HYBRID COCONUTS IN PAPUA NEW GUINEA

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INTRODUCTION

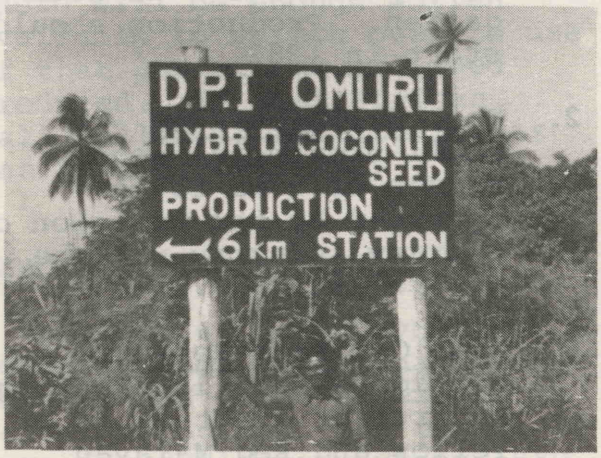
Planning for the introduction of hybrid coconuts in Papua New Guinea started in 1974 when the first Red Malayan Dwarf palms were planted at Omuru in the Madang Province. Omuru, which is 30 km from Madang was chosen as the site for the first Hybrid Coconut Seedgarden. Planting continued and by 1977, 42 hectares of dwarf palms were planted.

Omuru began production of hybrid coconut seednuts in 1979 and the same year the Hybrid Coconut Project commenced under the National Public Expenditure Plan.

OMURU HYBRID COCONUT CENTRE

Apart from being the first dwarf hybrid seedgarden, Omuru is also the base for coconut research, although most trials are located elsewhere. Dr R. Brook, Coconut Agronomist, is based at Omuru and is responsible for variety/spacing and fertilizer trials at the Lowlands Agricultural Experiment Station, Keravat and the Agricultural Research Centre, Bubia.

This year the area of dwarf palms at Omuru will increase to 52 hectares with the field planting of 10 hectares of Yellow Malayan Dwarf palms which were imported last year from Malaysia.



The first D.P.I. dwarf hybrid seedgarden was started at Omuru, Madang Province

Red Malayan Dwarf 'Mother palm', at Omuru

TABLE 1. DISTRIBUTION OF HYBRID COCONUT SEEDNUTS

Year	Smallholders	Plantations/ Large organisations	Demonstration blocks/ Research	Dwarfs for new seedgardens
1979	29 000	26 000	12 000	
1980	50 000	50 000	19 000	21 000
1981	154 000	146 000		20 000

HYBRID COCONUT SEEDNUT PRODUCTION

At Omuru, the production of seednuts has been:

67 000 in 1979
140 000 in 1980
320 000 in 1981 (estimated)

The distribution is shown in Table 1 above.

FUTURE SEEDNUT PRODUCTION

D.P.I. is developing two more regional seedgardens apart from the present seedgarden at Omuru in the Madang Province. These are:

1. Manabo - A 40 hectare seedgarden in the Cape Rodney area of Central Province. The first 20 ha will be planted in 1981 followed by another 20 ha in 1982. Production of hybrid seednuts for distribution to South Coast growers will commence in 1984.

2. Kaut - A 40 hectare seedgarden about 30 km from Kavieng, New Ireland Province. The 40 ha will be field planted in 1982. Production of hybrid seednuts for distribution to the Islands region will start in 1985.

The estimated seednut production from the three D.P.I. seedgardens, Omuru, Manabo and Kaut is as follows:

Year	Number of seednuts
1982	500 000
1983	550 000
1984	650 000
1985	930 000
1986	1250 000
1987	1490 000
1988	1580 000
1989	1660 000
1990	1660 000

OTHER SEEDGARDENS IN P.N.G.

1. Numundo Plantation, W.N.B.P. Coconut Products Limited have planted a 5 ha seedgarden. Production should start in 1982.

2. Epo, Gulf Province - A small provincial seedgarden of 5 ha to be operated by the Division of Primary Industry will be planted in 1982.

3. Dami Oil Palm Research Station - Dami is planting an area of about 25 ha of Yellow and Red Malayan Dwarfs in West New Britain for research and commercial

hybrid coconut seed production.

4. Tokiala Plantation, E.N.B.P. A 16 ha seedgarden is proposed. Expected planting is in 1982. This will be managed by the National Plantation Management Agency.

POLLEN BLOCKS

Pollen source palms of four varieties have been planted at various suitable locations.

The best dwarf hybrid variety has not yet been determined. Variety trials have indicated so far that the Rennell Hybrid (RMDXRI) is superior. Pollen is collected from Rennell Tall blocks at L.A.E.S. Keravat and Agriculture Research Centre, Bubia. Other Rennell pollen blocks are being planted at Madang and Cape Rodney, the latter being imported seednuts from selected palms at Lever Solomons Ltd, Yandina.

Other varieties of pollen palms that have been planted are Markham Tall, Karkar Tall and Gazelle Tall. We are aiming for a large enough area of each to supply all pollen needs so that when the best male parent variety has been determined there will be enough pollen available to switch over to use of that parent for all seed produced. If West African Tall pollen is required, this can be imported.

DEMONSTRATION BLOCKS

A total of 68 dwarf hybrid demonstration blocks have been established in 14 provinces in Papua New Guinea. Of these, 24 were field planted during 1980 and a further 11 blocks have been planted this year. The seedlings for the remaining 33 are in nurseries and most will be planted before the end of 1981.

The demonstration blocks are all about 1 hectare in area and have up to four dwarf hybrid varieties planted alongside local tall varieties. The sites are on D.P.I. land, plantations, smallholder blocks or at schools.

Dwarf hybrid and local tall seedlings in nurseries for planting in demonstration blocks

The number of demonstration blocks established in each Province so far is:

Western	-	3
Gulf	-	6
Central	-	5
Milne Bay	-	5
Northern	-	2
Morobe	-	5
Madang	-	8
East Sepik	-	5
West Sepik	-	5
Manus	-	5
New Ireland	-	5
East New Britain	-	5
West New Britain	-	5
North Solomons	-	4

Twenty-six of these blocks are also replicated trials which will contribute to the information available in the future to find the best dwarf hybrid

variety for Papua New Guinea conditions.

The remainder of the blocks are mainly for demonstration so that coconut growers can see the performance of hybrid coconuts compared to traditional tall palms.

A dwarf hybrid in a demonstration block, 11 months after field planting

Demonstration blocks will also show growers the advantages of good management practices such as legume cover crop, ring weeding, pest and disease control.

The effect of fertilizer will also be seen as only half of each demonstration block will be fertilized.

STAFF

Apart from the staff at seedgardens the project has a coordinator based in Port Moresby and Area Coconut Officers based at Kerema, Alotau, Kavieng and Madang.

The best growth requires good management: regular ring weeding and a legume cover crop

The National Project relies on existing rural development staff in 14 provinces to provide extension services to growers, supervise demonstration block development and organise the distribution of hybrid seedlings to growers within their province.

Research staff and pollen production staff are provided under the Agronomy Section of the Department.

POLICY FOR HYBRID SEED DISTRIBUTION

After meeting D.P.I. needs for hybrid seedgardens and research /demonstration blocks, the policy for distribution of seednuts for commercial use is:

1. Half go to smallholders and half to plantations.

2. To ensure a wide and equitable distribution there is a quota of 2000 seednuts per plantation.

3. Price:

Plantations pay 50 toea per seednut for 1500 of the quota nuts. The extra 500 are provided free to allow for germination failures. Plantations provide their own polybags.

Smallholders - where practical, D.P.I. raises seedlings in decentralised nurseries in each province and sells them at 9-12 months old at 50 toea each.

Large smallholders (orders of 500-1500) are charged 30 toea per seednut (this includes extra free nuts and polybags).

Smallholders in remote areas are charged 20 toea per seednut including extra free nuts and polybags. In some areas growers have received seedlings free where circumstances have indicated it was desirable.

It is pointed out that charges for hybrid coconut planting material are not designed primarily to obtain revenue for the Government because all charges are subsidised by about 50% in the case of plantations and 70-80% in the case of smallholders.

The aim of charges is to help ensure that valuable scarce planting material is not wasted by individual growers. This has already occurred in one Province where growers have neglected hybrid seedlings which were supplied free of charge.

FUNDING

For the past three years funds have been provided from internal sources only.

Project costs have been:

1979	-	K 70,000
1980	-	K275,000
1981	-	K260,000

The future development of the project will be with help from the World Bank.

Project costs are estimated at:

1982	-	K470,000
1983	-	K420,000
1984	-	K310,000
1985	-	K300,000

Some of this cost will be offset by revenue from sale of planting material.

CONCLUSION

The demand for dwarf hybrid coconuts from smallholders and plantations has greatly exceeded our available supply of seednuts from Omuru.

Our plans are to supply by 1990 enough planting material to replant/plant about 5% per year of the existing area under coconuts. Until at least 1986 there will be a shortage of hybrid material in relation to the expected demand from growers. In the meantime new seedgardens are being developed as fast as possible, but once planted it is simply a matter of waiting for maturity.

More research is being done to find which are the best hybrid varieties and to ensure that optimum economic management data will be available in the future. Existing parent material is being planted in progeny trials to enable improvement of future hybrid varieties.

With more funds in the future, training of extension staff and growers will help ensure that commercial plantings will be better managed.