

## **Mechanisation**

- Paddy mechanisation efforts through women empowerment by KVK Malappuram brought encouraging results and fetched best poster award in the International Women Conference 2012 at New Delhi. Revival of paddy cultivation in more than 1000 ha was possible through the 'Krishi Sahayi' model and District Panchayath linked Haritha Malappuram project.
- The model was replicated in 35 panchayaths of the district as a part of fallow free Malappuram project.
- This success story was highlighted by CNN-IBN channel and Farmers Notebook of Hindu daily and as a result delegations from Ethiopia and Tamil Nadu Agricultural Department had discussions with the KVK team and women group 'Krishi Sahayi'.
- Spread the Helical blade puddler technology of KAU to more than 300 ha resulting in 40% savings in fuel costs. Evaluated the Brush cutter with the reaping attachment for harvesting paddy and popularised among the small scale farmers.
- A custom hiring unit for small scale paddy mechanisation was established at KVK with the funding of State Planning Board and the facility is being used by more than 250 farmers per year.
- The development of a crack team for coconut through KVK - CDB collaboration made tremendous impact. Out of the 240 youth trained as coconut technicians, more than 100 are practicing and earning Rs. 1200-1500 per day solving the problem of coconut farmers covering an area of 1200 ha.

## **Plant protection .**

- Farmers Field School (FFS) on paddy organized for the last 4 years in Vellanchery, Chamravattom, Thrikkanapuram and Valanchery clearly demonstrated the effectiveness of biocontrol agents like Trichocards and Pseudomonas for the management of rice pests and diseases. In all the four FFS areas, the crop was raised without a single spray of insecticide. Rice bug menace in the FFS area was successfully managed by using fish jaggery mixture. .
- Succeeded in spreading the technology of biological control of pests and diseases in paddy using Trichocards, and Pseudomonas in more than 500 hectares .
- As a result of successful FLD on management of stem bleeding in coconut, one panchayat has implemented the programme using its own funds in 150 hectares with the technical supervision of KVK.
- Through KVK interventions, there was widespread adoption of pheromone traps for the control of fruit flies in cucurbits in an area of 420 ha and mango in an area of 153 ha. The adoption of pheromone trap technology resulted in reducing the number of insecticide sprays resulting in a savings of Rs. 20000/ha/season. In an area of 420 ha an amount of Rs.84 lakhs could be saved towards the cost of plant protection by the adoption of pheromone traps in cucurbitaceous vegetables.
- Succeeded in managing wild boar menace in crops using Ecodon as a repellent
- Eco friendly management of Pseudo stem weevil in banana using Neem cake became popular through KVK efforts and is being practiced by banana farmers covering about 1000 ha. .
- Successfully intervened in finding solutions in plant protection issues of various crops in more than 600 ha through diagnostic visits.
- Baya weaver bird, a serious problem in the paddy fields of Ponnani block, was tackled through the use of metallised reflective ribbons in an area of 250 ha resulting in a savings of 143 tonnes of paddy. The technology also helped the farmers to save 225 man hours per crop season spent for

repelling birds from the fields manually.

- Successfully managed the invasive pest papaya mealy bug *Paracoccus marginatus* with the help of the parasitoid *Acerophagus papayae* throughout the district.
- Purchased neem soap technology from IIHR Bangalore and within a year 475 kg of neem soap was supplied to farmers covering an area of 240 ha of vegetables.
- Successful eco-friendly control of leaf miner was achieved in lotus benefiting more than 100 farmers

## **Entrepreneurship**

- Developed a technology for small scale production of coconut water vinegar through OFT, FLD and trainings. As a result, there are more than 20 successful units operating under the guidance of KVK. The problem of turbidity in the vinegar produced by the entrepreneurs was overcome through the use of clarifying agent bentonite.
- Vocational training of 6 months duration to a women group, funded by SHM resulted in the formation of an SHG Gramasree. The group is attached to the KVK and each member is now earning more than Rs. 4500/month through production of vegetable seeds, seedlings, mushroom spawn, bio agents, etc.
- A series of mushroom trainings were conducted and as a result there are more than 400 farmers now practicing it and earning additional income.
- Lemon grass oil spray was introduced as an eco friendly alternative for the management of sciarid flies in mushroom. Also popularized various substrates as an alternative to paddy straw which is becoming scarce and costly.
- Designed a portable structure for the cultivation of milky mushroom on house terraces.
- Established a mushroom spawn production unit with the help of State Horticulture Mission (SHM) and is now supplying 300 spawn packets every month to mushroom farmers. .
- Modified flour roaster into fruit pulp concentrator through OFT and is being successfully used by entrepreneurs for large scale fruit processing.

## **Crop production .**

- Various high yielding varieties of vegetables were popularized through trainings, FLDs and OFTs and as a result HYV coverage has now reached around 1200 ha..
- The cultivation of cool season vegetables viz., cabbage, cauliflower and carrot were popularised in the district and every year more than 1.2 lakh seedlings of cabbage and cauliflower are being sold to the farmers.
- FLDs on terrace cultivation resulted in widespread adoption by housewives in more than 2000 households.
- Farmer field school (FFS) on coconut concluded in 2008 at Vettom panchayath resulted in large scale adoption of INM and IPM practices in coconut. The FFS inculcated a group spirit in the farmers of the area and resulted in the formation of 40 coconut producers societies (CPS) in the panchayath and 2 federations of these CPS.

## **Livestock production management**

- In collaboration with Tanalur panchayat, KVK established a sustainable small holder dairy development model 'Asraya', now collecting 3000 litres of milk per day.
- Identified and popularised KAU hybrid napier variety 'Supriya', in sandy loam tracts where the ruling variety CO-3 was not performing well.

## **Water conservation .**

- Identified and promoted a cost effective micro sprinkler developed by an innovative farmer, Avaran.

The technology was validated by KVK collaborating with KCAET and through project support from KSCSTE. This technology has now spread to more than 1000 ha in various crops all over the state. The farmer bagged many awards including the one in the National Innovators Meet organized by ICAR at Mysore.

- Established the second biggest lined water harvesting pond, with a capacity to store 32 lakh litres of water to serve as a model demonstration unit.

### **Infrastructure development**

- Revolving fund increased to Rs. 13.00 lakhs through sale of vegetable seeds, vegetable seedlings, vermicompost, earthworms, azolla, etc.
- With the aid of RKVY project on Augmentation of Vegetable Production through Technological interventions the facilities of KVK farm was improved and lead to a jump of vegetable seed production from 220 kg in 2011-12 to 500 kg in 2012-13.
- Through various Externally Aided Projects, KVK could establish mushroom spawn production unit, custom hiring unit, sericulture demonstration unit, well laid out irrigation system, seed extraction units, etc.

## **Major contributions during the last five years**

**Mandatory activities:** During the period, 28 technologies assessed in 160 farmers fields, 61 technologies demonstrated in 573 farmers fields and 493 trainings were conducted for 22556 participants. Nine vocational trainings were also conducted benefitting 163 youth, with an outcome that 60 participants either started individual or group ventures of self-employment earning an income of Rs. 8,000 to 15,000 per month.

**Production of inputs:** KVK established its own production units of enriched compost, azolla, neem soap, pheromone traps, bio control agents and nutrient mixtures, benefitting about one lakh farmers. In the last 5 years, neem soap production has reached 8.56 tonnes. In addition, fifty tonnes of bio control agents were produced for effective IPM of all cropsspread over 5500 hectares. In 2017-18 secondary and micro nutrient mixtures production reached 21 tonnes covering 4000 hectares under vegetables, banana and rice resulting a yield hike to the extent of 10 to 20%.

**Promotion of ICT in agriculture:** Various ICT tools like fertilizer calculator, online information system, credit calculator, SMS services, etc were also utilized for the large scale dissemination of information to the farming community. KVK developed technical exhibits for the Department of Agriculture in the form of exhibits displaying useful information to the stakeholders on various aspects of crop health management. Likewise, materials worth Rs. 27 lakhs was distributed to 57 krishibhavans in 6 districts of Kerala.

**Promotion of vegetable cultivation:** Several new varieties of vegetables were tested in the district and were popularized through demonstrations, thereby enhancing the vegetable production of the district. Cultivation of vegetables in the homesteads, in poly bags and rain shelters along with water saving irrigation methods were given great emphasis by KVK. Aiming to enhance vegetable production in the district, KVK produced 4949 kilograms of vegetable seeds of 22 high yielding varieties of 14 crops sufficient to coveran area of 2000 ha

**Cultivation of mushrooms and value addition in fruits and vegetables** Regular trainings imparted at KVK resulted in the initiation of several mushroom production and agro processing units. Recently, various agro processing machineries like Pasta making machine, Pulverize, fruit mill, fruit pulp concentrator, sealing machine, vegetable cutter, cabinet drier and so on was added to the processing

unit under the ARYA project of ICAR and are utilized for imparting effective training to rural youth in value addition considering the upcoming trend of consumption pattern and food habits.

Promotion of farmer innovations: Regular efforts of KVK helped to identify several innovative farmers of the district and helped them in filing the patent documents. Establishment of a farmer innovation museum at KVK to show case and promote valuable innovations by the farming is about to complete with the help of state planning board.

Automatic Weather Station as Part of DAMU Project: District Agro meteorological Unit (DAMU) established at KVK Malappuram in 2019. As part of this project an Automatic Weather Station was setup in KVK with the financial and technical support from India Meteorological Department. Continuous recording of weather data obtained from the station is being utilized for preparing agromet advisories and medium range weather forecast for Malappuram district and constituent blocks and are sent regularly to all the Krishibhavans. The AWS data can be used for analysing the accuracy of the forecasted data and also for various research purposes.

Growth of Revolving fund:KVK has an operational revolving fund started with the support of ICAR and has showed tremendous growth together with facilitation of KVK activities for the enhancement of the production and supply of various agricultural inputs. Accordingly, along with increased supply of inputs and horizontal growth of technologies, the KVK RF has grown from Rs. 15.91 lakhs in 2014 to Rs.139.42 lakhs by 2021

Linkage and external funding for infrastructural development and horizontal spread of technologies: KVK mobilized Rs. 208 lakhs funding from external funding agencies viz., Kerala State Planning Board, RKVY, Department of Agriculture and Sate Horticulture Mission during the last 4 years which helped the KVK to establish a bio control lab, agri bio park, seedling production unit, facilities for vegetable seed production, mushroom spawn production unit, custom hiring unit, and so on.

Awards received:Reflecting the exemplary servicescatered by the KVK, various awards such as Zonal best KVK award (Zone VIII) 2015,PanditDeenDayalKrishiVigyanPratsahanpuraskar best zonal KVK award(Zone XI) 2016 and Best KVK Award 2018 of Kerala Agri. University were received by the KVK.In addition Sri. Mohammed Moopen, an innovative farmer nominated by the KVK, received the PPVFR award for protecting betelvine germplasm- 2015 and Sri. C M Mohammed received ICAR Jagjivan Ram Abhinav Kissan Puraskar (Zonal) during the year 2018.

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