

## FINAL REPORT - 1983

1. Institute Code No: **Gen. VIII (231)**

2. I. C. A. R. Code No: **P 2 - 72/1-ICI - F 30/0311**  
**Gen. VIII(231)**

3. Name and Address of Research Institute/Centre:  
**Central Plantation Crops Research Institute,  
Kasaragod.**

4. Project Title:  
**Identification and Critical Study of elite palms to evolve an  
ideal plant type in coconut.**

5. Name and Designation of Project Leader  
**Dr. RD Iyer, Head of the Division of Genetics.**

6. Name (s) and Designation(s) of Project Associates including Project Leader and work to be done:

Sl. No.	Name and Designation	Time spent	work done
(i)	<b>Dr. RD Iyer, H.D. Genetics</b>	<b>25 %</b>	<b>Survey and monitoring of elite palms and their seedling progenies in North &amp; S. Kerala.</b>
(ii)	<b>Dr. EVVB Rao, Scientist S-1</b>	<b>25 %</b>	<b>Survey and monitoring of elite palms, inter-se mating in N. Kerala.</b>
(iii)	<b>Sri. GK Sukumaran, Scientist S-1</b>	<b>25 %</b>	<b>Scoring of seedling progenies for prop. potency and sex vigour in S. Kerala.</b>
(iv)	<b>Sri. PM Jacob, Scientist S-1</b>	<b>25 %</b>	<b>Survey and monitoring of elite palms and progeny testing in S. Kerala, for disease resistance/tolerance.</b>
(v)	<b>Sri. BC Viraktamath, Scientist S-1</b>	<b>20 %</b>	<b>Survey and monitoring of elite palms in Andamans.</b>
(vi)	<b>Sri. MP Govindankutty, Scientist, S-1 (left the project in 1980)</b>	<b>20 %</b>	<b>Survey and monitoring of elite palms in S. Kerala &amp; their seedling progeny study.</b>

7. Location of Research Project with complete address (Division/Section/Sub-Centre)

**Central Plantation Crops Research Institute, Kasaragod and its Regional Stations at Kayangulam, and Andaman centre.**

8. Date of start

Original Project 1972  
Revised Project 1977

9. Date of termination

1982, but survey and progeny testing being continued under KARP(231) at Kayangulam and Gen and Gen. III(231) at Kasaragod for prepotency studies.

10. (a) Objectives (Not more than 150 words)

- (i) To undertake survey of natural populations for identifying elite coconut palms yielding over 200 nuts/yr, and to make a critical-analysis of the yield contributing characters in order to evolve an ideal plant type concept.
- (ii) To understand their genetic-potential and their yield transmitting ability through seedling indexing method, as also study the environmental factors that enable such rare genotypes to break the yield barrier in coconut.
- (iii) To identify the ideal plant type in coconut based on above study which is expected to perform or behave in a predictable manner within a defined environment. This biological model is expected to yield more number of nuts, higher quantity and quality of copra, oil, and other useful products when developed as a cultivar.

10. (b) Practical Utility including background information (Not more than 150 words)

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The results obtained from this project would enable the coconut breeder to identify the set of characters which are correlated with high yield. Thus, it would help in formulating a sound breeding programme to develop an efficient plant type in coconut possessing the maximum number of ideal attributes which would help in realising higher yields. The survey conducted so far to locate such elite palms has helped in identifying those exhibiting the highest realisable yields in different habitats, so that the yield contribution due to environmental factors can be better understood.

CENTRAL PLANTATION CROPS RESEARCH INSTITUTE  
KASARAGOD-670 124, KERALA

R P F III

Project No.

12. Final Report 19 —19

Date of Start:

14 a. RESEARCH PAPERS:

- (i) Iyer, RD & Rao, EVVB. 1978. Project proposal on survey for high yielders in coconut. Discussion paper presented in 4th Workshop on All India Coord. Coconut, Arecanut Imp. Proj., Panaji, 21 - 23 Sept. 1978. 2p.
- (ii) Iyer, RD, Satyabalan, K, Sukumaran, CK & Rao, EVVB. 1978. Breeding methodologies as applicable to coconut improvement. Paper presented at Int. Conf. on 'Cytogenetics & Crop Improvement', BHU, Varanasi. Mar. 5 - 6, 1978. p.20 - 21.
- (iii) Iyer, RD. 1979. Elite palms and attempts at tissue culture propagation of coconut. Invited paper presented at Symp. on "Relevance of Botany to Agriculture & Forestry", 2nd Botam. Conf. Bhagalpur, Dec. 29-31, 1979; S. Indian bot. soc. 58 (Suppl.): 5 5 - 6.
- (iv) Iyer, RD., Rao, EVVB, Sukumaran, CK, & Jacob, PM. 1982. Towards an ideal plant type concept in coconut. Proc. PLACROSIM-IV, 1981 : 29 - 37; (eds.) S Vishveshwara etal. Printers India, Bangalore.

14 a. REPORTS:

- (i) Iyer, RD, Rao, EVVB, Govindankutty MP, Mathew, J, Muzi Hair, RB, Joseph, J, Dwivedi, RS, Sukumaran, CK & Ramadasan, A. 1979. Gen. VIII(231) : Identification and study of elite palms to evolve an ideal plant type. Annual Report. GPCRI, for 1977: 22-23.
- (ii) Iyer, RD, Rao, EVVB, Govindankutty, MP, Mathew, J, Dwivedi, RS, Sukumaran, CK & Viraktamath, BC. 1981. Gen VIII(231): Identification and critical study of elite palms to evolve an ideal plant type. GPCRI Annual Report for 1978: 21-23.
- (iii) Iyer, RD, Rao, EVVB, Govindankutty, MP, Sukumaran, CK and Viraktamath, BC. 1982. Gen. VIII(231): Identification and critical study of elite palms to evolve an ideal plant type in coconut. GPCRI Annual Report for 1979: 28 - 29.
- (iv) Iyer, RD, Rao, EVVB, Sukumaran, CK, Jacob, PM & Viraktamath, BC. 1983. Gen. VIII(231) : Identification and critical study of elite palms in coconut to evolve an ideal plant type. GPCRI Annual Report for 1981 : 16 - 17.

13. Approximate expenditure incurred in the Project: (Give reasons for variation, if any, from original estimated cost)

**Expenditure is within the original estimated cost.**

14. Publications and material (one copy each to be supplied with this proforma)

a) Research papers

**Attached separately.**

b) Popular articles

: **Iyer, RD, Rao, EVVB, & Govindankutty, MP. 1978. Super yielders in coconut. Indian Fam. 28 : 3-5.**

c) Reports

d) Seminars and workshops (Relevant to the Project) in which the Scientists have participated:

- (1) **All India Coord. Coconut & Arecanut Improvement Project's 4th Workshop at Panaji, Goa, 21 - 23 Sept. 1978. (RD Iyer, EVVB Rao)**
- (11) **Symp. on 'Relevance of Botany to Agriculture & Forestry' Indian Botanical Soc. Bhagalpur University. Dec. 29 - 31, 1979 (RD Iyer)**
- (111) **PLACROSYM-V held at CPCRI, Kasaragod, Dec. 15 - 18, 1982. (All Scientists participated)**

e) Material developed such as new varieties of crops or breeds of farm animals, implements, products, etc.)

**Not yet.**

15. Details (Nos. etc.) of Field/Laboratory Note books and final material and their location.

**Field Note books available in Genetics Division, CPCRI, Kasaragod, Kayangulam.  
Field plan of white palm progenies sown at Kayangulam available with Dr. Govindankutty.**

16. Comments/suggestions of Project leader regarding possible future line of work that may be taken up arising of this project:

It was decided at the Annual Res. Council of CPCRI held in 1982, to ~~sim~~ close this project for the present but to continue the survey for elite, disease-free palms, under the KARP(231) Project at Kayangulam, and under ~~the~~ also continue monitoring the progenies of elite palms planted in South Kerala, CPCRI, Kasaragod and at Payyannur farmers plot. Also carry out selfing of some of the most outstanding palms showing stability and prepotency possibilities, and raise the progeny at CPCRI as well as at Central State Farms, Aralam, to the extent possible. As and when tissue culture becomes feasible, some of these palms may be subjected to this technique to develop clonal progenies.

17. Signatures with name of Project Leader and Associates:


Project Leader : **RD Iyer,**  
Associate:



EVVB Rao :  
CK Sukumaran :  
FM Jacob :  
BO Vinayaknath :

18. Signature (with comments, if any) of Head of Division/Section/Station :

An S-1 Scientist (Econ. Bot.) has been posted at CPCRI, Kayangulam to continue survey and monitoring of elite palms and their progenies.

  
Dr. R. D. Iyer  
(RD IYER) HEAD, DIVISION OF GENETICS  
Central Plantation Crops Research Institute  
KASARAGOD - 670124

19. Signature (with comments, if any) of Director :

