

THE RESEARCH INSTITUTE FOR COCONUT AND OTHER PALMS (RICP) MANADO, INDONESIA

By Muhartoyo

During the Dutch colonial period, Indonesia was well known as the largest copra producing country in South East Asia. The export values of copra in 1890, 1900 and 1910 were £ 2 millions, £ 10 millions, and £ 160 millions, respectively. The main producing area was North Celebes.

During that time, research activities on coconut had considerable attention. In 1876, the Dutch founded the *Cultuurtuin* or Economic Garden in Bogor. The main program of the *Cultuurtuin* were to introduce the tradeable crops, to reproduce them and to improve their characteristics whenever possible and then disseminate them to farmers or research institutions. Coconut research programs were included in *Cultuurtuin*'s programs in 1907. However, the first coconut research activity was conducted institutionally in 1911 by collecting some coconut cultivars in surrounding area such as as Singkawang, Jasinga, Bengkulu, Tasikmalaya, Pacet, Tulung Agung, Karanganyar, Banyuwangi and Lampung.

In 1900, *Sexava sp* and *Aspidiotus sp* attacked coconut palms in Sangehe Talaud Islands (North Celebes) and North



Kelapa Baru-1 Hybrid developed by RICP

Maluku. They caused considerable damage to coconut. In order to get more information on these pests, Dr. P.L.M. Tammes, the Dutch agronomist, and his colleagues conducted research on those pests. This was the first research activity on coconut conducted in Indonesia.

The explosion of *Sexava sp* occurred again in 1927. At the same time, most of Indonesia experienced a long drought period. As a result, more than 100,000 palms died. This event attracted members of *Volksraad* (Provincial Assembly) in Manado. They recommended that

the Dutch Government establish *Klapper Proefstation* (Coconut Experimental Station). Following this, the Dutch sent Dr. A. Reyne to take efforts to control the pest and simultaneously study the possibility of establishing a research station. In 1930, the Dutch Government announced officially the establishment of *Klapper Proefstation* with its office located at Sario (now INMINDAM office), Manado and the experimental garden was at Mapanget village (the location of Research Institute for Coconut and other Palms now).



A Researcher at Work

The *Klapper Proefstation* was headed by Dr. A. Reyne with the assistance of Dr. P.L.M. Tammes and Ir. Tulner. Institutionally, the *Klapper Proefstation* was under the control of *Cultuurtechnisch Instituut* (the Agriculture Technical Institute) of *Aglemeen Proefstation vor the Landbouw* (APL or Central Institute for Agriculture Research) in Bogor. The research programs of the station focussed on pests and diseases control, agronomy, breeding and copra quality improvement. One of the sound results of the programs was the collection of more than 40 coconut cultivars from different areas. This collection was called Tammes Collection as an honour to Dr. P.L.M. Tammes who did the research. Tammes collection is located at Mapanget Experimental Garden.

After Indonesia became independent in 1945, coconut research activities were continued by the Government of Indonesia (GOI). The GOI paid serious attention to coconut

research in 1955-1961, particularly after the fall of copra exports from Indonesia. Diplm. Ing. A.F. Ihne, a German breeder, was invited to be an expert under FAO (Food Agriculture Organization) programs. During his assignment, Ihne did inventory, selection and hybridisation of coconut collected by Tammes. Meanwhile, in 1956 and 1958 Kayuwatu and Kima Atas Experimental Garden (5 and 10 Km from Manado) were founded consecutively. Unfortunately, coconut research activities were hampered by the rebellion of PERMESTA in 1957-1960.

On 17 September 1961 the GOI established Research Institute for Oil Crops. But, on 1 April 1962 the Institute was renamed into Research Institute for Coconut and other Crops. Later on 19 June 1967 this institute was merged with the Research Institute for Industrial Crops (RIIC) which had three branches, i.e. Branch I, Branch II, and Branch III.

On 13 June 1980 the RIIC Branch III was converted to Research Institute for Industrial Crops, Manado (MORIIC). The functions of the MORIIC was to carry out research and development of coconut and other industrial crops.

In 1984, there were some reorganization of the research institute by the Agency for Agricultural Research and Development (AARD). The MORIIC was changed to Coconut Research Institute (CRI). Dr. S.N. Darwis is the first Director of CRI. In April 1995, further reorganization was undertaken in the research institute under AARD. The CRI

was called Research Institute for Coconut and other Palms (RICP) and Dr. David Allorerung was appointed to be its Director.

Mandate and Functions

The mandate of the Institute is to carry out research on coconut and other palms. The functions of the institute are as follows:

- To conduct research on breeding, physiology, agronomy, cultural practices, protection, agro-ecosystem, agro-economy, post harvest and mechanisation for development of production, environment, planting pattern, and commodity analysis.
- To conduct research activities on components of farming systems of coconut and other palms.
- To conduct research on exploration, evaluation, germplasm conservation and utilization of the genetic resources of coconut and other palms.
- To carry out technical services, research collaboration and dissemination of research results.
- To perform the internal administrative activities of the institute.

Research Facilities

RICP. office building is located in Mapanget. It consists of administration room, project administration room, executive room, library, laboratories, multipurpose building, researcher

rooms, and screen houses. RICP is also equipped with 4 units of experimental garden.

Research Programs

The research programs are dealing with coconut and other palms. They are grouped into various subjects and research activities. Some of the research activities which have been carried out are as follows:

- Evaluation on the distinctive characters of coconut germplasm.
- Physical and chemical future of nut
- The activity of peroxide enzyme and its relation to coconut resisted on pytophthora sp.
- Physiological responses of several coconut varieties on drought.
- Coconut hybridization to have high yielding for food product substitution.
- Coconut hybridization to have high yielding and early bearing palms.
- Coconut hybridization to have high yielding and specific nut for industrial raw material.
- Coconut hybridization to have an adaptable palm in swampy areas.
- Coconut hybridization to have high yielding, early bearing and resistant to budrot and nutfall diseases.
- Coconut hybridization between Salak Dwarf and several Talls varieties.
- The forth generation of Mapanget Talls (DMT) self pollinated.
- Nutrient requirements of new coconut hybrid.



- Multi location test of new coconut hybrid.
- Identification and epidemiology of coconut wilt disease.
- Identification of coconut kernel spot disease causal agent.
- The effect of leave pruning on coconut production and micro climate.

In conducting research RICP collaborates with both domestic and overseas agencies such as NRI England, IMI England, and COGENT (Coconut Genetic Resource Network) based in Malaysia.

Research findings are disseminated via various ways like workshops, demonstration plot visits, exhibitions, publications, TV and Radio broadcast.

There a number of research findings worth mentioning:

- The early bearing and high-yielding coconut hybrids (KHINA-1, KHINA-2, KHINA-3).
- The high-yielding tall of coconut (Mapanget tall,

Tenga Tall, Palu Tall, Bali tall, and Riau tall).

- The map of climate suitability for coconut in Sumatra, Kalimantan, Sulawesi, Java, East Kalimantan, South Kalimantan, West Kalimantan, Maluku, Lampung, South Sumatra, Riau, Aceh, Irian, East and West Nusatenggara.
- Biological control of *Oryctes rhinoceros L.*
- Coconut space and planting system for developing intercrops among the coconuts.
- Copra drier Balitka's type.
- Techniques of toddy tapping and coconut brown sugar processing. □

For more information please contact:

Research Institute of Coconut and other Palmae, P.O. Box 1004 Manado-95001, Indonesia
 Phone: (62-431)812430
 Fax: (62-431) 812587
 Email: balitka@mdo.mega.net.id

Muhartoyo is APCC Documentalist.