

## **Baloi : Sweet-type Tapioca Variety Suitable for Planting on Acid Sulphate Soil**

### **Introduction**

Tapioca ( *Manihot esculenta* Crantz ) probably originated from tropical America was introduced to other tropical region during the 17<sup>th</sup> century by the Portuguese. It is a dicot belonging to the family Euphorbiaceae.

In Sarawak, tapioca has been intercropped with hill padi by local farmers mainly as subsistence farming. In recent years, there have been attempts by the private sector to go into big scale planting.



*Tapioca intercropped with hill padi*

Tapioca is cooked and eaten, or processed into starch for cooking and baking. It is also used as animal feed and in the production of concentrated fructose-glucose syrup, a sweetener used in the food and drink industries.

### **Types of tapioca**

Tapioca varieties can be identified based on their morphology characteristics such as leaf shape, leaf size, colour of leaf petiole, plant height, stem and tuber as well as hydrocyanic acid content. The hydrocyanic acid content has been used to categorize tapioca into two group namely sweet type and bitter type. According to Gerona (1994) the bitter type contains from 100 to 400ppm of hydrocyanic acid based on fresh tuber weight. The sweet type contains less than 100ppm. The presence of hydrocyanic acid in the sweet type is confined to the tuber skin and scarcely found in the tuber itself.

### **Sweet type tapioca varieties**

This group of tapioca is used as food. The leaf petiole is characteristically reddish. Among the types recognized as sweet type varieties are 'Sawah', 'Medan', 'Kabu', 'Betawi' and 'Pulut'. Generally the sweet type tapioca matures 6–12 months after planting. The tuber quality deteriorates easily if not harvested in time.

## **Bitter type tapioca varieties**

This type is used for the production of starch and animal feed. The variety usually has yellowish or green leaf petiole. Some bitter varieties are 'Black Twig', 'Perintis' and 'MM92'. These varieties mature 10–14 months after planting. The tuber quality of the bitter type does not deteriorate easily if harvested late but it can become fibrous.

### **'Baloi' Variety**

Studies done on the sweet type tapioca varieties on acid sulphate soil at Rampangi Station, Kuching had shown that 'Baloi' variety produced higher yields compared to other varieties. It can produce about 40t/hectare fresh tuber and is suitable for fresh consumption. This variety matures between 10-12 months after planting.

### **Characteristics of 'Baloi' variety**

- The plant habit is late branched.
- Mature stem colour is dark brown with silvery grey patches.
- Colour of young shoot is purplish green.
- The leaf lobe shape is obovate.
- The leaf lobe numbers are 5 – 7.
- Colour of leaf lamina is light green.
- Colour of petiole is reddish green.
- Tuber skin is rough
- Tuber skin colour is dark brown
- Tuber flesh colour is white.
- The plant height is 2-3m

Fresh 'Baloi' tubers harvested from the trial at Rampangi Station contain approximately 35.1% carbohydrate, 0.43% fibre, 0.39 % protein, 0.14% fat, and 63.1% moisture.



*'Baloi' tuber grown on acid sulphate soil*

### **Harvesting**

Fresh 'Baloi' tubers should be consumed immediately as they cannot be kept in good conditions for more than two or three days after harvesting.

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