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**CENTRAL PLANTATION CROPS RESEARCH INSTITUTE**  
(Indian Council of Agricultural Research)  
KASARAGOD - 671 124, KERALA, INDIA



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REGISTERED

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Sub: Right to Information Act, 2005 - Information furnishing of -reg.  
Ref: Your application dated 24.06.2014 (RTI Application No.28/2013-14)

Sir,

With reference to your RTI application dated 24.06.2014 received through ICAR, New Delhi on 22.7.2014, I am to furnish below the following information:

| Query No. | Information provided  |
|-----------|---|
| 1.        | List enclosed   |
| 2.        | The research work on arecanut is one of the mandates of our Regional Station at Vittal, Karnataka. In addition, the research work on Cocoa is also being carried out there. As we do not keep separate account for research on each crop, the amount spent exclusively for research work on arecanut is not available. However, a statement showing the expenditure of Vittal Station from 2002-03 to 2013-14 is furnished herewith. This figure also include the payment to the entire staff of the Station, expenditure involved for maintenance of the Station, developmental activities of the Station etc. |
| 3.        | List enclosed   |

This disposes off your request under the provisions of Right to Information Act-2005. In case you desire to file an appeal on this issue the same may be addressed to the Director, CPCRI, P.O. Kudlu, Kasaragod - 671 124, Kerala.

Receipt of the letter may please be acknowledged.

Encl: As above

Yours faithfully,

(JAYARAMA NAIK, K.M.)  
Administrative Officer &  
Public Information Officer I/c

Copy to the Asstt. Director General (Hort.), ICAR, KAB-II, Pusa, New Delhi - 110 012 for information with reference to his letter No.14-4/2014-Hort.I dated 22.07.2014.

**Reply to Q.No.1: List of activities/research done from 1947 with respect to research on arecanut**


| S.No. | Activities/research on arecanut  |
|-------|--|
| 1     | Tissue culture for rapid multiplication of elite genotypes and basic studies in palms                                      |
| 2     | Molecular characterization of arecanut   |
| 3     | Palm based mixed farming system for sustainable productivity and profitability   |
| 4     | Management strategies for arecanut production, health and nutrition  |
| 5     | Organic farming and microbial technologies for arecanut  |
| 6     | Surveillance, monitoring of possible invasive and emerging pests and refinement of IPM of palms                            |
| 7     | Antimicrobial and anticariogenic activities of arecanut  |
| 8     | Adaptation strategies for drought and temperature stress management in arecanut  |
| 9     | Statistical investigations for improving research methodology in plantation crops  |
| 10    | Transfer of technology programmes in arecanut  |
| 11    | Policy oriented research on palms  |
| 12    | Soft computing techniques in plantation crops research   |
| 13    | Seed production in arecanut  |
| 14    | Farmers participatory research cum demonstration plots on arecanut based cropping system(ABCS)                             |
| 15    | Germplasm collection, conservation, characterization and breeding for high yield in arecanut                               |
| 16    | Genetics of dwarfs in arecanut and their exploitation in breeding dwarf varieties  |
| 17    | Studies on the natural enemies of insect pests of areca-cocoa ecosystem  |
| 18    | Areca based mixed farming system   |
| 19    | Nutritional disorders in arecanut  |
| 20    | Performance of medicinal and aromatic plants in arecanut plantation  |
| 21    | Drip fertigation in arecanut + cocoa mixed cropping system   |
| 22    | Crop production model for decision support system in arecanut  |
| 23    | Evaluation of arecanut for alternative uses  |
| 24    | Analysis of organic farming practices practiced by farmers in plantation crops   |
| 25    | Development of IPM technology for palm based production system – Integrated management of Homoptera pests of areca palm    |
| 26    | Developing low cost composting techniques for plantation wastes and their effect on the productivity of arecanut           |
| 27    | Vermiculture eco-technology for sustainable recycling of farm wastes in relation to nutrition and productivity of arecanut |
| 28    | Studies on agronomic aspects of arecanut based HDMSCS for West Bengal  |
| 29    | Arecanut based HDMSCS model for Assam  |
| 30    | Studies on fertilizer application through micro irrigation technique in arecanut   |
| 31    | NPK requirement of high yield in arecanut  |
| 32    | Vermicomposting of palm wastes   |
| 33    | Integrated management of white grubs in arecanut   |
| 34    | Studies on white grub of arecanut based cropping system in North East  |
| 35    | Studies on natural enemies of major insect pests of areca palm   |
| 36    | Economics of arecanut based farming system   |
| 37    | Integrated nutrient management in arecanut based cropping system for sustainable productivity under coastal ecosystem      |
| 38    | Evolving high yielding varieties by selection and hybridization in arecanut  |
| 39    | Field trial on vermicompost in arecanut  |
| 40    | Integrated nematode management in plantation crops and cropping systems  |
| 41    | Preparation of composts by various methods and its impact on the nutrition and productivity of arecanut                    |


|    |   |
|----|---|
| 42 | Biometrical investigations on yield variability in arecanut   |
| 43 | Studies on fertilizer application through microirrigation technique in arecanut   |
| 44 | Evaluation of arecanut for alternate uses – Antimicrobial studies   |
| 45 | Production and marketing aspects of palms   |
| 46 | Sampling techniques in crop loss estimation   |
| 47 | Estimation of post harvest losses of arecanut   |
| 48 | Development of harvesting and spraying machinery for arecanut   |
| 49 | Exploitation of dwarfing genes in the improvement of arecanut   |
| 50 | Multi dimensional analysis of development, transfer and utilization of technology in arecanut   |
| 51 | Pesticide residue determination in palms  |
| 52 | Development of power operated arecanut sprayer  |
| 53 | In vitro multiplication of arecanut   |
| 54 | Areca based mixed farming system  |
| 55 | Studies on marketing, price analysis and international trade of arecanut  |
| 56 | Development of database for plantation crops  |
| 57 | Organic farming technologies for plantation crops   |
| 58 | Drip irrigation cum nutritional studies on arecanut + cocoa mixed cropping system   |
| 59 | Second generation experiment on areca based HDMSCS – Vittal   |
| 60 | Second generation experiment on areca based HDMSCS – Hirehalli  |
| 61 | Economics of perennial crop based farming systems   |
| 62 | Biological nitrogen fixation studies by management of basins and interspaces in plantation crops                                      |
| 63 | Studies on phosphate solubilizing and indole producing microorganisms associated with palms   |
| 64 | Utilization of plantation wastes for production of compost and edible mushrooms   |
| 65 | Refinement of experimentation techniques in plantation crops  |
| 66 | Statistical investigation with arecanut   |
| 67 | Use of nonparametric methods in experiments with plantation crops   |
| 68 | Production of hybrid seed nuts and superior quality planting materials  |
| 69 | Vesicular arbuscular mycorrhizal association in plantation crops  |
| 70 | In vitro and other biotechnological approaches for improvement of Horticultural crops   |
| 71 | Strategy for production of planting materials and breeders stock of plantation crops  |
| 72 | Perennial crops based farming system  |
| 73 | Physiological studies in high density multi cropping systems  |
| 74 | Studies on the burrowing nematodes of arecanut  |
| 75 | Evolving high yielding varieties by selection and hybridization   |
| 76 | Effect of different intervals of irrigation and mulching on arecanut  |
| 77 | Nutritional requirement of arecanut   |
| 78 | Microbial degradation of arecanut husk for recycling  |
| 79 | Nutritional requirement of arecanut   |
| 80 | Investigations on alternate uses of arecanut  |
| 81 | Industrial uses of arecanut leaf sheath   |
| 82 | Antidiabetic activity of arecoline  |
| 83 | Design and development of improved devices for dehusking arecanut   |
| 84 | Introduction and evaluation of arecanut germplasm and trial of promising varieties  |
| 85 | Effect of different intervals of irrigation and different depths of planting arecanut   |
| 86 | Arecanut improvement by mass pedigree selection   |
| 87 | Nutritional requirements under different soil types   |
| 88 | Introduction and maintenance of indigenous and exotic species and types of areca for selection, hybridization and cytogenetic studies |
| 89 | Hybridization between exotic and indigenous types and species of arecanut   |



Reply to Q.No.3: Details of research that has been done with respect to the diseases affecting arecanut

| S.No. | Research on diseases affecting arecanut  |
|-------|--|
| 1     | Density analysis of <i>Phytophthora</i> causing fruit rot/crown rot of arecanut and their management   |
| 2     | Investigations on symptom variation, host pathogen interaction and management of yellow leaf disease (YLD) of arecanut   |
| 3     | Acquisition and transmission dynamics of potential vectors of arecanut yellow leaf disease   |
| 4     | ICAR Outreach project on <i>Phytophthora</i> , <i>Fusarium</i> and <i>Ralstonia</i> diseases of horticultural and field crops  |
| 5     | <i>Phytoplasma</i> diseases of arecanut – Development of molecular diagnostics   |
| 6     | Investigation on YLD of arecanut – Studies on inherent and induced resistance against pathogens  |
| 7     | Management of yellow leaf disease in arecanut  |
| 8     | Integrated management of bud/crown rot diseases of areca palm  |
| 9     | Investigation on YLD of arecanut   |
| 10    | Management of <i>Phytophthora</i> diseases of arecanut   |
| 11    | Epidemiology of <i>Phytophthora</i> diseases in arecanut   |
| 12    | Network project of <i>Phytophthora</i> diseases of Horticultural crops (Phytonet)  |
| 13    | Characterization of <i>Phytoplasmas</i> of palms   |
| 14    | ICAR Network project on wilt of crops with special reference to cultural, morphological molecular characterization and pathogen variability of isolates in India with regard to <i>Ganoderma</i> wilt of areca |
| 15    | Management of YLD in arecanut gardens and production of elite planting materials resistant/tolerant to disease   |
| 16    | Investigations on yellow leaf disease of arecanut with special reference to host plant resistance  |
| 17    | Development and improvement of IDM technology for basal stem rot disease ( <i>Ganoderma</i> ) of arecanut  |
| 18    | Pathological investigations in HDMSCS  |
| 19    | Studies on Mycoplasma like organisms   |
| 20    | Studies of <i>Phytophthora</i> spp. of arecanut and arecanut based cropping system   |
| 21    | Investigations on the YLD of arecanut with reference to MLOs   |
| 22    | Studies on the epidemiology of <i>Phytophthora</i> of arecanut and arecanut based cropping system  |
| 23    | Leafspot diseases of arecanut in North Canara  |
| 24    | Anabe disease of arecanut  |
| 25    | Management practices for YLD affected areca garden   |
| 26    | Investigation on Koleroga in arecanut  |
| 27    | Bacterial leaf stripe disease of arecanut  |
| 28    | The role of bacteria and mycoplasma in the etiology of YLD of arecanut   |
| 29    | YLD of arecanut – physiological studies  |
| 30    | Investigations on die back diseases of arecanut  |
| 31    | Survey of assessing crop loss due to disease of arecanut   |
| 32    | Possible role of fungus <i>Gloeosporium</i> on die back of areca inflorescence   |

  
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