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ICAR - KVK ERNAKULAM

Newsletter

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Technology demonstration:
Precision farming of Snap melon



Cage fish farming near
Thuruthipuram, Ernakulam



Demonstration of Soilless planting media as
Part of Swachhhta Pakhwada activity



Swachh Bharat Abhiyaan: cleaning fish
Cages from water hyacinth



ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)

ICAR-Central Marine Fisheries Research Institute
Dept. of Agricultural Research and Education, Ministry of Agriculture and Farmers Welfare Govt. of India
Aarattuvazhy beach, Narakkal Post, Kochi, Kerala-682 505



www.kvkernakulam.org.in | kvk.ernakulam@icar.gov.in | 0484 2972450



MANDATES

The overall mandate of KVK is to develop and disseminate location specific technological modules at district level through technology assessment, refinement and demonstration and to act as knowledge and resource centre for agriculture and its allied activities. The specific activities to carry out this mandate are:

- Conducting on-farm testing to identify the location specificity of agricultural technologies under various farming systems
- Organizing frontline demonstrations to establish production potential of various crops and enterprises in farmer's fields
- Organizing need based training for farmers to update their knowledge and skills in modern agricultural technologies related to technology assessment, refinement and demonstration, and training of extension personnel to orient them in frontier areas of technology development.
- Creating awareness about improved technologies to larger masses through appropriate extension programmes.
- Production and supply of good quality seeds and planting materials, livestock, poultry and fisheries breeds and products and various bio-products to the farming community.
- Work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.

PUBLISHED BY

Dr. A. Gopalakrishnan, Director
ICAR - Central Marine Fisheries Research Institute
Ernakulam North P.O., P.B. No. 1603
Kochi - 682 018, Kerala, India

COMPILED BY

Dr. Shinoj Subramannian
Dr. K. Smita Sivadasan
F. Pushparaj Anjelo | Dr. Vikas P.A
Shoji Joy Edison | P. Sreeletha
ICAR-KVK Ernakulam

FRONTLINE DEMONSTRATION OF NUTMEG SHELLER CONDUCTED

The KVK Ernakulam in association with All India Coordinated Research Project (AICRP) on Farm Implements and Machinery has conducted a Front line demonstration on *Nutmeg sheller* at Kothamangalam on 29th October 2021. The Sheller is used to decorticate nutmeg seeds to take out kernels that fetch higher price than whole seeds in the market. The manual process that is commonly practiced can only decorticate 15 kg in a day. The capacity of the machine is 135 kg per hour. The cost of shelling in the machine is only Rs. 0.70 per kilogram. The



Dr. Sindhu Bhaskar demonstrating Nutmeg sheller

demonstration was conducted by Dr. Sindhu Bhaskar, Principal Investigator of the scheme functioning at Kelappaji College of Agricultural Engineering and Technology, Tavanur, Malappuram. Shri. K. K. Dani, Member, District Panchayath (Ernakulam) inaugurated the programme and Shri. F. Pushparaj Anjelo, Subject Matter Specialist of KVK addressed the gathering. Progressive farmers participated.

KVK TO FORM FISH BREEDER FARMER'S ORGANIZATION (FBFO) IN ERNAKULAM DISTRICT

The KVK Ernakulam formed Fish breeder farmer's organization (FBFO) in Ernakulam district to facilitate farmer-farmer collaboration towards joint production and branded marketing of fish seeds. A Fish breeders meet was organized at Karumaloor on 2nd November 2021 where sixteen fish breeders along with Dr. P. A. Vikas Subject Matter Specialist of KVK participated and chalked out



Fish breeder farmers meet at Karumaloor

the modalities. Mr. Ullas AR, Mr. Deepu Sasidharan and Mr. Shibu Thaithara were respectively elected as President, Secretary and Treasurer. The farmer organization is expected to give momentum to the efforts of KVK in developing fish seed production

enterprises across the coastal areas of Ernakulam district. The KVK had been extending technology backstopping and providing marketing support to farmers through a seed buy-back arrangement and sale through KVK's Farm store.

KVK'S SATELLITE SEEDLING PRODUCTION CENTRE COMMENCED SUPPLY

Satellite production centre are the agro input production hubs of KVK Ernakulam established at various locations in the district in collaboration with farmers/rural entrepreneurs where they produce quality inputs with technology backstopping and quality control of KVK. Marketing support is also being provided by KVK. *Haritham* women group was



Satellite seedling production centre at North Paravur

the one developed under the Mahila Kisan Shaktikaran Pariyojana of Government of India for producing quality vegetable seedlings, located at N. Paravur Block Panchayath campus. The group commenced seedling supply in an exclusive sales mela organized by KVK at N. Paravur on 18th November 2021.

KVK DEMONSTRATES PROFITABLE CAGE FISH FARMING FOR LANDLESS FARMERS

The KVK in collaboration with Palliakal Service Cooperative society, Ezhikkara demonstrated a lucrative model of cage fish farming for landless farmers in Veerampuzha backwaters, a public water body



Young farmers harvesting fish from cages

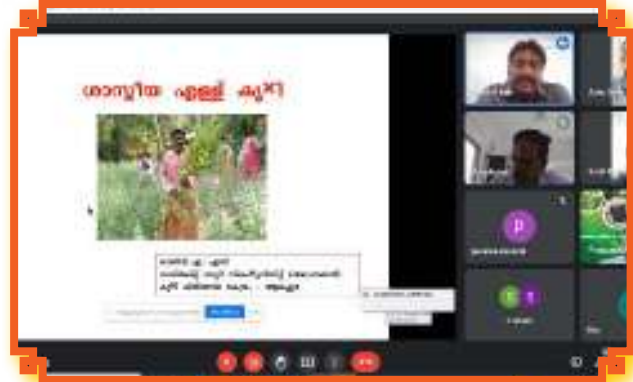
near Ernakulam, Kerala. The KVK initially conducted an entrepreneurship development programme for

the farmers and subsequently conducted series of follow up trainings and provided constant technology backstopping while the Society provided low interest loan to meet the farming cost. Ten metric tons of fish worth INR 50 lakh were produced by group of 30 landless young farmers during this year. Asian Seabass, Pearlsport, Red Snapper, Giant Trevally and Tilapia were the species farmed. This is the consecutive 4th year, KVK-society partnership is proving this cage fish farming model a success. Marketing being the major issue faced by farmers, the Society with guidance of KVK organized a fish tourism mela during this Christmas season where live, fresh, ready-to-cook and ready-to-eat fish varieties were made available to consumers. Wide coverage in various media attracted large number of consumers and the 4 days mela could market 2.3 MT fish worth INR. 12 lakhs. Major advantage of the mela is that this arrangement could avoid middle men and also

transportation expenses thereby farmer could realize 20 per cent additional profit.

KVK CONDUCTS SESAME FARMERS MEET

The KVK conducted a meeting of traditional Sesame farmers of Ernakulam district on 21st January, 2022. A training on *Scientific Sesamum cultivation* was conducted. Shri. Rajeev M. S., Subject Matter Specialist (Agronomy) of KVK Alappuzha was the resource person. Various problems faced by farmers were clarified and scope of centralized procurement, processing and branded marketing discussed.



The online meet progressing

Shri. F. PushparajAnjelo, Subject Matter Specialist (Agri extension) moderated discussions.

KVK SUPPLIES DESI POULTRY CHICKS

In line with the Government of India National live-stock policy to promote and conserve native Desi poultry breeds across the country, the Ernakulam KVK is encouraging farmers to rear native desi poultry breed of Kerala-*Thalassery* in homesteads. The KVK is also supplying two month old and vaccinated chicks to the farmers. Day old Thalasseri chicks sourced from Kerala Veterinary and Animal sciences university (KVASU) are reared under scientific management protocol at KVK's satellite production units



Packed chicks ready for distribution

for supply to farmers. The KVK periodically organizes sales melas to supply chicks. One of such melas organized at Neericode near Ernakulam on 28th January 2022.



Satellite Production centre Poultry chicks at Alangad

OPEN PRECISION FARMING RESULTED BUMPER HARVEST OF SNAP MELON

Open precision farming of Snap melon demonstrated by KVK Ernakulam resulted bumper harvest where yield increase of 70 per cent recorded. The precision farming also improved appearance, overall quality and marketability of melons. The expenditure for fertilization reduced by 60 per cent as the nutrient supply was precisely to the root zone through micro irrigation. The plastic mulching prevented weed growth thereby the weeding cost also could be saved. Low water requirement, less spillage of water and nutrients also contributed towards resource saving. The foliar fertilization resulted in extended harvest and enhanced general health of plants. The KVK conducted a Field day to popularize the technology at Alangad on 24th February,



Shri. P.M. Manaf, President Alangad Grama Panchayath inaugurating the Snap Melon harvest

2022. Alangad Gramapanchayath president Shri. P M Manaf inaugurated the field day and Dr. Shinoj Subramannian, Principal Scientist and Head presided over. Different ready to drink items like Snap melon juice, dessert, shake and diabetic special summer cooler were served to the visitors. Seeds of snap melon were also supplied. Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture) explained Precision farming technology. Smt. P. Sreeletha, Subject Matter Specialist (Home Science) demonstrated various Snap melon products.

KVK PARTICIPATED IN KISANMELA



Shri. Shoji Joy Edison interacting with farmers

The KVK participated in the block level Kisanmela conducted at Kothamangalam Mar Athanasious College indoor stadium on 22nd March, 2022. Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture) conducted an interactive session on *Recent trends in vegetable cultivation and plant protection*.

KVK's partner farmer and Scientific advisory committee member Shri Davis C.A received Harithamithra award for the best organic vegetable farmer in the district. Farmers and Self Help Group (SHG) members from various parts of the district participated.

TRAININGS CONDUCTED

TRAINING ON RESPONSIBLE AQUACULTURE

The KVK conducted training on *Responsible* aquaculture in collaboration with Palliyakkal Service Co-operative Bank, Ezhikkara on 6th October 2021. Dr. P.A Vikas, Subject Matter Specialist (Fisheries) trained the farmers. Twenty cage fish farmers participated. Participants were advised to use formulated

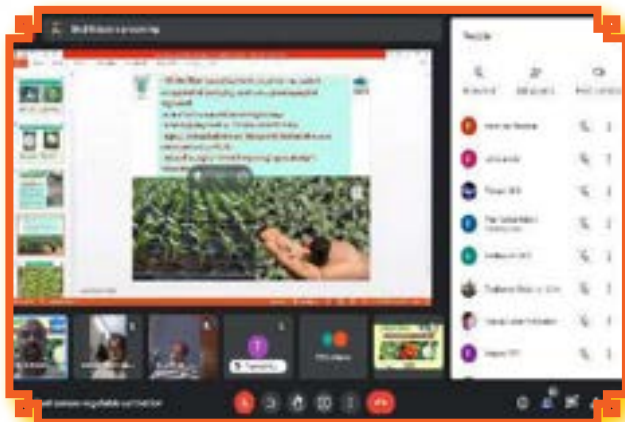


Dr. P.A. Vikas conducting training

pellet feed in place of low value fish feed to reduce environmental pollution. Biological defense mechanisms to reduce massive invasion of black mussel *Mytella strigata* was demonstrated in the training.

TRAINING ON COOL SEASON VEGETABLE FARMING

KVK is promoting cool season vegetable cultivation in Ernakulam district for the last 8 years. To awaken the interest among farmers on cool season vegetable farming, an online training was conducted on 13th October, 2021. Another training on *Cool season vegetable farming* was conducted in association with North Paravur Block Panchayath on 18th November 2021 at North Paravur. The programme was inaugurated by the Block Panchayath president Smt. Simna Santhosh. Both the trainings were conducted by Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture). The trainings covered seedling



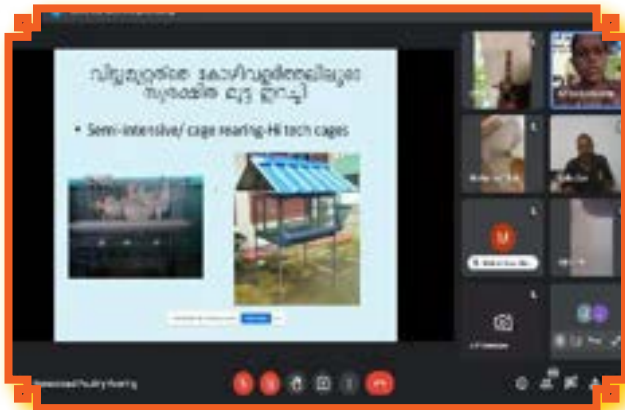
Online training on Cool season vegetables



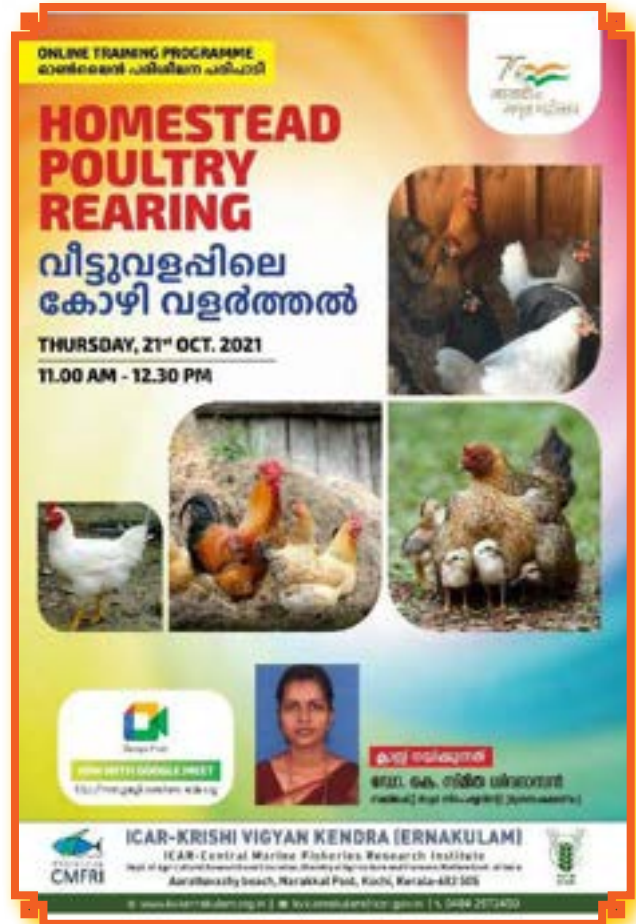
production, varietal selection, production, pest and disease management. Cabbage, cauliflower, broccoli, carrot, beetroot, radish and onion are the cool season vegetables suitable in homesteads of Ernakulam district. The KVK is also supporting farmers by supplying seedlings through its Satellite production centres.

TRAINING ON HOMESTEAD POULTRY FARMING

The KVK is promoting safe egg and meat production from homestead poultry farming in Ernakulam district as part of its flagship programme *Self farming for safe food*. An online training on Homestead poultry farming was conducted on 21st October, 2021. Dr. K Smita Sivadasan, Subject Matter Specialist (Animal husbandry) trained the farmers. Breed selection, management, housing, feeding, watering, care and management of chicks, disease



Online training on Homestead poultry farming



management, preventive measures including vaccination, specialized eggs, marketing techniques etc. were covered.

TRAINING ON SCIENTIFIC BANANA FARMING



The KVK in association with Krishi Bhavan and Swashraya Karshaka Samithi, Keerampara conducted training on *Integrated Pest Disease and nutrient management in Banana* for progressive farmers on 18th November 2021 as part of the Krishi Padashala (Farm school) programme of the Department of Agriculture, Govt. of Kerala. The programme was inaugurated by Kothamangalam MLA Shri. Antony John at Keerampara Swashraya Karshaka Samithi hall. Shri. V.C Chacko, President Keerampara Gramapanchayath, Shri. K.K. Daney, Member, Ernakulam district Panchayath were present. Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture) conducted the training.

Shri. Shoji Joy Edison conducting training

**TRAINING ON
PEARLSPOT FISH
SEED PRODUCTION**

The KVK Ernakulam conducted one day training on *Pearlspot fish seed production* at Karumaloor on 10th February 2022. Topics Scientific seed production, brood stock management and long distance seed transportation protocols were covered. The KVK has been training and supporting traditional fish farmers to take up Pearlspot seed production as an income generating enterprise. As a result, 10



Trainees attending field experience training

trainee farmers have established seed production units in the district with overall annual production capacity of 5 lakhs seeds per year.

**CAPACITY BUILDING
PROGRAMME SERIES:
PROFITABLE DAIRY
FARMING AND LIVESTOCK
MANAGEMENT**

The KVK conducted a series of 5 capacity building programmes each three days duration under the project Capacity Building of farmers through training programmes on Profitable dairy farming and Livestock management sponsored by Ministry of Fisheries, Animal Husbandry and Dairying, Government of India. Programme on Scientific goat rearing conducted during 25.02.2022 to 27.02.2022 at Varappetty, Ernakulam was inaugurated by Shri. M G. Ramakrishnan, President, Varappetty Service Co-

operative bank. Dr. K. Smita Sivadasan, Subject Matter Specialist (Animal husbandry) trained the farmers covering sessions on scientific practices in brood stock selection, housing, feeding, breeding management, common diseases, vaccinations, bio-security measures and marketing of products. Field visits and interaction with progressive goat farmers were also part of the training.

Programme on Feeding and management of dairy cows conducted during 02-05 March at Ezhikkara, Ernakulam was inaugurated by Shri. M.S. Jayachandran, President, Palliakkal Service Cooperative bank. Dr. K. Smita Sivadasan, Subject Matter Specialist (Animal husbandry) trained the farmers. The programme also included field visits and interaction with progressive farmers.



Training programme on Scientific goat rearing progressing



Dr. Smita Sivadasan demonstrating animal diagnostic kit

Programme on *Livestock manure and usage in organic farming* conducted during March 7-9, 2022 at Varapetty, Ernakulam was inaugurated by Shri. Chandrashekharan Nair, President, Varapetty Grama panchayat and the programme conducted during March 15-17, 2022 at Pallarimangalam, Ernakulam

was inaugurated by Smt. Khadeeja Mohammed, President, Pallarimangalam Gramapanchayath. Shri. F. Pushparaj Anjelo and Shri. Shoji Joy Edison, Subject Matter Specialists trained the farmers. Method demonstrations were also conducted.



Training on Livestock manures and usage in Organic farming progressing



Inauguration of training programme at Pallarimangalam

Programme on Poultry rearing in homesteads conducted during March 9-11, 2022 at Edavanakkad, Ernakulam was inaugurated by Smt. Aseena Abdul Salam, President, Edavanakkad Grama panchayath. Dr. P.A. Saira, Veterinary surgeon, Edavankkad Veterinary dispensary participated. Dr. K. Smita Sivadasan, Subject Matter Specialist (Animal husbandry) trained the farmers.



Shri. Pushparaj Anjelo demonstrating Panchagavya preparation



Inauguration of capacity development programme on Poultry rearing in homesteads at Edavanakkad

PROGRAMMES PARTICIPATED

Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture)

- Training on *Plant Health Management* conducted by National Institute of Plant Health Management (NIPHM), Hyderabad during 4-8th October, 2021.
- Training on Integrated Pest Management conducted jointly by Agricultural Technology Application Research Institute (ATARI), Bengaluru and ICAR-National Centre for Integrated Pest Management (NCIPM), New Delhi during 21st to 23rd October, 2021.
- General body meeting of Agricultural Technology Management Agency (ATMA), Ernakulam at Collectorate, Ernakulam on 13th December 2021.
- *Agricultural Knowledge Centre meeting*, Alangad on 5th February, 2022.
- *Multi disciplinary diagnostic team (MDDT) visit to farms at Uliannoor, Ernakulam on 7th February, 2022.*

Dr. K. Smita Sivadasan, Subject Matter Specialist (Animal husbandry)

Webinar *Basic diagnostic aids for diagnosis of gastrointestinal tract affections* organized jointly by College of Veterinary and Animal Sciences, Shirwal, Maharashtra and Alembic Pharmacy Ltd. on 8th February 2022.

Dr. P. A Vikas, Subject Matter Specialist (Fisheries)

- One day Generic Online training in *Cyber security* organized by Information & communication technology unit, Indian Council of Agricultural Research, New Delhi on 29th October 2021.
- Webinar on *Antimicrobial resistance in aquaculture - Who is responsible?*, organized

by ICAR-Central Institute of Brackishwater Aquaculture, Chennai on 9th November 2021.

- Webinar *e-Commerce* organized by Agri-Business Incubation center of ICAR-National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI) on 17th December 2021.
- Online workshop *Technology Backstopping to FPOs* organised by ICAR-Agricultural Technology Application Research Institute (ATARI), Bengaluru in collaboration with the University of Agricultural Sciences (UAS), Bengaluru on 11th February, 2022.
- Stakeholder Consultation meet on *Qualification Files* organized by Agriculture Skill Council of India (ASCI) on 21st February 2022.
- Webinar *Diversification in Aquaculture* organized by ICAR-Central Marine Fisheries Research Institute, Kochi on 10th March 2022.

CELEBRATION OF IMPORTANT DAYS

MAHILA KISAN DIWAS

The KVK Ernakulam conducted a Skill upgradation in cage culture exclusively for women fish farmers of Ernakulam district on the occasion of Mahila Kisan Diwas held on 15th October 2021. The programme was designed to impart advanced skills towards enhancing production and also to impart marketing skills among the women farmers towards sustainable and profitable farming. The women self help group Henok located near Thuruthipuram in Ernakulam is identified as the torch bearer to spread the technology among more women groups in the district. Dr. P. A. Vikas, Subject Matter Specialist (Fisheries) conducted the skill upgradation programme. Smt. Shilja Jenson, Fisheries promoter participated and addressed the gathering.

WORLD FOOD DAY

World food day was celebrated at KVK on 16th October, 2021 by organizing awareness campaign to fisherman community. Smt. P. Sreeletha, Subject Matter Specialist (Home science) explained the importance of having safe and balanced food in our diets. Significance of pesticide residue free cereals, vegetables, safe to eat meat, chemical preservative free fish etc. were explained. Participants were also educated on growing vegetables in their



Smt. P. Sreeletha conducting awareness campaign

homesteads to ensure self production of safe vegetables. The theme of World food day 2021 was *Safe food now for a healthy tomorrow.*

VIGILANCE AWARENESS WEEK

The Vigilance awareness week was celebrated at KVK Ernakulam during 26th October to 1st November 2021. All staff members have undertaken integrity pledge on 26.10.2021 administered by Dr. K. Smita Sivadasan, Subject Matter Specialist. Posters on *Public Interest Disclosure and Protection of Informers Resolution, 2004* were displayed in the campus. A short message was circulated in farmer Whatsapp groups to encourage them to undertake E-pledge. Subsequently an online integrity pledge was administered to farmers on 26.10.2021 by Shri. F. Pushparaj Anjelo, Subject Matter Specialist. An offline integrity pledge was also administered to farmers on 29.10.2021 at Kothamangalam by Shri. Sineesh Ambi, Technician. A sensitization programme was organized on 30.10.2021 at KVK for school students. A *brief talk on Corruption - how it affects the citizens* was delivered by Shri. Shoji Joy Edison, Subject Matter Specialist. A lecture on *how to be vigilant against Corruption* was delivered by Dr. K. Smita Sivadasan, Subject Matter Specialist. Essay writing and Elocution competitions on theme *Independent India @ 75: Self Reliance with Integrity* were also held. Ms. Arya Manoj, Ms. Anu Nandhana and

Ms. Alphonsa Mariya respectively won the first, second and third prize for Elocution competition and Ms. Aleena Kochuthresya, Ms. Sreejitha A. J and Ms. Sayoojya Sathyan respectively won the first, second and third prize for essay writing competition.



Prize distribution - Essay writing Vigilance week awareness

WORLD SOIL DAY

The KVK celebrated World Soil day by conducting awareness programme on Climate change and Soil health management on 5th December, 2021. Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture) conducted a session on *Scientific soil health*

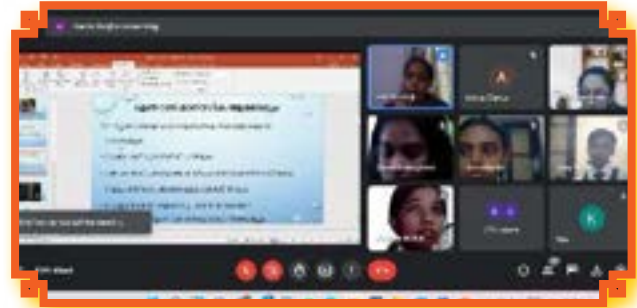
management followed by video presentation on How to collect soil samples and session on Soil Collection Techniques for soil testing by Shri. F. Pushparaj Anjelo, Subject Matter Specialist (Agricultural Extension). Progressive farmers, school students and KVK staff participated.

NATIONAL GIRL CHILD DAY



Shri. Pushparaj Anjelo explaining soil sampling methods

The National girl child day was celebrated at KVK on 24th January 2022 by conducting a webinar on *Adolescent girls and mental health* lead by Smt. Susan Jacob, renowned Child Psychologist. The webinar was attended by more than 250 girl children from two schools in Ernakulam district. Smt. Susan Jacob interacted with the children where various questions raised were answered and practical solutions suggested. Smt. P. Sreeletha, Subject Matter Specialist coordinated the webinar.



Smt. Susan Jacob, Child Psychologist interacting with children

INTERNATIONAL WOMEN'S DAY

The KVK celebrated International Women's Day-2022 on March 8th by felicitating two woman farmer entrepreneurs at Varappetty, Ernakulam. One of them *Smt. Mini Cherian* is a medical professional turned farmer who is into breeding of goats, rabbits and poultry supplying quality seeds. She is also producing vegetables and fruits in her integrated farm. *Smt. Mini* is currently earning INR. 7.6 lakhs annually. Another entrepreneur *Smt. Mary Markose*, an employee turned farmer is into dairy farming, fruit and vegetable cultivation who is currently earning INR. 8.7 lakhs annually. *Smt. Mary Markose* is also giving employment to 5 fellow women of her locality.



Felicitating women farmers on International women's day

PM KISAN SAMMAN NIDHI FUND RELEASE

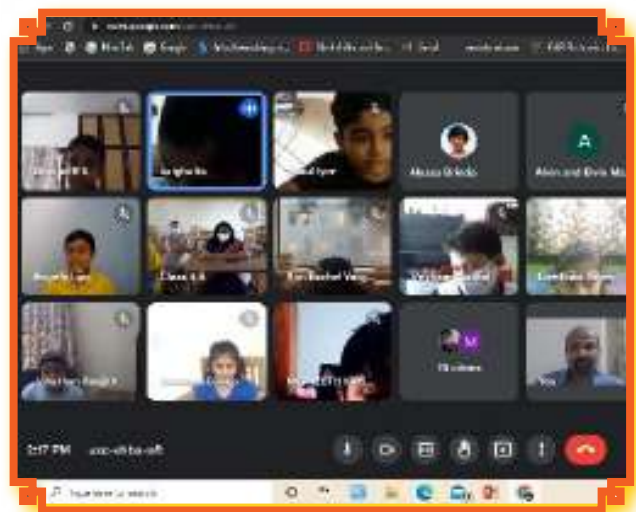
The KVK webcasted PM Kisan Samman Nidhi Fund Release programme on 1st January 2022 at Karumaloor. The fund release was done by Honorable Prime minister Shri. Narendra Modi in a National level online programme. The webcast of KVK was attended by progressive farmers and members of Kisan Service Society, Karumaloor. During the occasion, Dr. P. A. Vikas, Subject Matter Specialist explained the role of Farmer producer organizations (FPOs) on enhancing income and reaping higher profits from Agro enterprises.



PM Samman Nidhi webcasting and interaction with farmers

NATIONAL CAMPAIGN ON AGRICULTURE AND ENVIRONMENT: THE CITIZEN FACE

As part of the monthly National level campaigns organized by Indian Council of Agricultural Research under *Azadi Ka Amrit Maholsav*, the Ernakulam KVK conducted an online training and quiz competition to Green Brigades of Jeevas Public School, Aluva. The Green brigades are the students who steers the agriculture and environmental activities of the school. Team Class V was the winners of the quiz competition. Interactive lecture on *Environment and plastic pollution* and a session on *Home gardening* by KVK Subject matter specialist Shri. Shoji Joy Edison was also held.



Shri. Shoji Joy Edison interacting with school students

POSHAN VATIKA MAHA ABHIYAAN

The Poshan Vatika Maha Abhiyaan was conducted in collaboration with Block Panchayath, North Paravur on 17th September, 2021. A training on cool season vegetable cultivation conducted for farmers. Seedlings of cool season vegetables distributed in sales mela.



Training on Cool season vegetable farming as part of Poshan Vatika maha Abhiyan

SWACHH BHARAT ABHIYAN: TECHNOLOGIES DEMONSTRATED



1. BRANDED ORGANIC MANURE FROM FISH WASTE



Demonstration of fish manure production

The manure produced by aerobic composting of fish waste is an excellent plant nutrient source. The KVK regularly conducts training programmes on commercial production of this organic manure. The KVK conducted hands on training on *Production of organic manure from fish waste* on 6th October 2021 as part of Special Swachhta Campaign. The programme was inaugurated by Smt. Lijy Dennis,

Member, Munambam Gramapanchayath. Smt. P. Sreeletha, Subject Matter Specialist (Home Science) demonstrated step by step process involved in organic manure production from fish waste. The KVK also introduced a common brand for organic manure produced by its trainees. There are two units established in Ernakulam to manufacture organic manure under the technology backstopping of KVK. Branded packing covers were distributed to successful trainees in a programme held at Munambam on 20th December 2021 as part of *Swachhta Pakhwada*. The common branding is expected to augment marketing avenues for the product.



Smt. P. Sreeletha conducting training on Fish manure production



Common brand for KVK trainees



2. BANANA FARM RESIDUES TO REDUCE CHEMICAL FERTILIZER USAGE

The KVK Ernakulam demonstrated mechanized shredding of residues from harvested banana plantations and incorporation into soil as part of its *Swachhta Pakhwada* at Ayyampuzha in Ernakulam district, Kerala. The left over stems once shredded



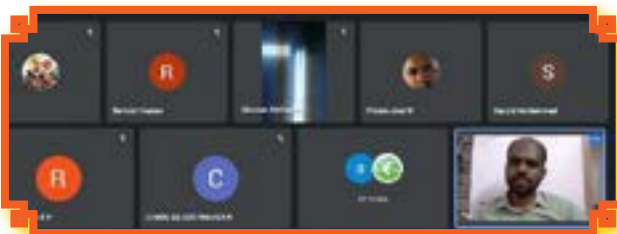
Demonstration of waste shredder in Banana field

into small pieces are easy to get composted and incorporated in soil. This also makes farm clean while enhancing organic matter content of the soil. One acre banana plantation generates 30 MT of biomass residue and the tractor operated waste shredder demonstrated by KVK can shred banana stems of this quantity in 8 hours. Properly composted banana biomass from one acre area if used in situ can enhance organic matter by 0.1 to 0.2 per cent and that can reduce chemical fertilizer requirement by 16 per cent. Making Silage for dairy animals is also a possibility being explored by KVK. Generating wealth from waste is a flagship programme envisaged in the *Swachh Bharat Abhiyan*.



3. BIOLOGICAL MANAGEMENT OF AQUATIC WEEDS

The KVK Ernakulam conducted a training program *Biological management of Aquatic weeds* as part of its *Swachhata Pakhwada* on 27th December 2021. Many of the fresh water resources in the district are



Online training on Biological management of Aquatic weeds

infected by different types of aquatic weeds and algae resulting transformation of these precious water resources into waste dumping yards. This not only lowers ground water levels, but also leads to flooding during monsoon. Cleaning of water sources and maintaining them tidy is essential. Rearing herbivorous fishes to feed algae/aquatic weed plants is a viable environmental friendly solution. Grass Carp (*Ctenopharyngodon Idella*) is an ideal candidate that has ability to feed aquatic weed voraciously about 2 to 3 times of its body weight daily. Releasing 20 Grass Carps of 500 gm size can manage 1 acre pond.



4. SOIL-LESS PLANTING MEDIA FROM AGRO INDUSTRY RESIDUES

The KVK has been popularizing Soil less planting media, a mixture of composted pressmud (Sugar mill residue), Coir-pith (Coir industry residue) and Cow dung powder (Farm residue) enriched with Neem cake and bio control agents as part of its *Swachh Bharat Abhiyan*. This nutritionally rich mixture is proven as an excellent planting media for urban horticulture. Scarcity of soil is a great issue faced by urban farmers in Kerala. The KVK conducted a training on *Soil-less planting media production* on 22.12.2021 at Keezhmad, Ernakulam as part of its *Swachhta Pakhwada-2021*.



Demonstration of Soilless planting media production



5. WATER HYACINTH ERADICATION TOWARDS CLEAN FISH FARMS

Water hyacinth (*Eichhornia crasippes*) that grows in water bodies creates havoc to fish farmers as it considerably reduces water flow and depletes oxygen in fish farms. The fish farmed in cages are most affected. Water hyacinth also acts as a breeding ground for parasites and other hazardous organisms that cause diseases to fish. The KVK conducted an orientation programme on ill effects of water hyacinth on fish production and its eradication methods. A massive cleaning drive was conducted by engaging young fish farmers at Ezhikkara, Ernakulam where the water hyacinth accumulation was cleared from an area of 2 acres on 24th December 2021 as part of KVK's Swachhta Pakhwada.



Demonstration of water hyacinth eradication



6. IDEA PITCHING COMPETITION FOR SCHOOL STUDENTS

The KVK conducted *Idea pitching competition on Innovative ideas for waste management* for school students during the Swachhata Pakhwada. Master. Manu Malik F.M.C.T.H.S.S, Karumalloor won the

first prize, Kum. Meenakshi Biju, Chavara Darshan Public School, Koonamaavu won second prize and Master. Sonel M. Shibu, Master. Abhishek Shaji, F.M.C.T.H.S.S, Karumalloor together won third prize. Ideas of students included constitution of ward-level team to conduct orientation in each home on appropriate waste management strategy, conducting campaigns on usage of cotton reusable napkins in place of single-use plastics, promotion of electric vehicles, encouraging use of public transport facility, imposing ban on manufacturing of plastic carry bags, discouraging usage of low-quality plastic products, promoting usage of metal utensils in place of plastics, converting waste into manures, energy generation from waste etc.



Winners of idea pitching competition



7. TRAINING ON ORGANIC MANURE PRODUCTION

KVK Ernakulam organized a training on utilizing various wastes like kitchen waste, farm waste etc., and converting into nutrient rich organic manure for enhancing the production of crops and improving soil health. Various composting methods available, their cost, efficiency and the problems faced were discussed. Efficient segregation and composting of waste at source was discussed to promote use of organic farming for producing safe and healthy food. Also use and importance of such organic manure for crop production was discussed. Dr. D. Girija, Retd. Professor and Head, Kerala Agricultural



Training on Organic manure production

University led the training programme organized in online mode on 24th December 2021 with 100 participants.

TECHNOLOGY DISSEMINATION THROUGH MASS MEDIA

RADIO

Vikas P.A. കൂടുമത്സ്യ കൃഷി സാധ്യതകൾ കേരളത്തിൽ, VayalumVeedum, All India Radio, Thiruvananthapuram broadcasted on 19th January 2022.

NEWSPAPERS

KVK Ernakulam has disseminated technological information and programme updates among farmers through 57 newspaper reports in both Malayalam and English dailies.

WEBSITE

The Webpage of KVK Ernakulam disseminated 75 relevant information for farmers with a page hit of 1471.

FACEBOOK

The facebook page of KVK ernakulam disseminated 15 information that was followed by 11000 members.

TWITTER

The twitter handle of KVK Ernakulam disseminated 90 tweets having 590 tweet impressions.

WHATSAPP

The WhatsApp groups of KVK disseminated 47 farm advisories to reach 91 progressive farmers.

YOUTUBE

The youtube channel of KVK Ernakulam disseminated two video programmes that was watched by 700 members.

COLUMNS IN PERIODICALS

Vikas P.A. Subject matter specialist (Fisheries). മത്സ്യകൃഷി : ചോദ്യം-ഉത്തരം, Karshakashree Book 28 Issue 2,3,4,5,6,7.

PUBLICATIONS

1. Smita Sivadasan K and Shinoj Subramannian. 2021. Supplementation of Bypass fat during early lactation in high yielding cross bred cows ensures good returns. J Krishi Vigyan 2021, 10 (1): 283-286.
2. Vikas P.A and Shinoj Subramannian. 2021. കരുത്തകല്ലുമാക്കിയ ഒരു ജലാശയങ്ങളിലെ പുതിയ വില്ലൻ. Kerala Karshakan. October. Book No 67. Issue 2. Page 59-61.
3. Shoji Joy Edison and Shinoj Subramannian. 2021. പഴവർഗ്ഗങ്ങൾ വീട്ടുവളപ്പിലും ടൊസ്റ്റിലും. Kerala Karshakan. October. Book No 67. Issue 2. Page 57-68.

4. Vikas, P.A and Shinoj Subramannian. 2022. Innovative approach to market live fish at premium price- diversification initiative. Krishijagran. Pages 1-3. ISSN 2455-8184.
5. Vikas P.A and Shinoj Subramannian. 2021. കൂടു മത്സ്യകൃഷി. Kerala karshakan. December. Book 67. Issue 4. Pages 16 -18.
6. Shoji Joy Edison and Shinoj Subramannian 2022. വേനലിൽ കുളിരേകാൻ പൊട്ടുവെള്ളി Karshakashree. March. Book No 28. Issue 3. Page 66-67.
7. The KVK produced 810 Thalasseri poultry chicks and 735 Kadaknath poultry chicks at it's Satellite poultry chick production centre, Alangad and partner farmer Shri Mathew Vithayahtil earned INR 2,73,750/-

COLLABORATIONS

The KVK collaborated with various organizations by sharing it's expertise for their programmes during the report period.

FARMER PARTICIPATORY PROGRAMMES

1. The KVK produced 3,750 numbers vegetable seedlings, 150 numbers Curry leaf saplings, 100 Papaya saplings, 250 Drumstick saplings and 350 ornamental plants at it's Satellite seedling production centre Miracle Microgreens, Cherai. The partner farmer earned INR 27,230/-
2. The KVK produced 62,750 vegetable seedlings at it's Satellite seedling production centre, Haritham group, North Paravur and the partner farmers earned INR 1,56,875/-.
3. The KVK produced 1,750 numbers of Sree Padma Yam setts and 650 numbers of Sree Pavithra & Sree Raksha cassava stumps at it's Satellite tuber seed production centre and partner farmer Shri. Jacob Mathew earned INR 55,100/-.
4. The KVK produced 400 kg organic manure from fish market waste at it's Satellite manure production centre Ivy's Agro Hub, Cherai and the partner farmer Smt.Ivy Jose earned INR 16,000/-.
5. The KVK produced 15,000 numbers of Pearlsport seeds at it's Satellite fish seed production centre, Karumaloor and the partner farmers Shri. Shibu T.S, Shri. Sarin C.S, Dr. Lala, Shri. Justin Maxi, Shri. Ullas A.R, Shri. Deepu Sasidaran, Shri. Santhosh kumar, Smt. Shiby Sajan, Smt. Sindu Prasad, Shri. Prasad, Shri. Venu T.S and Shri.Akhil Baiju together earned INR. 14.00 lakhs.
6. The KVK produced 300 litres of Panchagavya, 800 Kg enriched cowdungat it's Satellite cow produce production centre, Vengoor and partner farmer Shri. C.T Dinoj earned INR 46,000/-

Agricultural Technology Management Agency (ATMA), Ernakulam

The KVK collaborated with ATMA, Ernakulam in organizing farmer's training programme on *Banana cultivation* organized at Pothanicaud Farmers Bank Complex on 25th February, 2022. KVK also attended ATMA - DFAC and GC meeting at collectorate on 13th December, associated as resource persons in ATMA Krishi Padhshala jointly organized by Krishi Bhavan Keerampara and KVK Ernakulam on 18th November and delivered lecture on IPDNM in Banana" and conducted training for farmers on "New trends in vegetable cultivation and plant protection" at District award ceremony and ATMA block Kissan mela MA college indoor stadium on 22nd March, 2022.

SAMETI, Thiruvananthapuram

The KVK collaborated with SAMETI, Thiruvananthapuram to conduct online training on *Aquaculture in Homestead Ponds* on 23rd February 2022 wherein Dr. P.A Vikas, Subject Matter Specialist (Fisheries) delivered a lecture on *Fish farming prospects and practices*.

Lead District Bank, Ernakulam

The KVK participated in District online monitoring committee meeting on 4th February, 2022 and DLRAC Meeting of Rural Self Employment Training Institute (RSETI) on 28th December 2021 held at Collectorate, Kakknad.

Fisheries Department, Govt. of Kerala

The KVK participated in Pradhan Mantri Matsya Sampada Yojana (PMMSY) district committee meeting on 31st December 2021 held at Collectorate, Kakknad.

Regional Agricultural Trainers Training Centre (RATTC)

The KVK collaborated with RATTC to conduct Human resources development programme for Agricultural Assistants on 26th October, 2021 at RATTC, Vytilla. Shri F. Pushparaj Anjelo, Subject Matter Specialist delivered lecture on *Organic farming and Organic input production*.

Dr. P.A Vikas, Subject Matter Specialist (Fisheries) delivered online lecture on *Cage fish farming* on 7th March 2022. Shri. Shoji Joy Edison, Subject Matter Specialist (Horticulture) delivered lecture on *Organic vegetable cultivation* on 9th March, 2022.

Jan Shikshan Sansthan

The KVK associated with Jan Shikshan Sansthan in assessing candidates of their Small holder poultry training sponsored by Ministry of Skill development and Entrepreneurship, Govt. of India. The assessments were held at Kunnamavu and Narakkal during 22-23 March 2022. Fourty trainees were assessed by Dr. K. Smita Sivadasan, Subject Matter Specialist (Animal husbandry) for their theoretical and practical knowledge acquired during the training.

University of Kerala, Thiruvananthapuram

The KVK associated with University of Kerala, Thiruvananthapuram in their National level webinar *Surviving the pandemic through Aquaculture: The Kerala experience* organized during 24th and 25th February 2022. Dr. P.A Vikas, Subject Matter Specialist (Fisheries) delivered talk on *Surviving the pandemic through aquaculture: interventions* of ICAR KVK Ernakulam.

ICAR-Central Institute of Fisheries Technology (CIFT)

The KVK associated with ICAR-Central Institute of Fisheries Technology (CIFT), Kochi in the International online Training Programme on *Recent advances in harvest and post-harvest technologies* organized during 28th October-10th November, 2021. Dr. P.A Vikas, Subject Matter Specialist (Fisheries) delivered a lecture on *Recent advances in freshwater fish farming* on 8th November 2021.

KVK IN SERVICE OF FARMERS

Total of 30 hours of Farm machinery rental services were provided to farmers during the second half of 2021-22 and income of INR 6,800 generated.

PERSONNEL

PROMOTION



Dr. Shinoj Subramannian

Principal Scientist and Head w.e.f 25.04.2017

TECHNOLOGY UPDATES

1. CIBAMOX, a microbial consortia developed by ICAR-Central Institute of Brackishwater Aquaculture (CIBA), Chennai is good for management of ammonia in brackish water ponds. Routine application improves water quality, enhances phytoplankton production and improves soil health.
2. CIFA carp starter, the feed developed by ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar enhanced the growth rate and induced better colour to fingerlings during nursery rearing phase. Wastage was only 5 per cent as it is a floating type feed, whereas sinking feed wastage is 20 per cent.

3. Red Snapper feed developed by ICAR-Central Institute of Brackishwater Aquaculture, Chennai, replaced the low-value fish feed in cages and showed a uniform growth rate.
4. White leg shrimp (*Litopenaeus vannamei*, synonym *Penaeus vannamei*) farming in artificial tanks using natural or artificially prepared saline water is not commercially viable yet. Running mortality, mass mortality due to power failure & black spot disease, shell hardening induced mortality, differential growth, delayed molting and stunted growth in nursery phase were the issues faced.
5. Amur carp hungarian strain released by Karnataka Veterinary Animal Fisheries Science University, Bengaluru is ideal for fresh water ponds. The fish reaches harvestable size of 1 kg in 15 months. Seeds are available at National freshwater fish brood bank (NFFDB), Bhubaneswar, Odisha and Fisheries Research and Information Centre (Inland), Hesaraghatta, Bengaluru.
6. The productivity of Ridge gourd hybrid *KRH 1* of Kerala Agricultural University in Ernakulam was 18.85 MT/ha, whereas *Arka Sumeet* produced 11.05 MT/ha and *Arka Sujat* 11.40MT/ha. Ideal time of planting is August to November. Cost of Ridge guard cultivation is 2.5 lakhs per ha.
7. The productivity of yardlong bean variety *KAU Deepika* in Ernakulam is 22.30MT/ha, average pod weight 36.70 g and yield per plant 1805g. The productivity of yardlong bean variety *KAU Jyothika* was 18.8MT/ha, average pod weight 27.3 g and yield per plant 1490 g.
8. Snap melon is an ideal crop in the summer paddy fallows in the Periyarriver basins of Ernakulam district. The precision farming of snap melon gives a net profit of 1.2 lakhs per acre in just 3 months time. However setting marketing channels is a pre-requisite to snap melon farming as fruits are highly perishable.
9. Paddy variety Pournami of Kerala Agricultural University recorded a yield of 5.2 MT/ha in Ernakulam. Straw yield was 3.7 MT/ha.
10. The Sesamum variety VRI recorded a yield of 520 kg/ha in summer paddy fallows of Ernakulam. The oil content of VRI was 34.5 per cent.
11. The Blackgram variety VBN 8 of Tamil Nadu Agricultural University recorded yield of 807 kg/ha in Ernakulam.
12. The Greengram variety Co 8 of Tamil Nadu Agricultural University recorded yield of 929 kg/ha in Ernakulam.
13. Pre-monsoon spray of 1% Bordeaux mixture in month of May and follow up spray after 45 days significantly reduced the abnormal leaf fall, nut fall and thread blight incidence in nutmeg in Ernakulam region.
14. Minisett technique of elephant foot yam using 250 g setts is ideal in growbags with closer spacing that gives yams of 1.75 to 2.00 Kg suited for household consumption.
15. The imbalance in feeding of backyard poultry when fed only whole grains and food remnants can be compensated by supplementing *Balancer feed* developed by Kerala Veterinary and Animal Sciences University. Egg production of Gramasree poultry increased by 37.7% and egg weight 8% when supplemented with Balancer feed.
16. The egg production of *Improved Thalassery* poultry breed of Kerala Veterinary and Animal Sciences University in homesteads of Ernakulam is 130 eggs per bird per year. Average egg weight is 47 gm, age at first egg laying 158 days, broodiness 20-30 per cent and body weight at maturity 1.2 to 1.5 kg.
17. The complete ration for dairy cows recommended by Kerala Veterinary and Animal Sciences University enhanced milk production by 13.6 per cent and fat by 16.6 per cent.
18. Moringa fodder as mixed feed can reduce pellet feed requirement in goats by 10-20 per cent. The crude protein content in Moringa leaves is 23-30 per cent on dry matter basis. Moringa cultivation at spacing of 50 cm× 50 cm in 1.5-2.0 cents is needed to meet daily requirement of 4 -5 kg Moringa fodder for mixed feeding to average homestead goat unit size of 5 animals.

ADVERTISEMENTS



KARIMEEN SEEDS (PEARL SPOT)

SEED SIZE: 3 TO 4 cm

PACKING: SEEDS 50 NUMBERS IN OXYGEN FILLED BAG

PRICE: Rs. 500/- PER BAG

SEED PRODUCED BY ERNAKULAM KVK'S PARTNER FARMERS (KVK PEARLSPOT HATCHERY) ERNAKULAM

DELIVERY LOCATION
SATELLITE PEARLSPOT SEED PRODUCTION UNIT
OLD SMDP BUILDING, ALUVA - PARAVUR ROAD,
MANAKKAPADY 683 511, KARUMALLOOR, ERNAKULAM
CONTACT NUMBER : 9895674060

FOR BOOKING ☎ 8281757450

ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)
ICAR - Central Marine Fisheries Research Institute
National Institute of Aquaculture and Fisheries Sciences and Technology (NIFAS) and National Institute of Marine Fisheries Education (NIMFES)
Aarattuvazhy beach, Narakkal Post, Kochi, Kerala-682 505



Soil less Planting Media

Growbag Mixture
Nutritionally rich; does not require additional manuring

Bag size	10 Kg
Cost per bag	Rs 130/-
Sales Point/ Online Delivery from	KVK Satellite Production Centre (Planting Media), Jeeva Kudumbashree Micro Enterprise, Mangalathunada, Airapuram Post, Ernakulam - 683541 Contact : 89435 66041/96561 46290

Account No : 3444101003075 | Bank : Canara Bank | IFSC : CNRB0003444

*Orders more than 25 bags can be delivered through lorry parcel service

Technology backstopping

ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)
ICAR - Central Marine Fisheries Research Institute
Dept. of Agricultural Research and Education, Ministry of Agriculture and Farmers Welfare Govt. of India
Aarattuvazhy beach, Narakkal Post, Kochi, Kerala-682 505

www.kvkernakulam.org.in | kvk.ernakulam@icar.gov.in | 0484 2972450



JAYANTI ROHU SEEDS (FOR FRESH WATER FARMS)

Brood fish sourced from National Fresh-water fish brood bank (NFB), Odisha and hatched at Ernakulam KVK's Satellite Production Centre.

SEED SIZE: 5 TO 7 CM


PACKING: 100 NUMBERS IN OXYGEN FILLED BAGS

COST: ₹ 575/- PER BAG

DELIVERY LOCATION:
SATELLITE PRODUCTION CENTRE (FISH SEEDS),
CHENKARA, NEAR BHOOOTHATHAMKETTU DAM,
KOTHAMANGALAM, ERNAKULAM.
CONTACT NUMBER: 9848658388

FOR BOOKING ☎ 8281757450

ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)
ICAR - Central Marine Fisheries Research Institute
National Institute of Aquaculture and Fisheries Sciences and Technology (NIFAS) and National Institute of Marine Fisheries Education (NIMFES)
Aarattuvazhy beach, Narakkal Post, Kochi, Kerala-682 505



READY TO PLANT ELEPHANT FOOT YAM SETTS

[SREE PADMA VARIETY OF ICAR-CTCRI]

മടംഗൽ പാകശീതമുള്ള ചെറു വിത്തു

(കുറേ ചെറുതുള്ളി വലുതായ ചെറുതുള്ളി വലുതല്ല)

Produced by KVK's Satellite planting material production centre

SETT SIZE: 800-1000 g	TREATMENT: Treated with trichoderma enriched cowdung slurry	COST: ₹35 for one piece
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DELIVERY LOCATION
KVK Satellite Planting Material Production Centre
Oppo. MRS School, Keezhmad
Contact No: 9447 126 101

Quality Control & Technology backstopping

ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)
ICAR - Central Marine Fisheries Research Institute
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ADVERTISEMENTS

VACCINATED POULTRY CHICKS FOR SALE
(Kadaknath & Thalassery)



SOURCE
KERALA VETERINARY AND ANIMAL SCIENCES UNIVERSITY, MANNUTHY

Age	45 days	90 days
Cost per chick	Rs 200/- (Kadaknath) Rs 200/- (Thalassery)	Rs 250/- (Kadaknath) Rs 250/- (Thalassery)
Delivery location	KVK Satellite Production centre (Poultry chicks), Vithayathil, Neericode, Alangad, Ernakulam.	


BOOKING (9037383304

Quality control & Technology backstopping

ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)
ICAR-Central Marine Fisheries Research Institute
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www.kvkernakulam.org.in | kvk.ernakulam@icar.gov.in | 0484 2972450

(NATURALLY ORGANIC) POKKALI RICE PARBOILED



POF
POKkali Farmer Producer Company Limited, Kadamakkudy, Ernakulam

FARMING, MILLING AND PACKING
TECHNOLOGY BACKSTOPPING
Krishi Vigyan Kendra- Ernakulam, Indian Council of Agricultural Research

PACKAGING SIZE 1 KG PRICE INR. 189/-

FOR ORDERS 9895228787

COURIER CHARGES: KARNATAKA, TAMILNADU & TELANGANA 35/-
FREE DELIVERY IN KERALA OTHER STATES 80/-

Fishlizer
Organic manure from fish market waste
Healthy Plants, Higher Yields



Packing Size	1 Kg
Cost per packet	Rs 60/-

A	B
KVK Satellite Production Centre (Organic Manure), IVY's Agro Hub, Munambam, Ernakulam-683 515 Contact : 9349257562, 7736641844 Bank Account No : 50190002450344 ESAF Small Finance Bank IFSC:ESMF0001129	KVK Satellite Production Centre (Organic Manure), SINI's Agro Hub, Cherai, Ernakulam-683 514 Contact : 9249203197 Bank Account No : 856210110008509 Bank of India IFSC: BKID0008562

Within Kerala delivery can be made via courier service, *Orders more than 50 packets can be delivered through lorry parcel service

Technology backstopping

ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)
ICAR-Central Marine Fisheries Research Institute
Dept. of Agricultural Research and Education, Ministry of Agriculture and Farmers Welfare Govt. of India
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PROGRAMME FOR STUDENTS

ORIENTATION PROGRAMME FOR BSC AGRICULTURE STUDENTS

The KVK conducted orientation programme for BSC Agriculture students of College of Agriculture, Am-balavayal on 27th October 2021 as part of their Rural Agricultural Work Experience (RAWEx) programme. Contribution of Ernakulam KVK to the society, farm-



Orientation programme for Agricultural students

er oriented programmes, market led interventions, public-private partnership mode programmes etc were discussed. The Head and the Subject matter specialists interacted with students.

CMFRI NEWS

BREEDING AND SEED PRODUCTION OF GREEN SNAPPER ACHIEVED

Breeding and seed production of the fish Spangled emperor that is also known as *Green snapper* or *Yellow sweet lip* (*Lethrinus nebulosus*) achieved by ICAR-CMFRI first time in Re-circulating aquaculture system (RAS) at it's Vizhinjam Regional Centre. This fish belonging to the family *Lethrinidae* can grow upto 80 cm length and weigh up to 8 kg. The brood stock collected from wild were spawned naturally in RAS without any hormone application. Hatching of larvae occurred 16-18 hours after spawning and copepod nauplii were used as first feed and subsequently fed rotifer and artemia followed by weaning to artificial diet. The work was carried out under the All India Network Project on Mariculture.



SEAWEED FARMING DEMONSTRATED AT ODISHA COAST

Frontline demonstration of Seaweed farming conducted at Chandrabaga in Odisha coast. Partner fishermen were trained during November 2021 on fabrication and installation of rafts, seed transport management, seeding and maintenance. Twen-



ty seaweed rafts of 3x3 size each seeded with 10 kg seed were deployed at the bar-mouth area of Kushabhadra river near Chandrabhaga. This is the first attempt for pilot scale seaweed cultivation along Odisha coast by ICAR-CMFRI.

ICAR-CMFRI WINS RAJBHASHA PURASKAR

The ICAR-Central Marine Fisheries Research Institute, Kochi bagged Rajbhasha Kshetriy Puraskar-2019-20 (Third position) of Department of Official Language, Ministry of Home Affairs, New Delhi for the excellent implementation of Official Language at the Institute. The Rajbhasha Shield and Certificate were distributed in the presence of Dr. Meenakshi Jolly, Joint Secretary, (OL), Shri B.L Meena, Director (Impl.), Shri Anand Kumar, Director (Policy), Department of Official Language, Ministry of Home Affairs, New Delhi; Dr. Dinesh Srivastava, Chief Executive, Nuclear Fuel Complex, Hyderabad and Dr. V.M Tiwari, Head, CSIR, Hyderabad in the Official Language Regional Conference (SW) organized on 04th December, 2021 at Hyderabad. The Heads and Officials of Central Government Organizations from Kerala, Tamil Nadu, Karnataka, Telangana, Andhra Pradesh, UT of Puducheri and Lakshadweep were present.







ICAR-KRISHI VIGYAN KENDRA (ERNAKULAM)

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