Agricultural Research Station, Thiruvalla

Agricultural Research Station, Thiruvalla,Kallungal P.O., Thiruvalla, Pathanamthitta – 689102
Phone : 0484-2658221 Mobile:

Email : srsthiruvalla@kau.in Website:

Station Head		Dr. Baby P. Skaria	
Longitude		76.56 ° E	
Lattitude		9.35 ° N	
Nearest City/ Town		**Distance from Nearest City/ Town (km)**	5
Nearest Railway Station		**Distance from Nearest Railway Station (km)**	6
Nearest Airport		**Distance from Nearest Airport (km)**	120

About Station

Sugarcane Research Station, Thiruvalla is situated at Kallunkal in Nedumpuram panchayath, 5 km from Thiruvalla town, on the banks of Manimala river. The farm area is 9.35 ha.

Sugarcane Research Station, Thiruvalla, was established in 1976 by ICAR under the All India Co-ordinated Research Project on Sugarcane. Kerala Agricultural University strengthened the research efforts of this station during 1979 by providing more infrastructure facilities and manpower.

Breeding programme in sugarcane was initiated at this station in 1979, in collaboration with Sugarcane Breeding Institute, Coimbatore with an objective of improving quality and increasing yield. The fluff exchange programme under All India Co-ordinated project was started in 1983. Under this programme, clones possessing good agronomic traits, high quality and tolerance to red rot diseases were hybridised at the National Hybridisation Garden, Coimbatore and fluff seeds sown at Thiruvalla for subsequent selection. The research programme was further strengthened by the funds provided by NARP Phase II and plan funds. The research work in vegetables started in 1988. Currently the station is also funded by external agencies like RKVY, KSCSTE etc.

Objectives

- To evolve high yielding sugarcane varieties suitable for jaggery production and tolerant to red rot disease
- To formulate agro-techniques for realizing the yield potential of sugarcane crop under varying agro-ecological situations
- Mechanisation in sugarcane cultivation
- Identification of pathotypes /races in red rot pathogen of sugarcane
- Survey of sugarcane diseases naturally occurring in the area
- To standardize the post harvest management technology and product diversification in sugarcane
- To improve genetic purity of existing vegetable varieties as well as to develop high yielding varieties of vegetables suited to the riverine alluvial soils of Kerala
- To formulate suitable agro-techniques involving integrated nutrient management in vegetables
- To produce and distribute elite planting materials of sugarcane, banana and vegetables
- To evaluate and select suitable short duration tapioca varieties suited for flood prone upper Kuttanad area
- To identify vegetable crops and varieties suitable for precision farming under protected cultivation
- To study on efficient utilization of coconut interspace with improved fruit crops, spices and vegetables in the region
- To formulate location specific production package for native vegetable crops
- To transfer the technologies developed by KAU to Agricultural dept, other agencies and to farmers

Vision

Appropriate technology development in agriculture with emphasis on sugarcane for entire Kerala and vegetables, banana and tuber crops for Pathanamthitta District and revirine alluvium of central Kerala

Mission

Sustainability and growth in agriculture through technological interventions

Achievements

Technology

Agronomic practices and technologies developed.

- Sugarcane requires an optimum row spacing of 90cm for mid late and 75cm for early varieties in Kerala for high yield.
- The seed rate is found to be 45000 three budded setts per ha for optimum plant density.
- Nutritional requirement of sugarcane is found to be 165:82.5:82.5kg per ha. of NPK for the acidic alluvial soils of deltaic area and 225:75:75kg per ha. of NPK for black soils of Palakkad.
- In the case of ratoon crop an additional dose of 25% of the recommended dose of N is required for maximum cane & sugar yield.

- Application of lime at 600 kg per ha. suppresses the ratoon decline considerably in sugarcane.
- Pre emergence application of Atrazine at 2 kg/ai per ha followed by 2, 4-D at 1kg *ai* at 45 DAP, effectively controls the weeds in sugarcane.
- Irrigation should be scheduled at fortnightly interval at 4cm depth.
- Sugarcane seedlings can be transplanted under puddled condition where the establishment percentage will be above 90.
- Ratoon crop has to be gap filled @ one three budded sett for every 50cm gap.
- The most ideal time of planting for sugarcane in spring season is found to be January 15th Planting beyond January 31st reduces the cane yield considerably.
- Mineral nutrition of newly released varieties is found to be 100 percent of the recommended dose.
- When trash application at 4 t per ha. in sugarcane ratoon crop is followed, application of NPK should be restricted to 100 percent of the recommended dose.
- Seed cane crop of sugarcane requires N application at 125 per cent, while P and K at 100 percent of the recommended dose. Nitrogen should be applied at 45, 90, 120 & 135 DAP.
- Trash blanketing in sugarcane is found to be superior to trash burning among the different crop residue managements followed.
- Pre emergence application of Goal at 1.5 litres per ha and post emergence application at 1.5kg per ha. at 60 DAP effectively controls the weed flora in sugarcane.
- Alternate furrow irrigation under trash mulching could economize the use of irrigation water to the tune of 41% as compared to all furrow irrigation trash mulching.
- Integrated use of press mud at 5 t per ha. with NPK application at 100 percent of the recommended dose produce satisfactory yield levels with appreciation in soil fertility and productivity.
- Mineral nutrition with sulphur at 60kg per ha in the black soils of Palakkad increases the cane and sugar yield.
- In sugarcane tracts of Palakkad where sett treatment with Azospirillum @ 500g per ha. together with soil application @ 5kg per ha. is done, sugar cane need be given only 175kg N per ha.
- When press mud is applied at 10 t /ha for the sugarcane grown in Palakkad, only. 50 percent of the recommended dose of P as rock phosphate should be applied.
- Soil samples of the whole sugar cane growing tracts of the state were collected and analysed for physical and chemical properties. Soils of Marayoor and Kanthalloor area of Idukki district showed medium amount of available nitrogen and high organic carbon content. Soil reaction (pH) of the Palakkad region was found to be basic, while that of Thiruvalla was highly acidic. Available P was high in the Palakkad soils and low in Thiruvalla soils.

Plant protection technologies developed

Varieties released viz., Madhuri, Thirumadhuram, Madhurima and Madhumathi which are resistant to red rot disease.

Product diversification - technologies developed

- The station has developed a superior quality semi solid form of jaggery in the name Madhuram. Technology has been standardised for superior quality solid, powder and liquid forms of jaggery.
- Technology developed for production of solid jaggery with the help of stainless steel moulds.
- Established model jaggery unit for demonstration and training purpose for quality jaggery production and is being utilised for production and distribution of the same (5 t/year).

Varieties Released

Sugar Cane

- Madhuri
- Thirumadhuram
- Madhurima
- Madhumathi

All these varieties are highly suited to high rainfall and waterlogged conditions with high yield, sucrose content and resistance to red rot disease and Thirumadhuram is also suitable for semi arid tracts of Palakkad.

Cultures advanced to AICRP (S) zonal trials

- CoTl 93116
- CoTl 527/85
- CoTl 2002/16
- CoTl 1153/92
- CoTl 1358/92

Vegetables

- Kaumudi -snake gourd
- Priyanka - bitter gourd

These varieties have been recommended for cultivation in the riverine alluvium of south Kerala. However they are widely cultivated through out Kerala.

Award

- Dr. Sosamma Cherian (Proferssor and Head) - **"Best poster award**" for "G.I.Registration of Central Travancore Jaggery – A boon for sugarcane farmers of Kerala" during the International Symposium on New Paradigms in sugarcane Research from 15th to 18th October, **2012** held at Sugarcane Breeding Institute, Coimbatore
- Dr. Sajeena. A(Assistant Professor) -"**Best Paper Award**" for "*Ganoderma* – a novel and safe pesticide for plant disease management" during the 25th Kerala Science Congress during 29th January to 1st February, **2013** held at Trivandrum.
- Dr. Beena Thomas (Assistant Professor) - "**Second Best Poster Award**" for "Important medicinal orchids of Kerala" during the **National Conference** on Medicinal Orchids:

Sustainable Use and Benefit Sharing for Rural and Tribal Communities from 29th to 30th , March, 2011 held at Chandigarh, Punjab

- Dr. Beena Thomas (Assistant Professor) - "**Best Poster Award**" for "Variability Studies for Conservation of Important Monopodial Orchids" during the **International Seminar** on Emerging Threats and Challenges to Biodiversity: Policy Framework for Sustainable Management "Etcob 2012",from 2nd to 4th, March, 2012 held at Tirupathy, Andra Pradesh

Patents

GI Registration has been accorded to Central Travancore Jaggery by the work undertaken by the station.

Research News and Events (recent) concerned with the Station

Inauguration of lab cum office building and extension cum sales counter on 23/05/2013