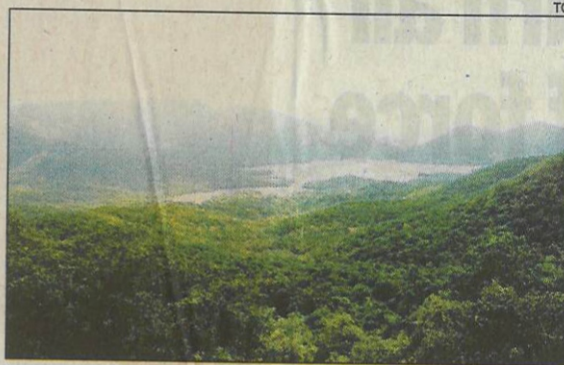
Paul Fernandes

Panaji: In a hot and humid season that has seen dry days extend deeper into the summer, the pre-monsoon rainfall deficit has mounted to a massive 91.9%, raising concerns about heat conditions and water availability before the monsoon.

India meteorological department (IMD), Panaji, has recorded a meagre 0.9mm of rainfall in just over two months, as compared to a normal of 11.1%. While dry conditions prevail in March, only a few places witnessed light to moderate rainfall in just over two months.

Quepem recorded the highest rainfall of 6mm, Margao 2mm, and Sanguem and Pernem received 1.2mm each. Other places were mostly dry and some rainfall was witnessed in the ghat areas.

The Panaji IMD centre forecast light to moderate rainfall on a few occasions, as overcast conditions prevailed in some parts of Goa. "There were several systems, including troughs and cyclonic circulation in interior Karnataka, but westerlies were dominating throughout, especially in April. Due



Water levels at the Anjunem reservoir were recorded at just 18%

to this, the rainfall was mostly in the ghat areas," Rajasree V P M, scientist, IMD, Panaji said.

During February, the easterlies prevailed and the mercury often soared higher than usual this year. At the beginning of summer, IMD, Panaji, recorded maximum temperatures above 36 degrees for around 10 days in the first fortnight of March 2023.

It was low humidity of around 20% that prevented heatwave conditions. But both months ended as the hottest February and March respectively in decades.

The lack of pre-monsoon rain and dry conditions have caused much sultriness and discomfort this season. "Pre-monsoon rain (PMR) brings great relief from extreme heat and is a harbinger of the monsoon rainfall," M R Ramesh Kumar, chief scientist (retired), National Institute

of Oceanography, Dona Paula, and a noted meteorologist said. Kumar added, "The peak of PMR is one of the forecasting methods for the monsoon onset over Kerala."

Plantation crops have been affected more by hot and dry weather than other crops. "Coconut plantations have suffered from water-deficit stress, such as drying of leaves and leaf fall," Bappa Das, scientist, agricultural meteorology, ICAR-CCARI, Old Goa, said. "In our advisories, we have told farmers to irrigate such crops wherever water is available."

A lack of a few brisk showers has reduced water levels in dams and reservoirs. "The dry conditions can create health problems for senior citizens and children. It can also cause water shortages to the benefit of the tanker mafia," the former NIO scientist said.

Tarun Bharat Dated 06-05-2023

आयसीएआर-सीसीएआरआयमध्ये 'श्रमिक सन्मान दिवस' साजरा

प्रतिनिधी

पणजी

भारतीय कृषी संशोधन संस्था, केंद्रीय तटीय संशोधन संस्था (आयसीएआर-सीसीएआरआय), गोवा यांनी संस्थेच्या विकासासाठी सर्व विभाग आणि घटकांमधील मजुरांनी दिलेल्या योगदानाचा गौरव करण्यासाठी आंतरराष्ट्रीय कामगार दिवस-२०२३ हा 'श्रमिक सन्मान दिवस' म्हणून साजरा करण्यात आला. या कार्यक्रमाला फलोद्यान विभागाचे माजी प्राचार्य डॉ. ए. आर. देसाई, चंद्रशेखर, भारतीय प्रशासन सेवा (निवृत्त) आणि डॉ. एन. पी. सिंग, एमेरिटस शास्त्रज्ञ यांची उपस्थिती होती.

आयसीएआर-सीसीएआरआयचे संचालक डॉ.

परवीन कुमार यांनी उपस्थित मान्यवरांसह मजुरांना शेतातील कामासाठी टोप्या देऊन त्यांचा सत्कार केला. आयसीएआर-सीसीएआरआय संस्थेच्या आवारात मजुरांसाठी उपलब्ध करून देण्यात येत असलेल्या विविध कल्याणकारी उपक्रमांची आणि सुविधांची माहिती त्यांनी दिली. संस्था नेहमीच मजुरांच्या हक्कांचे रक्षण करेल. प्रत्येकाने आपले कर्तव्य आपुलकीने आणि अत्यंत प्रामाणिकपणे पार पाडावे, असे ते म्हणाले.

सदर कार्यक्रमात कंत्राटी कामगार, सुरक्षा रक्षक, स्वच्छता विभाग कर्मचारी, प्रकल्प कर्मचारी, युवा व्यावसायिक व संस्थेचे कर्मचारी असे १८० जण सहभागी झाले होते.

Times of India Dated 07-05-2023

Farmer turns barren Ponda plot into kulaghar

Nida.Sayed@timesgroup.com

Panaji: Nothing less than a Shangri-La-esque paradise, a Ponda-based farmer has blown a magical kiss into an arid land and turned it into a lush green natural farm.

Sanjay Patil, 58, a green revolutionary farmer known to many as the 'one-man-army', has single-handedly transformed a barren plot of 10 acres into a 'kulaghar'.

"There is science in everything that we do at the farm," Patil told TOI. "To retain the sanctity of natural farming practices, I have been using 'jeevamrut' produced from cow dung for the past seven years at the kulaghar. There is a shortage of water on the hill, for which I built a tunnel to facilitate water supply and engaged in drip irrigation for water conservation. The organic waste is used in mulching, therefore eliminating the ne-



Sanjay Patil has built a tunnel to facilitate water supply to the kulaghar and has used the drip-irrigation method for water conservation

ed of depending on any external resources," he added.

At the kulaghar, besides arecanut and black pepper, cashew, pineapple, and coconut are also grown.

Patil received technical guidance for his project from ICAR-Central Coastal Agricultural Research Institute (CCARI), Goa. Right from improved grafts of black pepper and other crops, pest management of the crops, to health

and disease management of the cows, the scientists of the institute have been hand-holding the farmer.

The kulaghar farmer recently received the coveted IA-RI—Innovative Farmer Award 2023, for his outstanding contributions to natural farming and zero-energy micro-irrigation system. The award was handed over to him by Union minister for agriculture and farmers' welfare Kai-

lash Choudhary, at New Delhi.

A team constituted by director, ICAR-CCARI, Goa Praveen Kumar, visited the farmer, documented his technologies, and prepared the application for the nomination for the award.

Even though he has formal school education up to Class 11, experts from ICAR-CCARI said that Patil "possesses the knowledge and skills of a top engineer" and that he is an inspiration to small farmers.

He was especially guided through the technicalities of natural farming by retired scientist, A R Desai.

"Patil has automated a lot of his farming practices which has allowed him to cultivate 10 acres of land seamlessly," said Kumar.

"Soon, we will be collecting soil-health data to document the changes that have taken place after he adopted natural farming," Kumar said.

Gomantak Dated 10-05-2023



डॉ. ए. आर. देसाई : नव्या जातींची लागवड करा; ज्यूस, कॅंडी, माऊथ फ्रेशनर बनवून आर्थिक सुबत्ता मिळवा

शेतकऱ्यांनो, जायफळाच्या उपपदार्थांकडेही लक्ष द्या

अनिल पाटील

पणजी, ता. ९ : राज्यात उपवर्णान्या विविध मसाल्यांच्या पदार्थांबरोबर जायफळाची शेततीही उपयुक्त ठरत आहे. 'आयसीएआर'च्या केंद्रीय किनारी शेतती संशोधन संस्थेने जायफळाच्या मुख्य मसाल्यांबरोबर टाकून दिल्या जाणाऱ्या वरील आवरणापासून सरबत (ज्यूस), कॅंडी आणि माऊथ फ्रेशनर बनवले आहे. शेतकऱ्यांनी अशा पुरक पदार्थांची निर्मिती केल्यास त्यांच्या उत्पन्नात वाढ होईल, असे मत शास्त्रज्ञ डॉ. ए. आर. देसाई यांनी व्यक्त केले.

डॉ. देसाई हे गेल्या २० वर्षांपेक्षा जास्त काळ जायफळाच्या जाती आणि त्यांच्या उपपदार्थांबरोबर संशोधन करत आहेत. त्यांनी जायफळाच्या तीन प्रजातींचा शोध लावलाय. गोव्यातील 'तामसुली' या मुख्य जातीपासून एनएम १, २ आणि ३ या जातींची निर्मिती त्यांनी केली आहे. या जातींमध्ये

मोठ्या आकाराच्या जायफळाबरोबर जायपत्रीचे प्रमाणही जास्त आहे. शेतकऱ्यांनी अशा नव्या आणि भरघोस उत्पादन देणाऱ्या जातींची लागवड करावी, असे आवाहन देसाई यांनी केले आहे.

शेतकरी जायफळाचे उत्पादन घेताना केवळ फळ, त्याच्या भोवतीची मागज म्हणजेच जायपत्री काढून घेतात आणि सुमारे ७० टक्के भाग फेकून देतात. या टाकून दिल्या जाणाऱ्या आवरणापासून संशोधन केंद्राने अनेक उपपदार्थांची निर्मिती केली आहे. प्रामुख्याने या आवरणापासून बनवलेला जायफळ सरबत (ज्यूस) अनेकांच्या पसंतीला पडले आहे. लवकरच आम्ही त्यांचे व्यावसायिक उत्पादन करण्यासाठी प्रयत्नशील आहोत, असे डॉ. देसाई म्हणाले.



जायफळ कॅंडी, माऊथ फ्रेशनरला पसंती

जायफळाच्या आवरणापासून बनविलेली जायफळ कॅंडीसुद्धा खवऱ्यांची पहिली पसंती ठरली आहे. त्यानंतर याच भागापासून बनवलेले माऊथ फ्रेशनरही उपयुक्त ठरत आहे. कारण जायफळाच्या मुख्य मसाल्यापासून बनवलेले उपपदार्थ एकूण उत्पादनात आणि उत्पन्नात वाढ करतात. यासाठी शेतकऱ्यांनी जुने गोवे येतील कृषी संशोधन केंद्राला नक्कीच भेट द्यावी. जायफळाच्या वरील आवरणापासून बनवलेला ज्यूस हा अनेक अर्थाने पोष्टिक आणि पचनासाठी महत्त्वपूर्ण आहे. यामध्ये अनेक प्रकारची जीवनसत्त्वे असतात. म्हणूनच जायफळ हे बहुगुणी मानले जाते. याचा मसाल्यांमध्ये मोठ्या प्रमाणात वापर होतो.



शेतकरी जायफळाचे उत्पादन घेताना केवळ फळ, त्याच्या भोवतीची मागज म्हणजेच जायपत्री काढून घेतात आणि सुमारे ७० टक्के भाग फेकून देतात. हा वाया जाणारा बायोमॅस आमच्या संशोधनाचा विषय होता. या टाकून दिल्या जाणाऱ्या आवरणापासून संशोधन केंद्राने अनेक उपपदार्थांची निर्मिती केली आहे. - डॉ. ए. आर. देसाई, ज्येष्ठ शास्त्रज्ञ

Times of India Dated 13-05-2023

Just 10km from Panaji, Old Goa saw mean max temp 1.4°C higher

Paul Fernandes | TNN

Panaji: If residents in Goa's midlands and hinterland regions feel more stifled by the heat than coastal dwellers, a state-run weather observatory recently provided a glimpse into the varying heat conditions just 10km from Goa's coast.

A weather observatory at Old Goa recorded a mean maximum temperature of 35.2 degrees C in April, as opposed to 33.8 degrees C in Panaji, a surprising difference between two locations just a 15-minute drive apart.

The temperatures recorded

Rajtilak Naik



Children try to beat the scorching heat on Miramar beach on Friday

in Panaji are considered representative of the whole state.

For Panaji, April followed two months that were its hot-

test in several decades, according to data from IMD-Panaji.

► Interiors warming, P 3

'Interiors warming more than locations close to sea'

► From P 1

For most of the month, the mercury hovered around 34 degrees Celsius in Panaji, although higher humidity did cause sultriness and discomfort.

"The average maximum temperature for April at Old Goa was 1.4 degrees higher than for Panaji, indicating the greater warming of interior locations compared to locations close to the sea. The mercury soared to 38



On five occasions, the temperature rose past 36 and 37 degrees C

degrees C on two occasions," said Bappa Das, meteorologist scientist, at ICAR-CCARI. On five occasions each,

the temperature rose past 36 and 37 degrees C.

The mercury jumped high off and on at Old Goa, as it soared to 38 degrees Celsius twice, on April 8 and 9, and 37 degrees Celsius for three days, on April 15, 16 and 17.

Panaji's highest-ever recorded temperature was 39.8 degrees C, recorded on April 7, 1989. The highest mean maximum for April was 34.5 degrees C in 2010.

However, there wasn't

much difference in mean minimum temperatures recorded during April 2023 at Panaji and Old Goa—24.5 and 24.6 degrees C respectively.

"As compared to the rest of the country, excess pre-monsoon rainfall has been recorded from Delhi to Kerala, but Goa is an exception, with a deficit of more than 90%," said M R Ramesh Kumar, former chief scientist, National Institute of Oceanography, Dona Paula.

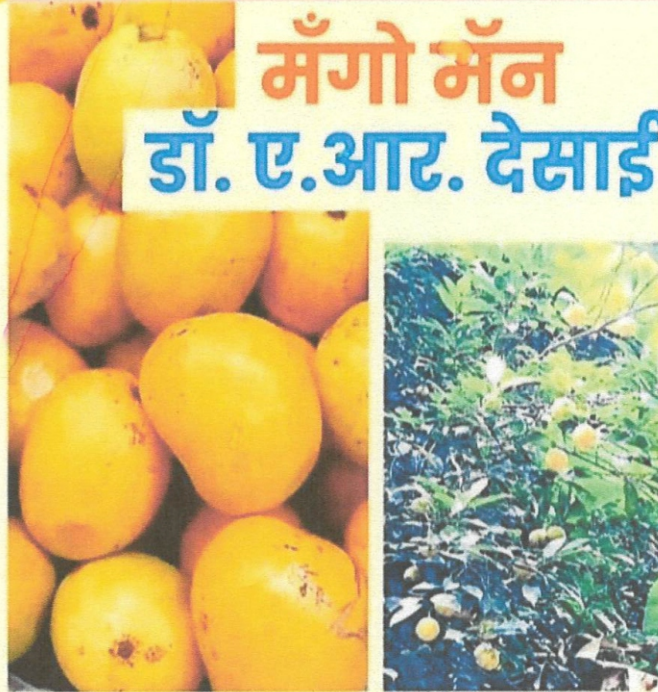
Gomantak Dated 17-05-2023

-अनिल पाटील

भे दक डोळे, सरळ नाक, गोल गव्हाळ चेहरा, स्पॅरो केस, आत्मविश्वासपूर्ण चाल, मृदु-मिठाभावी स्वभाव, पाहताच क्षणी संन्यस्त वाटणारे पण फळे, मसाले या क्षेत्रात उत्तुंग संशोधन करून पुढील पिढीबद्दल यत्न चिंतन, मनन करणारे व्यक्तिमत्त्व म्हणजे जुने गोवे येथील केंद्रीय किनारी शेती संशोधन केंद्रातील मंगे मॅन- डॉ. ए. आर. देसाई। आंबे, काजू, जायफळ, दालचिनी, मिरी, हळद आणि आले यांच्या सुधारित उत्पादन पद्धती आणि त्यासंबंधीचे व्यवस्थापन तंत्रज्ञान त्यांनी विकसित केले आहे.

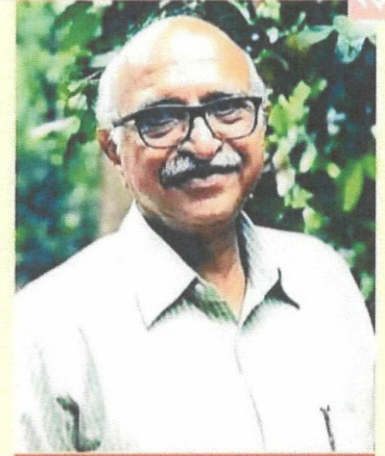
गोव्याच्या शेतकरी वर्गात तर 'मंगे मॅन' अशीच त्यांची ओळख आहे. त्याचे कारणही तसेच आहे; गोव्याची शान असणाऱ्या मानकुराद आंब्याच्या अनेक जाती, प्रजाती गोळा करून त्यांच्यामधल्या उत्कृष्ट जाती त्यांनी जतन, संवर्धन आणि संरक्षित केल्या आहेत. त्यांच्याकडे, म्हणजे या संशोधन केंद्रात मानकुरादसह, गोव्याच्या मूळ अस्सल आंब्याच्या अनेक जाती आहेत. त्यावर त्यांचे सतत संशोधन सुरू असते. याबरोबरच आंब्यापासून अनेक उपपदार्थांची निर्मिती करणे कता येईल यासाठी ते रात्रंदिवस झटत असतात. कार्दोज, मानकुराद आणि हिलारियोसारख्या लोकप्रिय जातींमधल्या परिवर्तनशक्तिचा शोध घेऊन त्यामधल्या उत्कृष्ट जातींची निर्मिती त्यांनी केली आहे.

त्यांचे हे काम केवळ आंब्यापुरते मर्यादित नाही तर गोव्याची दुसरी ओळख असणाऱ्या काजूच्या संशोधन क्षेत्रातही त्यांची कामगिरी उत्तुंग आहे. शेतकऱ्यांच्या उत्पादनात आणि उत्पन्नात वाढ घडवणाऱ्या काजूच्या अनेक जातींचा शोध त्यांनी लावला आहे. बाळ्डी-२ या जातीबरोबर काजू १, २, ३, ४ या उत्कृष्ट उत्पादन देणाऱ्या आणि किडींचा प्रादुर्भाव करणाऱ्या चरणांना प्रतिकार करणाऱ्या जातीही त्यांनी शोधून काढल्या



आहेत. यारिवाय जायफळावरील संशोधन करून जायफळाच्या तामसूल, एमएन १, २, ३ या जाती शेतकऱ्यांसाठी त्यांनी आज उपलब्ध करून दिल्या आहेत. दालचिनी, काळी मिरी, हळद आणि आले यांच्या सुधारित उत्पादन पद्धती विकसित करत असताना अल्पभूधारक शेतकऱ्यांसाठी एकाच शेतीत प्रयोग करून कमी क्षेत्रात वेगवेगळ्या फळांचे उत्पादन

करणे घेता येईल आणि आपले उत्पन्न कसे वाढवता येईल यासंबंधी वेगवेगळे प्रयोग करणे चालूच ठेवले आहेत. गोव्यातील आदिवासींचे जीवनमान सुधारणे याकरता विविध फळझाडांचे वृक्षारोपण, मसाले उत्पादन याबरोबर त्यांच्या शेती आणि शेतीपूरक व्यवसायांना हातभार लावण्यासाठी ते सतत धडपडत असतात.



कृषी जर्नलमधून संशोधन जगासमोर

कर्नाटकातील कुस्तगी येथील शिक्षित कुटुंबात जन्माला आलेल्या डॉ. देसाई यांनी फुलोत्यादन कृषी विज्ञान विद्यापीठ, बैंगलोर इथून आपले पदव्युत्तर शिक्षण पूर्ण केले व धारवाडच्या कृषी विज्ञान विद्यापीठातून पीएचडी मिळवली. त्यानंतर काही दिवस ते मेघालय या राज्यात फळांच्या विविध जातींवर संशोधन करत होते. देशातील मान्यवर कृषी संशोधन सस्थांचे ते मानद सदस्य आहेत. विविध पुरस्कारांनी त्यांना गौरवण्यात आले आहे, तसेच विविध कृषी जर्नलमधून त्यांचे संशोधन जगासमोर मांडले गेले आहे.

Times of India
Dated 29-05-2023

Scientists join forces to boost soil health

TIMES NEWS NETWORK

Panaji: There is a need for nutrient use efficiency and soil organic carbon management in Goa, said soil science experts while speaking about importance of soil health in sustainable agriculture. ICAR-Central Coastal Agricultural Research Institute (CCARI), Goa and ICAR-Krishi Vigyan Kendra (KVK), North Goa organised a campaign on soil health management under Mission Lifestyle for environment to encourage sustainable life styles.

The programme was attended by 40 participants. Gopal Mahajan, senior scientist, soil science, briefed the attendees about the campaign, the efficient use of nutrients and soil organic carbon management in farming.

In the campaign, vermicomposting techniques using farm waste was also demonstrated to the participants wherein the institute's experts explained the importance of vermicompost in maintaining good soil health.

Somnath Holkar, senior scientist, plant pathology, ICAR-National Research Centre for Grapes, Pune, also attended this programme.

Tarun Bharat Dated 30-05-2023

सोनाळ येथे शेतकऱ्यांसाठी मार्गदर्शन कार्यशाळा

जिवामृत, काजू, माडाला लागणारी कीड, दुग्ध व्यवसाय या विषयांवर सखोल मार्गदर्शन

प्रतिनिधी

वाळपई

आजच्या महागाईमुळे शेती, कुळागरे परवडणारी नाहीत यामुळे झिरो शेती बजेट ही संकल्पना नव्याने रुजू होऊ लागली आहे त्याचप्रमाणे सत्तरी तालुक्यातील काजू व इतर स्वरूपाच्या पिकांना रोगाला सांभाळावे लागत आहे या सर्वांवर मात करून शेतीची संकल्पना पुढे न्यायची असेल तर आधुनिक तंत्रज्ञान आत्मसात करणे तेवढेच गरजेचे आहे. याची विशेष दखल घेऊन सत्तरी तालुक्यातील सोनाळ येथील बागायतदारांनी कृषी विज्ञानच्या एकदिवशीय कार्यशाळेमध्ये भाग घेतला.

यावेळी कार्यशाळेत सहभागी शेतकऱ्यांना काजूच्या पिकाला लागणारा रोठा कीड नियंत्रण, त्याचप्रमाणे काजूच्या वेगवेगळ्या विकसित प्रजाती, माडाला लागणाऱ्या कीडीवर नियंत्रण आणणे याबाबत केंद्राचे प्रमुख चिदानंद प्रभू यांनी शेतकऱ्यांना मार्गदर्शन केले.

यावेळी बागायतदार शेतकऱ्यांनीही त्यांना भेडसावणाऱ्या अडचणी आणि समस्यांबाबत कृषी विज्ञान केंद्राच्या अधिकाऱ्यांकडून माहिती जाणून घेतली.

सत्तरी तालुक्यातील काजू रोठा



सोनाळ : ड्रोनच्या साहाय्याने औषधाची फवारणी कशाप्रकारे करता येईल याची माहिती जाणून घेताना सोनाळ येथील शेतकरी बांधव.

हा प्रकार वाढू लागला आहे. यामुळे जुनी झाडे मोठ्या प्रमाणात नष्ट होऊ लागल्यामुळे तालुक्यातील काजू उत्पादनावर याचे विपरित परिणाम दिसून येऊ लागले आहेत. यावर नियंत्रण न आल्यास येणाऱ्या काळात सत्तरी तालुक्यातील काजूचे उत्पादन मोठ्या प्रमाणात घसरण्याची शक्यता यावेळी काजू उत्पादकांनी बोलून दाखविली व त्यावर नियंत्रण कशाप्रकारे राखता येईल यासंदर्भात मार्गदर्शन करण्याची मागणी केली.

तद्नंतरच्या दुसऱ्या खास सत्रात केंद्राचे वरिष्ठ अधिकारी राहुल कुलकर्णी यांनी शेतकऱ्यांना ड्रोनद्वारे भात शेतीवर फवारणीबाबत मार्गदर्शन केले. अत्याधुनिक

ड्रोन यंत्रणेचा वापर करून शेतकरी कशाप्रकारे भात शेतीवर कीटकनाशक फवारणी करू शकतात आणि त्याचे फायदे कोणकोणते याबाबत माहिती दिली. सध्या कामगार मिळणे दुरापास्त बनले आहे. दुसऱ्या बाजूने कामगारांचा वाढता पगार यामुळे सध्यातरी शेती, बागायती करणे परवडणारे नाही. यामुळे ड्रोनच्या माध्यमातून आवश्यक औषधाची किंवा खताची फवारणी करणे शक्य आहे. यासंदर्भात त्यांना विशेष असे मार्गदर्शन करण्यात आले.

याव्यतिरिक्त शेतकऱ्यांना या कार्यशाळेत दुग्ध व्यवसाय, हिरवा चारा आणि शेतकरी आंतरपीक

घेऊन कशाप्रकारे आपले आर्थिक उत्पन्न वाढवू शकतात यावर मार्गदर्शन करण्यात आले. सेंद्रिय खतांचा वापर करणे तेवढेच गरजेचे या एक दिवसीय कार्यशाळेत शेतकऱ्यांना 'जिवामृत' या विषयावर जास्त भर देण्यात आला. शेण, गोमूत्राचा वापर करून जिवामृत कसे तयार करावे आणि जिवामृताचा जमिनीला आणि पीक वाढीसाठी कसा उपयोग होऊ शकतो याबाबत शेतकऱ्यांना मार्गदर्शन करण्यात आले.

यावेळी कार्यशाळेत सहभागी शेतकऱ्यांना तांबडी भाजी, कोथिंबीर, मुळा, पालक, चिटकी या भाज्यांच्या बियांचे मोफत वाटपही करण्यात आले. भविष्यात कृषी विज्ञान केंद्राचे अधिकारी सोनाळ गावात भेट देऊन शेतकऱ्यांच्या शेतात प्रत्यक्ष प्रशिक्षण देणार आहेत.

पत्रकार विश्वनाथ नेने यांच्या समन्वयातून या कार्यशाळेचे आयोजन करण्यात आले होते. कार्यशाळेत श्रीधर काळे, बाळू राणे, किशोर नेने, दाजी मोरे, संभाजी मोरे, कृष्णा नेने, दिगंबर नेने, शिवराम राणे, कृष्णा नार्वकर, चंद्रकांत गावकर, गुरु गावकर या शेतकऱ्यांसह पत्रकार विश्वनाथ नेने यांनी सहभाग घेतला होता.

Live News Goa (Online) Dated 30-05-2023

ICAR-CCARI GOA: AWARENESS PROGRAMME ON DRONE DEMONSTRATION @ MISSION LIFE

May 30, 2023 0



ICAR-Central Coastal Agricultural Research Institute, Goa, and ICAR- KVK, North Goa, organised a programme on awareness and demonstration of drone application in agriculture to the College students of Navalbhau College of Agriculture, Amalner, Jalgaon, Maharashtra; under Mission Lifestyle for Environment.

During this programme, Vinod Ubarhande briefed the students about the importance and application of drone in agriculture. Vishwajeet Prajapati, Technical Officer explained the working principle of drones to the students. Around 45 students attended the awareness programme. The programme was overall coordinated by Dr. Uthappa, A. R, Vinod Ubarhande, Rahul Kulkarni, Vishwajeet Prajapati and Kushmala I.C.

Live News Goa (Online) Dated 30-05-2023

ICAR-CCARI GOA: PROMOTION OF CLIMATE RESILIENT CROPS @ MISSION LIFE

May 30, 2023 0



ICAR-Central Coastal Agricultural Research Institute, Goa, and ICAR- KVK, North Goa, organised a programme on promotion of climate resilient crops in Mayem village, North Goa; under Mission Lifestyle for Environment.

During this programme, Dr. Monica Suresh Singh, SMS (Agril. Extension), briefed the participants about different climate resilient technologies developed by the Institute. She further stressed the importance of climate resilient crops/varieties to cope up with climate change scenarios.

During the programme, vegetable seeds of climate resilient varieties were also distributed to the farmers. Around 25 people attended this programme. The programme was overall coordinated by Dr. Uthappa, A. R., Vinod Ubarhande, Rahul Kulkarni, Vishwajeet Prajapati and Kushnala I.C.

Live News Goa (Online) Dated 01-06-2023

ICAR-CCARI GOA HOSTS INTERFACE MEETING ON RESEARCHABLE ISSUES IN AGRICULTURE & ALLIED SECTORS

June 1, 2023 0



ICAR-Central Coastal Agricultural Research Institute (ICAR-CCARI), organised interface meeting with officers of Directorate of Agriculture, Directorate of Animal Husbandry and Veterinary Services, Directorate of Fisheries, Government of Goa, Goa State Biodiversity Board, Goa State Council of Science and Technology on 31st May 2023 at ICAR-CCARI, Old Goa to discuss various researchable issues pertaining to agriculture and allied sectors.

Dr. Parveen Kumar, Director, ICAR-CCARI, in his introductory remarks highlighted the importance of holding interface meeting with line departments. He further stressed about major problems of agricultural sector in Goa viz., low productivity and low cropping intensity and, suggested suitable solutions to make Goan agriculture self-reliant.

Nevil Alphonso, Director, Directorate of Agriculture, Government of Goa, highlighted need for developing package of practices for major crops like cashew under climate change scenario and aim at sustainable yield.

Dr. Shamila Monteiro, Director, Directorate of Fisheries, Government of Goa in her remarks mentioned that last year there was increase in fish catch which led to decrease in fish price due to distress sale. She further requested to carry out research on post-harvest and value addition in fishery sector.

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ICAR - Central Coastal Agricultural Research Institute in Print Media

Dr. Shirish S. Gaonkar, Assistant Director, Directorate of Animal Husbandry and Veterinary Sciences flagged the issues like infertility, Brucellosis and fodder production.

All the Section In-charges presented the technologies developed by the institute. The meeting was attended by around 45 participants including all the scientists of ICAR-CCARI, Programme Coordinator and Subject Matter Specialists of KVK North and South Goa, and officers from line departments, Goa state Biodiversity Board and Goa State Council of Science and Technology.

During the meeting, action points pertaining to decisions of the last year's meeting was discussed. New agenda points received for the current meeting were discussed in length and action points were formulated to address the same. The meeting was co-ordinated by Dr. Uthappa, A.R., Member Secretary, Interface meeting.

Live News Goa (Online) Dated 01-06-2023

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Times of India Dated 02-06-2023

After a decade, windowpane oysters back on Tiswadi shore

Paul Fernandes

Johnson Stephen

Panaji: Resurfacing of the extremely endangered windowpane oysters along southwest Tiswadi's shoreline is cheering up local fishermen and others, as the unexpected revival has occurred after more than a decade.

Not far from the better known windowpane oyster (*placuna placenta*) habitat of Chicalim bay, this mussel delicacy is being found in the mudflats on Zuari's northern bank.

In the hoary past, the shellfish was found abundantly in many rivers and spots near Goa's coastline. But in recent decades, unsustainable exploitation has triggered its disappearance from many habitats.

"We are happy that window pane oysters are being fo-



Due to its endangered status, the windowpane oysters are included in Schedule IV of Wildlife Protection Act and its extraction is banned

und after 10 to 15 years. But they are still small in size," Yogesh Mangeshkar, a resident of Nauxim, Bambolim said.

In nearby Cacra, St Cruz, local fishermen are unknowingly netting some quantities of

this bioresource in their 'kantay'i' (traditional nets). "Hand-picking is difficult here due to deeper waters," Sanjay Pereira, a fisherman from Cacra said.

► **'Protect sites', P 3**

'Authorities need to protect oyster sites'

► From P 1

The Nauxim bay has been identified as an important windowpane oyster habitat, G B Sreekanth, a fisheries scientist at ICAR said. "The current high harvests may be an indication of the spawning and recruitment success due to favourable environmental conditions, as the oyster fishery depends on these very factors," he said.

The bivalve is an economically important bivalve, as pearls are also found in some of them. But due to its endangered status, it is included in Schedule IV of Wildlife Protection Act and its extraction is banned.

"They are harvested as live shells and also in dead forms. Generally two spawning peaks are recorded for this species — October-December and April-May, though the period may vary," Sreekanth said.

In nearby Chicalim bay, the bivalve survives only as brood

stock due to unregulated harvesting by extractors from far off places. Arriving on two-wheelers, they carry away sackloads and this delays its revival by a few seasons.

Traditional fishermen in Nauxim bay, as in Chicalim, are known to be more sensitive. They have been assisting in ICAR's documentation and opposing illegal fishing in the Zuari river. The Old Goa institution has documented about 450 fish species in Zuari bay. "This area is a fish biodiversity hotspot and illegal and indiscriminate fishing activities disturb the habitat and fish breeding cycle," Pereira said.

"The authorities, especially Goa state biodiversity board and forest department should work out a programme to protect these last few windowpane oyster sites," Cyril Fernandes, an activist and convener of Chicalim Biocru-saders said.

Times of India Dated 05-06-2023

A prickly start to jackfruit's commercial exploitation

Paul Fernandes

Panaji: When the jackfruit first hit the market this season, a medium-sized fruit fetched a princely Rs 700.

For those who have grown up in Goa and around jackfruits, the price would be puzzling. Not too long ago, the humble fruit was often seen rotting on trees, and if removed, was often handed out cheap or free.

Fast forward a few years, and the jackfruit is now a "miracle food" and "future superfood". But although the potential of the prickly fruit is now being recognised, its commercial utilisation remains low.

"Once viewed with inhibition, it has received widespread acceptance as a versatile fruit with many uses due to recent advancements in food technology, and increased media attention," said MJ Gupta, senior scientist, ICAR-CCARI, Old Goa.

The bulbous fruit also holds potential as a meat substitute. "The surge in demand will surely happen, given its utility as an ingredient in vegan meat substitutes and healthy snack options, thanks to efforts of technologists, media, and startups," Gupta said.

Even at peak jackfruit season, consumers pay premium prices for the fruit. A small-sized kapo (a preferred local variety) goes for Rs 200-300 a fruit. "Jackfruit prices have more than doubled due to various reasons, one of them perhaps being low availability in Goa," said horticulturist Miguel Braganza.

In addition to its now well-known health benefits, the jackfruit has even more consumptive uses at various stages than the mango, which



Not too long ago, the humble fruit was often seen rotting on trees, and if removed, was often handed out cheap or free

is tapped as a pickle, sweet, and a table delicacy. Much like the ubiquitous coconut tree, every part of the jackfruit tree from its leaves to its wood has its uses.

"The jackfruit consumability and potential at various stages — from its raw form when it can be pickled, to the ripe form when it can be used as fresh fruit, or its pulp for processing — is vast," said A R Desai, former fruit scientist, ICAR-CCARI, Old Goa.

The fruit can be turned into more than 100 dishes. "As a fruit, having a few carpels (meat) as a snack is like a heavy meal. From raw ones, one can make vegetables, bhajias, papad, chips, and pickles. Half-ripe, should be fully matured for biryani and other dishes (as vegan 'meat'), and while ripe, it can make a variety of sweets," said Sunetra Taulikar, former subject matter specialist, ICAR's Krishi Vigyan Kendra.

However, harvesting it is still a major obstacle. Pluckers are few and the costs and workload high. "Harvesting is a challenge. Not all fruits matu-

re at the same time. A plucker has to be called several times," said Pandurang Patil, a progressive farmer.

Patil himself has devised a technique to cull fruits from lower levels without damaging them.

However, this wonder fruit's commercial exploitation is yet to take off. The Union government had notified jackfruit as a crop for North Goa under one district, one product (ODOP). ICAR, Old Goa, and the state agriculture department have initiated several training modules to encourage entrepreneurs to avail schemes, including the PM formalisation of micro-fund processing enterprises (PMFME) programme.

The Goa state biodiversity board (GSBB) has set up, on pilot basis, a multiprocessing centre at Pale-Kothambi and then replicated the model. "The growth is slow but steady. Many inspired by our initiatives are preparing items, thus reducing jackfruit wastage," said its member secretary, Pradeep Sarmokadam.

Live News Goa (Online) Dated 05-06-2023

ICAR-CCARI GOA: AWARENESS PROGRAMME ON RAIN WATER HARVESTING

June 5, 2023 0



ICAR-Central Coastal Agricultural Research Institute, Goa, and ICAR- KVK, North Goa, organised an awareness programme on rain water harvesting and its efficient use under the theme 'Catch The Rain' on 1st June, under 'Mission Lifestyle for Environment.'

HRC Prabhu, I/c ICAR-KVK, North Goa, briefed the participants about importance of rain water harvesting and its efficient usage growing agricultural crops. Dr. Uthappa, A.R, highlighted the fresh water status in Goa and how rain water harvesting will help Goan population to cope with water problems in future.

Rahul Kulkarni, ACTO explained about different rain water harvesting systems and showed the participants low cost water harvesting structure established at our campus. Total 45 participants mainly women representing self-help groups from Mapusa, Bardez, Pernem and Bicholim attended this programme.

The programme was overall coordinated by Dr. Uthappa, A. R., Vinod Ubarhande, Rahul Kulkarni, Vishwajeet Prajapati and Kushmala I.C. under 'Mission LiFE.'

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Dr. A. Raizada, Director (I/c) in his speech, briefed the audience about the importance of celebrating Environment Day. He stressed the impact of climate change on coastal agriculture. He further motivated the audience to take up tree planting activities and to educate the children about environment.

Dr. Uthappa, A. R., Scientist (Agroforestry) appraised the audience about the aims and objectives of Mission LiFE and gave a brief report about the month-long activities carried out under Mission LiFE in the Institute.

Mission LiFE Pledge-taking activity was facilitated by Rahul Kulkarni, ACTO. Later tree planting activity was carried out in the Farm C block where new hybrids of cashew were planted. The programme was attended by around 50 Institute staff. The programme was compered by Vinod Ubarhande, ACTO (Farm Superintendent). The programme was coordinated by Dr. Uthappa, A. R, Rahul Kulkarni, Vinod Ubarhande, Vishwajeet Prajapati and Kushmala I.C.

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Live News Goa (Online) Dated 06-06-2023

ICAR- CCARI GOA CELEBRATES WORLD ENVIRONMENT DAY @ MISSION LIFE

June 6, 2023 0



ICAR–Central Coastal Agricultural Research Institute (CCARI), Goa and ICAR–Krishi Vigyan Kendra (KVK), North Goa organised a programme to celebrate World Environment Day on 05 June, 2023 under Mission Lifestyle for Environment (Mission LiFE) to encourage sustainable lifestyles.

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Live News Goa (Online) Dated 14-06-2023

ICAR-CCARI: 'MILLETS FOR NUTRITIONAL SECURITY AND PROSPERITY IN THE COASTAL REGION' WORKSHOP HELD

ICAR – Central Coastal Agricultural Research Institute and Krishi Vigyan Kendra, North Goa, Goa organised a workshop on 'Millets for nutritional security and prosperity in the coastal region'. The workshop was organised under the International Year of Millets 2023 to create awareness about the health benefits of millets, promotion of its cultivation and processing for value-addition.

Nevil Alphonso, Director, Directorate of Agriculture, Government of Goa was the Chief Guest of the workshop. He highlighted the prevalent millets cultivated in the state of Goa and need to revive its cultivation for increasing area under millet cultivation.

Guest of Honour, Dr. Pradeep Sarmokadam, Member Secretary, Goa State Biodiversity Board, Govt. of Goa, talked about increasing biodiversity through cultivation of millets and also emphasised upon the health benefits of the millets. Dr. Parveen Kumar, Director, ICAR-CCARI delivered a lecture on 'Shree Anna: Role of millets in global nutritional security, climate adaptations, health and prosperity'. He elaborated in the details about the present status of cultivation and production of millets and different kinds of millets cultivated in the country. He simplified and stressed upon the importance and health and nutritional benefits of the consumption of millets.

'Millets are climate resilient and less water requirement crops and thus makes these certain crops for uncertain future', he said.

An entrepreneur couple, Dilip Balkrishna Sawaikar and Ranjana Dilip Sawaikar, Marcel, were felicitated and declared as 'Brand Ambassadors' of ICAR-CCARI for the state of Goa in appreciation of their role in the processing, value addition, branding and marketing of millets.

Sawaikar had recently inaugurated a millet processing unit under the brand name Jeevak Industries, with the technical support from the ICAR-CCARI, Goa. On the occasion, 30 farmers covering different taluks of the North Goa districts were given seeds of the improved varieties of the major and minor millets with the purpose to conduct Front Line Demonstrations under the technical guidance of experts of KVK and ATMA, North Goa.

The basic aim of the workshop was to initiate establishment of a complete value chain for millets starting from production to its processing and marketing. Linking the producers of millets to the processors was a salient feature of the workshop.

The Chief Guest and Guest of honour assured a wholehearted support to the ICAR-CCARI to promote the millets through systematic evaluation. About, 100 participants including farmers, stakeholders, representatives of state line departments, scientist and staff of the ICAR-CCARI and KVK North Goa attended the workshop. A small-scale exhibition on the millets to exhibit millets and its value-added products was also organised.

Navhind Times Dated 14-06-2023

Revitalising cashew sector in Goa

Goa is the only state that allows the use of cashew apples for feni distillation, providing farmers with opportunities to earn additional income from cashew plantations



Dr. S. Bhat Dr. A. R. Desai

Introduction of cashew from Brazil to Goa by the Portuguese around 450 years ago was mainly aimed at afforestation and soil erosion control. However, this crop has now become a vital component of the state's economy, supporting the livelihoods of farmers, feni distillers, processors and traders. Cashew covers the largest area in Goa, accounting for approximately 45% of the net sown area. Goan cashew is known for its excellent quality, characterized by medium to larger size nuts, a pleasant taste, and a unique aroma. Moreover, cashew plantations in Goa are predominantly organic by default. As a result, raw cashew nuts (RCN) from Goa command a premium price in the market, averaging 22% higher than the rest of India over the past 30 years.

Despite its significance, cashew farming faces multiple challenges in Goa. One of the pressing issues is the declining prices of RCN in the country in general including Goa. Starting at ₹122-123/kg in the first week of March this year, prices dropped to ₹115/kg by the first week of April

Despite its significance, cashew farming faces multiple challenges in Goa. One of the pressing issues is the declining prices of RCN in the country in general including Goa. Starting at ₹122-123/kg in the first week of March this year, prices dropped to ₹115/kg by the first week of April and have further declined to the current rate of ₹100/kg in Goa (Figure). Besides, the problem of the cashew stem and root borer has been a great threat outrightly killing the yielding trees, exacerbating the situation. Rising wages, declining prices and the serious pest problem have adversely affected the profitability of cashew farming.

The problems are not confined to cashew farmers alone. Reports indicate the closure of many cashew processing units in Goa and other states due to persistent losses incurred in the recent past. Even in Kollam (Kerala), also known as the Cashew Capital, out



of 780 processing units, less than 80 units are reported to be operational. This reflects the declining profitability in the cashew sector at large.

To address these challenges, the Goa government has implemented several measures. Three years ago, the state government announced an assured price of ₹125/kg and this year the government intends to raise it to ₹150/kg. The assured price provides some reassurance to farmers in reducing the price risks. In addition, Goa is the only state that allows the use of cashew apples for feni distillation, providing farmers with opportunities to earn additional income from cashew plantations. Feni has secured the Geographical Indication (GI) and it has also been given the status of heritage spirit. Furthermore, the state government introduced an employment subsidy scheme for the cashew industry last year, aimed at encouraging and incentivizing cashew processing in the state with a view to restore small scale processing units.

While these measures provide relief to cashew farmers and processors, there is a need to identify the root causes of the problem for devising a sustainable solution. Presently, there have been reports of cashew produce from outside the state, primarily sourced through cheaper imports, being sold as Goan cashews. This phenomenon exemplifies the "lemons problem" in economics, where sellers possess more information than buyers, making it difficult for buyers to distinguish between authentic and lower-quality produce ("lemons"). Consequently, buyers offer lower

prices as compensation for the quality risk, leading to a downward spiral in prices. For authentic produce sellers, lower prices are not viable; hence, they are forced to leave the market.

The solution lies in empowering consumers with information. Since distinguishing Goan cashew kernels from those produced elsewhere is challenging, if not impossible, certification emerges as the viable option. Although the government has initiated the process of securing GI for Goan cashew, its effective implementation is crucial. The government can maintain a database of Goan cashew output (RCN and kernels) available from various sources (i) production estimates, (ii) market arrivals and (iii) finished product from processing units. By combining these figures, the government can arrive at a better estimate of the annual production of Goan cashew kernels. Leveraging the latest IT based blockchain technologies, the government can empower consumers to digitally verify the authenticity of purchased cashews using their mobile phones. This measure would safeguard the brand value of authentic Goan cashews and incentivize the Goan cashew sector.

Active participation of stakeholders, including farmers, processors, traders and retailers, is vital for the effective implementation of these measures. One possible solution is to establish a state-level cashew board consisting of all the stakeholders, with adequate representation from cashew farmers and other involved parties, with regulatory powers. This board

could help address the grievances of the sector as a whole and also facilitate the implementation of a community-based approach to manage the cashew stem and root borer problem. This year, unusually higher temperature levels coinciding with flowering and fruit set, affected the cashew yield and apple juice recovery. However, farmers have reported that local improved varieties of Goa (Goa cashew 1, 2, 3 and 4) were able to perform better than other varieties. Hence promoting the adoption of multiple high-yielding varieties would enhance the resilience of farms to better withstand weather aberrations thereby minimising the climate impact on yield performance.

Consequently, buyers offer lower prices as compensation for the quality risk, leading to a downward spiral in prices. For authentic produce sellers, lower prices are not viable; hence, they are forced to leave the market

By implementing these comprehensive measures and fostering collaboration among stakeholders, Goa can revitalize its cashew sector with new strategies, ensuring long-term sustainability and prosperity.

(Dr. Shripad Bhat is a senior scientist (Agril. Economics) and Dr. A. R. Desai is a former principal scientist (Horticulture) at ICAR-Central Coastal Agricultural Research Institute, Ela, Old Goa)

Gomantak Times Dated 21-06-2023

From Revolution Day to Green Revolution in Goa

Goa's agricultural landscape has changed considerably over the decades



A couple of days ago, Goa marked Revolution Day. Panjim even boasts of an '18th June Road', and the great professor-poet Dr ManoharRai SarDesai wrote a poem in *amchi bhas, Konkani* entitled *Otthra Jun* to commemorate the day.

The poem has been translated into English, French, and Portuguese and published as a book through the efforts of Fernando do Rego, my senior in the Directorate of Agriculture, and author of the bilingual book *Mangoes of Goa*.

Incidentally, Dr ManoharRai knew, spoke and taught in all the four languages, being a professor of French, and editor of the *Konkani Vishwakosh*, or encyclopedia, published by Goa University.

GOA'S AGRI SCENE

The mango tree, the date and the revolution are inextricably linked.

The oft quoted poem dedicated to the [Goa Revolution Day](#), 18 June, poignantly raises the pertinent question that calls for a response from us, "*Kitle oxo aile, ghele otthra Jun? Ambea-mullant kudd'kuddta Gavddeacho por ozun!*" meaning "How many times has 18 June come and gone? The ST boy is still trembling beneath the mango tree."

It is a familiar scene in Goa, both literally and figuratively, as the Schedule Tribe youth struggle to find their place in the sun, even in the Goa agriculture department. The affirmative response has been slow in coming during the sixty years since Liberation, and eighty years since the Goa Revolution Day. There have been gains, but their distribution is still not even-handed.

We have reached close to the half-way mark in the International Year of Millets or IYM 2023. Efforts are being made to boost the production of finger millet, or *nachni*.

It can be done if there is some enthusiasm, specially to produce pesticide-free food, combining IYM 2023 with the PKVY (*Paramparagat Krishi Vikas Yojana*) that promotes natural farming with the assistance of the union government of India.

Goa needed to be self-sufficient in food crops between 1954 and 1961 due to the 'Economic Blockade' of the *Estado da India Portuguesa* (EIP) territories of Goa, Daman & Diu and Dadra & Nagar Haveli.

The 'economic blockade' taught the people of Goa how to cultivate crops even on marginal lands just to survive and outlive the blockade till Liberation.

With widespread cancer in Goa, where no cases of cancer were reported till the 1960s, people have begun thinking of pesticide-free food, whether organic or naturally grown.

Non-availability of labour, and high wages when available, were a deterrent to rice cultivation and fields have been left fallow since the 1990s.

The introduction of mechanized combine-harvester-thresher with 'custom service' subsidy started a flow of farmers back into the fields. The era of mechanized paddy seedling transplanters, started by Fr George Quadros, sdb, has been an injection of fresh blood and ideas into agriculture.

In Curtorim, Santano Rodrigues is leading in biodiversity and seed conservation, while in Chinchinim, Agnelo Furtado has shown how components of the *comunidades* can be a part of this revolution.

My fellow alumnus at UAS-Bangalore, Dr KK Manohara, is developing seeds at ICAR-CCARI, Old Goa. The homegrown agriculture graduates are powering this revolution into the next generation in Goa.

The author is the former Chairman of the GCCI Agriculture Committee, CEO of Planter's Choice Pvt Ltd, Additional Director of OFAI and Garden Superintendent of Goa University, and has edited 18 books for Goa & Konkan

Times of India Dated 04-07-2023

Growing potatoes in Goa



MIGUEL BRAGANZA

is time to plant the monsoon or Kharif crop of potato in the cooler hillsides of Goa. The ICAR-CCARI's new director has come in 2021 from the Central Potato Research Institute and has put his experience into practice at Verlem, the strawberry village of Sanguem in South Goa. The Kufri Surya and Kufri Pukhraj developed at CPRI-Kufri, near Shimla in Himachal Pradesh, are suitable for warmer regions like Goa.

The deadly fungal diseases of potato known as blight caused food shortages and later famines in Ireland during the 1840s. Between



stem tuber like the Irish potato. Sweet (*Komig*) is an adventitious root that is a storage organ along the creeper.

Potato plants have pinnate leaves with white, pink, blue, or purple flowers and low stamens in clusters as in brinjal plant. Potato flowers are pollinated by insects such as bumblebees. The fruit is like green cherry tomatoes and may or may not have seeds. The fruits are not for human consumption as they contain the toxic alkaloid, solanine, in large quantities. Potato plants are usually propagated by planting tubers rather than from true seeds.

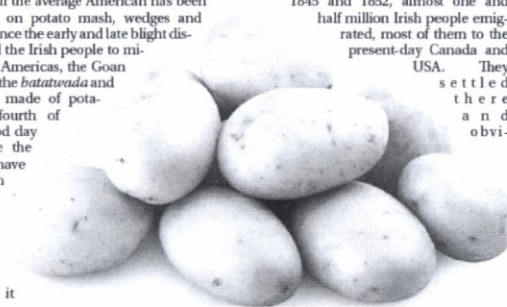
Each tuber has two to ten 'eyes' or buds arranged spirally around its surface. The tuber is capable of producing new shoots and roots under favourable conditions. It is a

common find in sprouting storage tubers start to grow in Goa. It grows the so it is not in soil is whether or in A p for adding soil around the stem should be kept. And the seed material can be found in one's kitchen.

Potato wafers made from mashed potatoes have replaced the deep-fried potato chips. If the average American has been brought up on potato mash, wedges and chips ever since the early and late blight diseases forced the Irish people to migrate to the Americas, the Goan speciality is the *batatavada* and *sukhi bhaji* made of potatoes! The fourth of July is a good day to celebrate the things we have in common with USA, like mangoes and potatoes. It is the month of July and so it

1845 and 1852, almost one and half million Irish people emigrated, most of them to the present-day Canada and USA. They settled there and obviously grew their staple food, the potato, just as any Asian would cultivate rice. They did not have to bring seed potato from the diseased stock in Ireland — potato is of Latin American origin. Even today, potato is the fourth most important source of starch in human diet, with the cereals wheat, rice and maize occupying the first three ranks.

Potato, *Solanum tuberosum*, is commonly referred to as Irish potato although it originated in South America. Its origin is traced to the Andes mountains near Chile, Bolivia, Venezuela and Argentina. It was first reported in Spain in 1573 A.D, after Christopher Columbus 'discovered' America. The sweet potato, *Ipomoea batatas*, only looks like the potato and is a starch source, but it is neither related nor is a



Times of India Dated 05-07-2023

With monsoon being active, sowing and transplanting take off

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Panaji: With the Southwest monsoon being active over Goa since last week, manual sowing of paddy seeds and transplanting using mechanised farming is being taken up in full swing across the state after a two-week delay.

"Nearly 25% of area in Goa has been sown with paddy seeds," director of agriculture, Nevil Alphonso told TOI. "The farmers that undertook mechanised transplanting of three-week-old, germinated seedlings in their fields were able to complete the task faster than

farmers that continue to manually sow seeds," he said.

Majority of the fields that have been able to cover most of their farm areas are mostly plain areas located in Salcete, Tiswadi, Bardez and parts of Quepem. In hilly areas, ploughing and land preparation for sowing is still underway.

"Farmers in hilly areas usually wait until the springs get live and water flows through nullahs to sow the seeds. The water holding capacity in such fields is less because they are more porous," the agriculture director said.

The poor quantity of pre-



Nearly 25% of area under cultivation in Goa has been sown with paddy

monsoon showers this summer failed to prepare the hilly areas for cultivation. However, even after the onset of the monsoon, erratic rainfall has proved to be unfavourable for farmers. Crops that only grow on hilly terrains require proper rainfall for sowing of saplings to begin. In low-lying areas, however, transplanting has already been done.

TOI had earlier reported that only those farmers cultivating in low-lying areas close to lakes started with dry sowing of paddy seeds due to the dampness and the available moisture in the soil. The rest of the sta-

te's agricultural community, however, was affected due to the erratic rainfall in June.

While paddy is being primarily planted or transplanted in farms across Goa, farmers are also sowing seeds of pulses and groundnuts which grow well in the Rabi season. After the completion of planting paddy by the end of July, millet will be taken up for sowing.

Seeds of the finger millet variant from ICAR-Central Coastal Agricultural Research Institute, Goa and similar agricultural institutes at Hyderabad and Dharwad, Karnataka are being sourced for the same.

The Goan Dated 01-07-2023

ICAR introduces incubator at Ella to hand-hold agro entrepreneurs

THE GOAN NETWORK | JULY 01, 2023, 12:54 AM IST

PANAJI

There is good news for new entrepreneurs in the agricultural sector as the ICAR's Central Coastal Agricultural Research Institute has introduced an incubation centre at Ela, Old Goa, from where it will handhold the new agripreneurs.

The Agri Business Incubation Centre (AGNI) at Ela, Old Goa is a new initiative from where those wanting to start new agribusinesses will be provided incubation and mentoring support. It will have a laboratory facility and also give IPR guidance besides holding capacity-building programmes regularly.

Entrepreneurs planning to get into agri-business may contact the AGNI centre at Ella, Old Goa to launch their agri-business start-up by phone - 0832-2993097 or via email at abi.ccari@icar.gov.in. More details can also be got from the webpage ccari.icar.gov.in/agni.

Times of India Dated 11-07-2023

Additional 80-100 ha to come under paddy cultivation

TIMES NEWS NETWORK

Panaji: The directorate of agriculture has distributed a total of 400 tonnes of paddy seeds among farmers this season. The varieties range from salt-tolerant ones such as Goa Dhan 1 and Goa Dhan 3 to Jaya, Jyoti, and Kharjat.

Mostly used in khazan areas, there has been an increased interest from farmers in adopting Goa Dhan 1 and Goa Dhan 3, both of which are hybrid variants of the traditional Goan rice variety, Khorgut. The varieties have been developed by the Indian Council of Agricultural Research (ICAR), Old Goa.

Around 80-100 hectares of



Farmers have shown an increased interest in adopting Goa Dhan 1 and Goa Dhan 3, which are hybrid variants of the traditional Goan khorgut variety

additional area is expected to come under the crop's cultivation this year, under communal farming.

"By and large, the late arrival of the monsoon has delayed farming activities in Goa, but with the past 10 days of

continuous rain, some areas have been revived, while some places have been inundated," said agriculture director Nevil Alphonso.

Farmers in the hilly areas have started cultivation since seasonal springs have come to life, while those in low-lying areas have experienced too much rain. Farmers have reported inundation in areas such as Verna and Divar with the low-lying fields being under water for up to six days. However, the increase in rainfall over the past 10 days has largely been beneficial to most farmers.

"We only hope that the monsoon season prolongs and continues till October so that

crops get enough water," said Alphonso.

There has also been an interest in growing Kharif vegetables this season as a result of which bottle gourd, ridge gourd, and tuber crops are currently being grown. Soon, other greens such as okra, cucumber, and chillies will also be taken up.

Farmers this year will also take up the cultivation of millets at the beginning of August, seeds for which have been sourced from Hyderabad, Dharwad, and local farmers. Simultaneously, seedlings of marigold flowers will also be taken for cultivation in August so that they can be harvested by Dussehra and Diwali.

Times of India Dated 15-07-2023

Goa farms to expand 'barefoot luxury' space for tourists

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the segment.

Panaji: As the Goa government promotes eco and hinterland tourism, various novel concepts are being explored, and one discussed recently was agro-eco-tourism (AET).

At last week's Goa Tourism Board (GTB) meeting, a representative of Indian Council of Agriculture Research (ICAR)-Central Coastal Agricultural Research Institute, Ella, told the GTB that farming and linked processes have the potential to be introduced as experiential travel.

A GTB member said that while visits to spice farms have been popular for a while, a bigger opportunity awaits in

AET, it was stated, will help Goa create its own model of 'barefoot luxury' (slower pace of travel in a lush setting) by harnessing its rich biodiversity, well-endowed agricultural traditions, and cultural heritage.

"The ICAR's suggestion of organising farm tours is wonderful. A segment of tourists will be enthused about farm tours," said the board member. "Men and women sowing in the rain is a beautiful sight. I am sure many will like to step into a paddy field to know how it feels."

Dr R Soloman Rajkumar, a senior scientist at ICAR, placed the idea of AET before the



Biodiversity conservation, harvest festivals, heritage foods, farm stays, and visits to livestock farms are the primary activities listed by ICAR

tourism board.

Agrarian economic activi-

ty — products, services, or experiences — can be linked

with travel. The linkage of the mutual needs of farmers and tourists has the potential to create synergies at different levels.

Biodiversity conservation, harvest festivals, heritage foods, farm stays, and visits to livestock farms are among the primary activities listed by ICAR.

The board member said since Goa is nestled amid the biodiversity hotspot of the Western Ghats, it can be a great AET site, and pique the interest of youth, thus diversifying the tourism market and ensuring year-round income to farmers.

This activity will indirectly enhance the value of farm

produce. More importantly, a farmer will be able to become an entrepreneur. Experiential tours, the board member said, will not just give tourists an opportunity to connect more closely to nature but also give them a chance to understand the culture and heritage of the region.

The board member said that over the past two years, a few have been organising trips to paddy fields in monsoons, focused on gaining likes and views for social media feeds.

While farming has been on the decline in Goa for over a decade, some Goans have come back to their roots over the past few years to resume farming.

ICAR - Central Coastal Agricultural Research Institute in Print Media

Live News Goa Website (<https://livenewsgoa.com>) Dated- 03.08.2023

ICAR – CCARI GOA ORGANISES TRAINING PROGRAMME ON ‘ORNAMENTAL FISH CULTURE’

August 3, 2023 0



ICAR - Central Coastal Agricultural Research Institute in Print Media

ICAR-Central Coastal Agricultural Research Institute (ICAR-CCARI) Goa organised a training programme on 'Ornamental Fish Culture' for women belonging to the Laxmi Ravalnath Self-help Group (SHG) with 14 participants; at Assonora, North Goa.

The one-day training, held on August 2, 2023, was funded by NABARD and aimed to provide knowledge on various ornamental fish culture systems and their management.

The programme commenced with an inaugural address by Dr. Parveen Kumar, the Director of ICAR-CCARI. He emphasised the potential of ornamental fish culture as a means of generating income and supporting livelihoods, highlighting its contribution to the country's overall growth. Further he assured the trainees of full technical support from the institute for fisheries development activities in Goa.

Dr. Shirish Narnaware, the Section In-Charge of Animal and Fishery Science, emphasised the pivotal role of local communities and self-help groups in promoting ornamental fish culture as a viable income source.

Trivesh Mayekar, Scientist coordinator of the training, discussed the scope and national status of ornamental fish culture and stressed the need for its promotion in Goa. He also mentioned that capacity-building and demonstration programmes would be implemented to encourage ornamental fish culture among self-help groups.

Throughout the training, expert lectures covered a range of topics, including the status and scope of ornamental fish farming, commercially important ornamental fish species, breeding methods, disease and feeding management, common commercial ornamental fish species in Goa, and entrepreneurship development through ornamental fish culture.

The programme also featured two invited lectures from subject experts in ornamental fish culture, Dr. Hrishikesh Pawar and Sahil Thakur. Practical demonstrations on tank fabrication, setup, and maintenance, aquascaping, ornamental fish feed preparation, larval rearing, ornamental fish breeding, and fish spa unit setup were conducted. Additionally, the trainees had the opportunity to visit the Institute Aquarium and Aquaculture farm for exposure to real-life practices. During the valedictory function, the trainees provided positive feedback on the programme and the knowledge they gained.

The training was coordinated by Trivesh Suresh Mayekar, Scientist at ICAR-CCARI, Goa, and supported by B. Bjoy Borges and Sameer K. Gaonkar. Technical assistance during the training was provided by Pranjali N. Wadekar.

Outlook website (<https://www.outlookindia.com/>) Dated- 07.08.2023

Crop Losses Reported In Parts Of Goa Due To Extreme Rainfall, Says Minister

Extreme forest fires and unusually high temperatures have not caused major crop losses in the state since June 1, 2020, the minister said.



Goa Agriculture Minister Ravi Naik on Monday informed the state legislative assembly that crop losses have been reported in parts of the state due to extreme rainfall last month.

Naik was responding to a joint question tabled by MLAs Vijai Sardesai, Cruz Silva and Carllose Fereira. As per the annexure provided by the minister on the floor of the House, farmers from Bardez, Canacona, Ponda, Quepem, Sanguem and Sattari talukas have made claims for compensation for crop losses due to incessant rains in the coastal state.

Extreme forest fires and unusually high temperatures have not caused major crop losses in the state since June 1, 2020, the minister said. In a reply to a question about providing weather warnings to farmers, Naik said there is no special plan or protocol for agriculture disaster risk management or crisis management with state agromet service centres (IMD).

“However, the agromet advisory bulletin for Goa issued by the Meteorological Centre, Goa and by ICAR-CCARI, Old Goa is disseminated to farmers regularly to warn/guide/train about upcoming extreme weather events and mitigation measures to avoid crop loss,” he said.

While there is no specific crop loss compensation scheme for farmers with small land holdings, the Shetkari Adhar Nidhi scheme provides compensation for crop losses for all types of farmers, he said. The Pradhan Mantri Fasal Bima Yojana (PMFBY) aims to support production in agriculture by providing an affordable crop insurance product to ensure comprehensive risk cover for crops against all non-preventable natural risks from pre-sowing to post-harvest stage, the minister said.

Times of India Dated 10.08.2023

Invest ₹100cr to protect heritage mangoes: Borkar

TIMES NEWS NETWORK

Panaji: The state has only about 500 trees of the Goan mango variety called Hilario, said MLA Viresh Borkar while speaking in the ongoing monsoon assembly session on Wednesday. Efforts must be made by the directorate of agriculture to not only preserve this variety but also increase the area under its cover, he said.

"Hilario is a unique variety and Goa has at least 105 unique mango varieties. The state government must undertake the Heritage Mangoes Protection Mission by investing at least Rs 100 crore in this project to save these traditional mango variants," Borkar said. "Goan mangoes must be preserved, popularised, and promoted."

Responding to his demand, agriculture minister Ravi Naik said that he will ask the agriculture department's officers to gather details about the Hilario mango variety and decide the appropriate steps to be taken for its protection.

"Promoting such variants will be beneficial to Goan farmers," Naik added.

Chief minister Pramod Sawant said efforts are already being made to document and



KING OF FRUITS

protect various Goan mango varieties.

"The Indian Council of Agricultural Research-Central Coastal Agricultural Research Institute (ICAR-CCARI) and the state directorate of agriculture are working together to research the mango varieties of Goa and are even preserving the seeds," Sawant said. "Mango saplings of buyers' choice are also available at the ICAR-CCARI."

In addition, the patent facilitation centre at State Council for Science and Technology has filed for the Geographical Indication (GI) status for the Goan Hilario Mango (Manghilar or Mangilar/Mangilal). The application is under pre-examination by the GI registrar of India.

Live News Goa Website (<https://livenewsgoa.com/>) Dated -17.08.2023

ICAR-CCARI GOA & GOA SCIENCE CENTRE ORGANISE WORKSHOP ON 'SHREE ANNA'



ICAR-Central Coastal Agricultural Research Institute (CCARI), Goa and Goa Science Centre, Miramar, Goa jointly organised a one-day workshop on “*Shree Anna: Role of millets in global nutritional security, climate adaptation, health and prosperity*” on 14 August, 2023 at Goa Science Centre, Miramar, as a part of “International year of Millets”.

The Chief Guest and Speaker Dr. Parveen Kumar, Director, ICAR-CCARI, Goa, enlightened the audience about importance of millets in achieving nutritional and health security. He briefed the audience about the journey of millets from *Siridhanya* to *Sree Anna*. He also stressed that millets are climate resilient and suitable for marginal land and changing climatic conditions. In his engaging lecture, he educated the home-makers, teachers and students who had come from different parts of Goa to know about the nutritive value and heritage of the wonder crop.

Vilas Chaudhari, Project Coordinator, Goa Science Center & Planetarium welcomed the guests and felicitated Dr. Parveen Kumar. After the lecture, exhibition on “Millets for Health” was also inaugurated by the Chief Guest. The workshop was attended by 250 participants mainly home-makers, teachers and school children from different parts of Goa.

The Navhind Times (Online) Dated - 18.08.2023

Artificial reefs to come up in 14 fishing villages

The fisheries department is exploring the possibility of establishing artificial reefs across 14 villages in seven coastal talukas of the state.

The villages will be finalised after consultations with the local traditional fishermen. The project will be implemented through the Pradhan Mantri Matsya Sampada Yojana of the central government.

“The scheme is mainly being implemented for the benefit of traditional fishermen so that it helps them in increasing fish production. The villages in which the artificial reefs will be established will be finalised after talking to the local population in these villages,” a fisheries department official said.

In this regard, the department will also organise an interactive session soon for presidents/representatives of the traditional fishermen associations and sarpanches of the coastal villages.

The interactive session will be conducted by principal scientist of the Central Marine Fisheries Research Institute (CMFRI) along with officials of Fishery Survey of India and Indian Council of Agricultural Research (ICAR) – Central Coastal Agricultural Research Institute (CCARI).

The session will be held at the Fisheries Training Centre at Ela, Old Goa and at Colva fisheries sub-office. It will highlight the importance of the project through confidence-building among the fishermen.

“Artificial reefs are a centuries-old technique used for aggregating fish. Just like natural reefs, the artificial reefs also provide a home for fish to live and grow, reduce wave damage on coasts, create bedrock for regeneration of the marine ecosystem and act as a carbon sink. They provide a firm substrate for marine life such as corals, algae and plankton to attach themselves and to grow, thereby attracting fish into this area,” the Matsya Sampada newsletter says.

Digital Goa Website (<https://digitalgoa.com/>) Dated -18.08.2023

Artificial reefs to come up at fishing villages in Goa with CMFRI support



Digital Goa, Aug 17 – Directorate of Fisheries will be implementing the Artificial Reefs project to improve the marine life in certain coastal areas of the State and to promote sustainable fishing. An artificial reef is a manmade structure that may mimic some of the characteristics of a natural reef. They are said to provide new location for fishermen to fish and in turn work to ease the pressure on natural reefs. Principal Scientist, Central Marine Fisheries Research Institute (CMFRI) along with the officials of FSI and ICAR – CCARI will have an interactive session with the representatives of the traditional fishermen associations and Sarpanchs of the Coastal Villages to brief them about the project. The session will be held on August 22, 2023 at Fisheries Training Centre, Ela, Old Goa in North Goa at 10 a.m. and Colva Fisheries Sub-Office in South Goa at 3 p.m.

Live News Goa Website (<https://livenewsgoa.com/>) Dated- 28.08.2023

ICAR-CCARI & AUXILIUM HIGH SCHOOL JOINTLY-ORGANISE LECTURE ON MILLETS



ICAR-Central Coastal Agricultural Research Institute (CCARI), Old Goa and Auxilium High School, Panaji, Goa jointly-organised a lecture on “*Shree Anna: Role of millets in global nutritional security, climate adaptation, health and prosperity*” on 26 August, 2023 at Auxilium High School; as a part of “International year of Millets”.

The Chief Guest and Speaker Dr. Parveen Kumar, Director of ICAR-CCARI, Goa, in his address educated the audience about importance of millets in nutritional and health security. He emphasised the adaptability of millets to the changing environment and their suitability for marginal land. He also briefed the homemakers, teachers and students about the nutritive value and heritage of the wonder crop.

Sister Celine Pinto, Headmistress, Auxilium High School, Panaji welcomed the guests and felicitated Dr. Parveen Kumar. The workshop was attended by 300 participants mainly homemakers, teachers and school children. An exhibition featuring different millets had also been set up by Dilip B Sawaikar, Brand Ambassador for promotion of millets in Goa. After the lecture, all the millet products were sold out.



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INTERNATIONAL YEAR OF
MILLETS

2023