

# Cultivation of Wax Apple in Insect Proof Netting Structure

By

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Wax apple (*Eugenia javanica* Lam) is a species in the Myrtaceae family, native to Philippines, India, Indonesia, Samoa and Malaysia. It is commonly known as **jambu air** in Sarawak.

A farmer in Asajaya (Mr. Lee K.S.) obtained wax apple (Johor madu) planting material from Johor. Under natural conditions, wax apple tree can grow 5 to 15 m tall, with evergreen leaves 10-25 cm long and 5-10 cm broad. The flowers are white with four petals and numerous stamens (Fig. 1). The fruit is a bell-shaped edible berry, with colours ranging from light red, pink, purple to deep purple, 4-6 cm long. The flowers and resulting fruits are not limited to the axils of the leaves and can appear on nearly any point on the surface of the trunk and branches. When mature, the tree is considered a heavy bearer and can yield a crop of up to 700 fruits.



*Flower of jambu air*



*Bell-shaped fruits*

### **Production system in open field**

Mr. Lee planted a few plants of wax apple in his garden. After two years of planting, wax apple started to bear fruits. But, the fruits were seriously attacked by fruit flies. Frequent sprays with insecticide were needed to control the fruit flies. Bagging with netted bag was used to prevent attacks from fruit flies and pesticides contamination. Bagging is a tedious and laborious work for the farmer, though the yield was satisfactory. The yield obtained from a mature tree was 250 – 500 fruits per year.



*Bagging the fruits using netted bag*

### **Production system in insect-proof netting structure**

Mr. Lee then decided to build an insect proof netting structure to protect the plants from insect pests. The netting structure is about 20 feet tall, using 16x16 mesh netting materials. He started with about 200 plants and later he added another 200 plants.

Wax apple tree can grow to a height of 15 m depending on environmental conditions. Inside the netting structure, wax apple plant is trimmed to umbrella shape canopy at 2m tall. All auxiliary branches and water shoots are trimmed to aid in movement during fertilizer application as well as to allow more ventilation and sunshine to prevent fungus growth. The 2-m tall umbrella shape canopy will facilitate fruit thinning and harvesting of ripe fruits. The farmer maintains 3-5 fruits per bunch to prevent rotting of fruits and to obtain uniform marketable size fruits.



*Mature 2m wax apple trees*



*Mr. Lee and wax apple plants of 2m tall in netting structure*



*Mr. Lee repairing the roof of netting structure*

Flowers appear in September and fruit ripens in November under natural and normal weather conditions in Sarawak. However, wax apple in Mr. Lee's farm blooms and sets fruits almost whole year round, after every round of fertilizer applications. One kg organic fertilizer together with 300g NPK compound fertilizer per plant is applied at every two weeks. Water shoots and excessive auxiliary branches are trimmed. Pruning is a very important cultural practice for canopy management for wax apple. Simultaneous pruning of excessive branches and fertilizer application induce the wax apple to flower. As a result, fruits at different stages could be found in different trees in the orchard and even on the same tree.



*Four stages of fruit development can be found on the same tree*

Wax apple (Johor madu) is a heavy bearer on good soil. After 5 years planting, it may yield a crop of 700 fruits. However, the yield of a wax apple tree in Mr. Lee's orchard is 400 to 600 fruits a year because the plant was pruned to umbrella shape canopy at 2m tall. The average weight of a fruit is 100g. The present farm gate price is RM6.00 per kg.