Copies of the leaflet can be obtained from:

The Publications Section
National Agricultural Research Institute
PO Box 4415
LAE 411
Morobe Province
Papua New Guinea

Telephone: (675) 475 1444 , 475 1445, 474 1446
Facsimile: (675)475 1450
Email: narihq@nari.org.pg
Web: www.nari.org.pg

Or

Contact:
Outreach and Liaison Section
National Agricultural Research Institute
Wet Lowlands Islands Programme
Lowlands Agricultural Experiment Station
PO Box 204
Kokopo 613
East New Britain Province
Papua New Guinea

Phone: (675) 983 9145, 983 9200
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National Agricultural Research Institute

RAMBUTAN CLONES

NARI TOKTOK
KER024E

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THE INSTITUTE

The National Agricultural Research Institute (NARI) was established by an Act of National Parliament of Papua New Guinea in July 1996 as a publicly funded, statutory research organisation, to conduct applied and development oriented research on food crops, alternative food and cash crops, livestock and resource management issues. Besides applied and adaptive research, NARI is responsible for providing authoritative technical, analytical and diagnostic services and up-to-date information to the entire agriculture sector in PNG. The major targets are the smallholder semi-commercial farmers in the country.

The mission of NARI is to contribute, through applied research and technical services, to the development of the agriculture sector and realization of the national goals by identifying, adapting and transferring agricultural technologies and information, so as to:

- Enhance the productivity, efficiency and sustainability of the smallholder agriculture, and
- Improve farmer income, food security and welfare of Papua New Guineans and the Nation.

The material presented in this bulletin is based on the best information available at the time of printing (November 2005)

Wrtten by Tio Nevenimo currently working at NARI Wet Lowlands Islands Programmme at Keravat, ENBP.

Grafted seedlings can be prepared and distributed on request. Small numbers of grafted seedlings are usually available all year round from NARI Keravat. However, people wanting large quantities of grafted seedlings should contact NARI Keravat and place their orders at least 6 months in advance so that seedlings can be raised and the clones grafted.

Disclaimers

These rambutan clones should not be planted in the following conditions for commercial production:

1. Area with altitudes above 700m.
2. Areas with annual rain fall below 2000mm per annum and where rainfall is above 2000mm per annum but with no distinct dry period of 1–2 months
3. NARI is not responsible for marketing of fruits.
4. These clones are recommended for farmers until better clones supersede them at some future date.

3. Prior to this release, rambutan grown in most parts of PNG will have come from either unselected seeds or farmer ‘s own seed selections. Only a few growers around ENBP would have planted clones otherwise all planting material would have been planted as seed which produce trees of variable fruit quality and yield. The grafting technique was not previously used in PNG to our knowledge.

Need and Opportunity

1. Rambutan is fast becoming popular as an alternative cash earning crop and during the fruiting season they are very popular in the supermarkets and the local markets.

2. Rambutan is low management input crop. It grows and produces well in the humid tropical lowlands. Altitude below 700 metres and rainfall between 2000 and 3000mm with a 1-2 months dryer period (100mm).

3. Testing is necessary before commercial cultivation in agro-ecological zones other than the above.

4. No serious pests or diseases have been noted over 20 years of cultivation at LAES, or reported from elsewhere in PNG

Distribution

These clones can be distribution to anywhere in PNG.

NARI RELEASED RAMBUTAN CLONES

Introduction

Rambutan (*Nephelium lappaceum*) is an important fruit tree species in the humid tropics. It is a member of the Sapindaceae family which, includes some important species such as Litchi (*Litchi chinensis*), Longan (*Dimocarpus longan)* and Pulasan (*Nephelium ramboutan-ake*).

The rambutan clone is a medium-sized, bushy tree that is widely cultivated in the lowland tropics of South-East Asia. The tree is native to the Malaysia and Sumatra regions where it is found growing wild in the jungles. Seedling trees grow to a height of 20 to 25 metres, however improved cultivars, which are often vegetatively propagated, are smaller and more compact and rarely seen growing over 15 metres.

The common name, rambutan, is derived from the Malay word ‘rambut’ (meaning hair of the head), and refers to the thick covering of soft, red, pink or yellow soft hairs on the fruits. Inside the skin is the sweet, white, translucent flesh, which has a mild sub-acid flavour. This flesh surrounds a single, fibrous seed.

Rambutan trees are believed to have been first introduced into Papua New Guinea in the Bismarck Archipelago sometime before 1929. Subsequent introductions were made into Morobe, Central, West Sepik and Madang Provinces.

Research work on rambutan at the Lowlands Agricultural Experiment Station (LAES) Keravat dates back to the early 1960s. In 1982, superior trees from local populations were collected and a clonal trial was planted. After 10 years of

evaluation three cultivars were selected as having superior fruit characteristics (in terms of taste, juiciness, clingstone and yield). They were named K1, K2 and K6.

Two introductions from overseas were made by LAES between 1980 and 1992. In 1982 seeds from four varieties were introduced from Malaysia and in 1992, grafted materials of eight varieties of Asian origin were introduced. Both introductions were observed under LAES conditions. From the seedline evaluation two, NG 8288 and NG 8280 were selected as having good fruit characteristics. The 1992 introductions have not been scientifically evaluated for yield but they are commercial varieties and have proved to grow and produce well under LAES conditions and shown to have very good fruit characteristics. Their commercial names are: R7, R3, R9, R156, R134, R162, Jitlee and Rupiah.

NARI Rambutan Clones

These high quality rumbutan clones exist at LAES but they have not been distributed widely because of two reasons. Firstly they have not yet been tested outside Keravat and secondly it has been difficult to vegetatively propagate them. Vegetative propagation ensures purity of the material

NARI has over -come some of these problems and has now released three superior clones.

The Rumbutan clone released by NARI LAES Keravat in 2004 are known as:

1. KNL1,
2. KNL2
3. KNL6.

KNL = Keravat *Nephelium lappaceum*

Quality

The fruits of these clones have the following qualities

1. Fruits are of high quality and are much better than most of those currently grown from seeds.

2. Fruits are very sweet and juicy

3. Flesh does not cling to the seed

4. Good attractive fruit size and fruit colors.

5. All clones are supplied as grafted seedlings. Grafting ensures that:
   - Clones of superior planting materials, which are true to type with good fruit quality and yield.
   - Trees will be small and compact (10-15) metres compared to large tall (30–40 metres) trees produced by seedling trees.
   - Trees will come into bearing at 3-4 years compared to 7-8 years for seedlings trees.
   - Trees will give a uniform production, as all trees will come into production at roughly the same time.

Existing planting material

1. No prior recommendations exist in PNG for rambutan planting material.

2. LAES has distributed seedlings and grafted material to various clients over the last 10 years as a mixed batch from these selections.