

Research - for the better tomorrow of coconut sector

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Have we ever visualized of the high end technologies available today in various spheres of life? Have we ever imagined of roaming around the world being connected with family and friends? Life has become very fast and we find it almost impossible to live without most of the facilities presently available. The development of all these can be attributed to the high quality and cutting edge research being carried out around the world.

Research is a creative work undertaken in a systematic manner to increase the stock of knowledge and to use this knowledge to devise new applications. Scientific research is a systematic way of gathering data. Scientific research is also important for dispelling the false claims. Carefully organized and controlled research enables researchers to test and compare different theories and approaches, explore different methods and learn from other people's experience. It also enables them to rule out and consider external factors which might influence the results. Thus research is very crucial for the up-gradation of technologies.

Coconut Development Board has been encouraging and supporting initiatives in research for developing technologies for enriching the coconut industry; be it the management of pest and diseases in coconut or processing for value addition. Board has been implementing the scheme Technology Mission on Coconut (TMO) from 2001 onwards to address the problems in coconut cultivation and bridge the gaps through appropriate programmes in a Mission Mode to ensure adequate, appropriate, timely and concurrent action. The thrust areas of the mission are research and development in areas of management of gardens, processing and product diversification and market research.



The eligible institutions for taking up research projects would be ICAR/ State Agricultural universities, State Agriculture or Horticulture Departments and private organizations having the capability for conducting the research. Board has been continuously promoting research under various components through research institutions like Central Food Technological Research Institute (CFTRI), Defence Food Research Laboratory (DFRL), Central Plantation Crops Research Institute (CPCRI), Kerala Agricultural University, Tamilnadu Agricultural University, Central Institute of Fisheries Technology, Amrita Institute of Medical Sciences, Amrita School of Pharmacy, etc.

Extensive studies were also taken up by the Department of Biochemistry, University of Kerala in human beings and experimental animals to find the effect of coconut in health and diseases. Human studies have found out that consumption of coconut kernel is beneficial in lowering blood cholesterol levels. Coconut kernel in normal diet can alleviate hyperglycemia, hyperlipidemia and lipid peroxidation in diabetic condition. Studies on tender coconut water revealed that it has significant hypocholesterolemic, antioxidant,

antithrombotic and cardio protective effects. Most of the studies need to go further into human clinical studies and are on the way. Recently CDB has sponsored various clinical studies on coconut, coconut oil, virgin coconut oil, coconut water and other coconut products like coconut haustorium.

Neera, the unfermented sap extracted from unopened inflorescence of coconut is being promoted as a 'Natural Nutritious Health drink'. Board is sponsoring research projects to study the medicinal and health aspects of Neera and Neera based products. The quality parameters of Neera beverage are also being studied by the CDB Institute of Technology at Vazhakulam.

Implementation of research projects for improving productivity through management of pest and diseases have prevented the intensity and spread of major diseases like root wilt, bud rot, leaf rot and major pests such as Rhinoceros beetle, Red palm weevil, Black headed caterpillar etc in major coconut growing areas of the country. The implementation of research projects has also facilitated creation of infrastructure facilities in Central Plantation Crops Research Institute, Tamilnadu Agricultural University, Kerala Agricultural

University, University of Agricultural Sciences, Department of Agriculture, Tamilnadu and Department of Horticulture, Karnataka and other research institutes, for the large scale production of bio-agents against leaf eating caterpillars and facilities for large scale production of anti-serum for identification of disease (RWD) tolerant mother palms and commercial production and distribution of root (wilt) tolerant coconut seedlings.

Research projects for managing pests and diseases in coconut are being taken up mainly by Central Plantation Crops Research Institute, Kerala Agricultural University, Tamilnadu Agricultural University, Coconut Research stations under ICAR/SAU, State Agriculture Departments etc

Board is thoroughly investigating the possibilities of developing rapid multiplication techniques in coconut to address the shortage of disease free quality planting materials. In this regard, Board had sponsored a research project, scaling up production of planting material from coconut root (wilt) disease resistant palms through plumule culture to CPCRI, Kasargod. It is estimated that the demand of planting materials in India alone will be 100 lakhs annually, as against the present supply of 35 lakh seedlings. Board is now exploring the possibilities of standardizing a dependable and consistent protocol for rapid multiplication of coconut through collaborative research projects. Possible networking with institutions which are having expertise and experience in similar lines with ICAR/CPCRI project may help to achieve the target in a faster way. By developing reliable and repeatable protocols it would be possible to produce large number of uniform plantlets with superior quality traits.

In order to make scientific research in coconut sector more effective, focused and intensive, concerted efforts and convergence of farmer's collectives, Research Institutes under ICAR, State Agricultural Universities,

State Agriculture and Horticulture Departments and other linked departments are indispensable. Continuous research and well built extension network in various fields of

coconut can bring in the way out to major threats faced by the industry and make it a more profitable and sustainable crop.

Research projects on health benefits of Coconut and coconut based products aided by CDB under TMOC.

Dietary coconut Oils (VCO & CO) and their health implications-	National Institute of Nutrition (ICMR) Jamai-Osmania, Hyderabad,
Impact of Coconut Oil as a cooking medium on cardiovascular risk factors and clinical outcomes in patients with coronary artery disease receiving standard medical care; A randomized case controlled study with polyunsaturated sunflower oil	Department of Cardiology, Amrita Institute of Medical Sciences and Research Centre, Kochi
Development of Processes and Herbal formulations based on Virgin Coconut Oil	AVT Institute for Advanced Research (AVTAR), Coimbatore
A pilot study on development of a nutraceutical preparation using nut water	Amrita school of Pharmacy, AIMS, Kochi
Development of Technology for Production of Health Foods from Tender & Mature Coconut	Department of Lipid Science & Traditional Foods, CFTRI, Mysore
Development of Nutra coconut oil rich in ω -3 & ω -6 fatty acids and health protective phytochemicals	CFTRI, Mysore
Development of a litholytic formulation, incorporating the medicinal properties of coconut water and core of pseudo stem of plantain tree	CARe-Keralam Ltd., Thrissur
Immunostimulation with Virgin Coconut Oil to treat recurrent infections of the upper respiratory tract of Children	CARe-Keralam Ltd., Thrissur
Development of an Anti Diarrhoeal formulation, incorporating the medicinal principles of coconut water and heart wood of <i>Caesalpinia sappan</i>	CARe-Keralam Ltd., Thrissur
Value added formulation of Ayurvedic drug Ksheerabala by using Virgin Coconut Oil and its Therapeutic effects on Arthritis	St. Thomas College, Pala, Kottayam
Diversified product development - functional dietary and food ingredient from coconut milk powder	Olive Life sciences Pvt Ltd., R & D Centre, Karnataka
Health benefits of dietary intake of Virgin coconut oil on neural-immune network	School of Bioengineering, SRM University, Kattankulathur- Tamil Nadu
Development of concentrated extract of Vyośakativaradi (VKV) formulation in VCO and evaluation of its genotoxic and carcinogenic effects	AVP Research Foundation Ramanthapuram Coimbatore
Isolation, characterization and evaluation of in vitro anti-cancer and antioxidant activities of polyphenols from kernel and oil from coconut	School of BioSciences, MG University, Kottayam
Virgin Coconut Oil as a Neuro Regenerative agent for Alzheimer's disease-Computational analysis Pharmacogenomic study	Amrita Vishwa Vidyapeetham, Coimbatore
Studies on the use of Coconut Water in Alzheimer's Disease (AD)	Metabolic Disorders Research Centre, Jagathy, Thiruvananthapuram