



**FACULTY OF AGRICULTURAL SCIENCES & ALLIED INDUSTRIES**

- Botanical name : *Durio zibethinus*
- Family : Bombaceae
- Chromosome no :  $2n = 56$ .

## Preamble

- The durian is an important fruit in several parts of the tropics and the famous fruit of the far east, which is widely cultivated throughout Malaysia. The term durio is Malaysian word duri-thom and zibethinus is the Italian word Zibetho means strong smelling. Thus, this is a fruit characterized by a greenish, hard theory, thick rind outside and a yellowish sweet flesh with strong odour. The fruits are nothing but with seeds covered with cotton like fibre.

## Composition and Uses

### Composition

- The fruits are rich source of food energy (124 cal) CHO's (28.89 mg), ca (20.0 mg), P(63 mg), Fe, Vit.A, ascorbic acid protein (2.5 g), fat, etc.

### Uses

- The fresh fruits used for table purpose. The rind is slit longitudinally along the grooves and the inner segments of flesh are taken out to be served as dessert or preserved with salt or made in to a sauce.
- Also used in making durian paste, sweet durian candy or confectionary, preparation of ice-cream. The seeds roasted and eaten.
- Medicinal importance: As aphrodisiac, the boiled decoction of roots used to relieve fever in Malaysia. Leaves used for curing jaundice. Durian shell placed under beds to discourage bed bugs.

## Origin and Distribution

It is indigenous to Malaysia i.e. South East Asia and distributed in Malaysia, Indonesia, Philippines, Thailand, Singapore, Kampuchia, Myanmar, India, Srilanka.

## Soil and Climate

- Durian trees can grow in deep well drained, sandy clay or clay loam soils rich in organic matter with a pH of 5.0-6.5.
- It requires abundant rainfall (200-300 cm) equally, distributed throughout the rainy season.
- High humidity and high temperature with only a short dry season  $24-30^{\circ}\text{C}$  is ideal.
- Grows up to 800 m. near equator, 30-50 % shade is required for young trees.

## Species and Cultivars

The genus durian has 27 species, among them 6 species produces edible fruit, they are.

1. Durian- *Durio-zibethinus*- widely cultivated spp.
2. Lai- *D. kutejensis*- vey good fruits with good flavour.
3. Karatogan- *D. oxleyanus*.
4. Tabelak- *D. graveolens*

5. lahong- *D. dulais*
6. Munjit- *D. Grandiflorus*.

### **Cultivars**

The selection programme in Thailand and Malaysia involved in evolving more than 100 cultivars and few cv are recommended, Chance, deception, frog, Gibbeon, Golden Pillow, grown in Thiland Monthong, Kan yao, Luang, kradum thong- Malaysian cvs.

### **Propagation**

- Mostly propagated by seeds.
- Vegetative propagation by budding, grafting, air, layering and cuttings is also possible.
- Patch/cleft budding is best suitable.
- The chance root stock resistance to root rot is commenly used in Thailand.

### **Land Preparation**

### **Planting**

Plants are spaced at 10-12 m, apart in orchards and more than one clone or cultivars should be planted for cross pollination.

### **Manuring and Irrigation**

Manures and Fertilizers: (During 1st 5 years)

<b>YEAR</b>	<b>Nitrogen kg/ha</b>	<b>Phosphorous kg/ha</b>	<b>Potassium kg/ha</b>
1st year	1.7	0.4	0.4
2-4 years	23	6	13
>5 years	38	8	21

### **Irrigation**

- Irrigation is essential if the dry period extends up to 3 months or during flowering & fruit development.
- In case of chance cv mild stress is required to initiate flowering and is reported to require low amount of irrigation.

### **Pruning**

- Pruning is done to remove laterals & water shoots leaving central leader.
- It is done after harvesting and propping is provided for heavy cropped trees.

### **Flowering and fruitset**

- Flower clusters arise from the laterals main branch and occasionally on tree trunk; Produces about 20,000-40,000 flowers/tree during dry period (Mar-April /Sept-Oct) self incompatibility is common & cross pollination is required; Pollination is by nectarivorous, bats & moths at night when bees are not active.
- Application of GA3 to durian pedicels at 6 weeks after anthesis reduces fruit drop & increases fruit size.

- The fruits are ovoid or ellipsoid capsule derived from single ovary, fruits weighs up to 8kg with 30cm long & 20cm diameters.

### **Harvesting and Yield**

#### **Harvesting**

- Climacteric to prevent natural fruit abscission fruit may be tied to the limb or harvested at maturity i.e. hollow sound when tapped with finger, harvest the fruit by picking.

#### **Yield**

- Commercial yield starts at 12-15 years old tree about 500-1000 fruits/tree/year. Fruits stored at 150C
- The aril pulp is dehydrated and sold as durian cake' boiled with sugar.