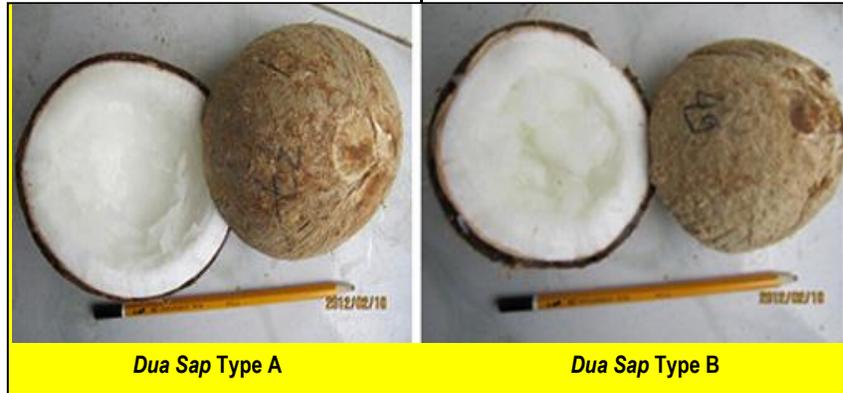


DUA SAP, SPECIALTY COCONUT OF VIETNAM

Ngo Thi Kieu Duong

In Vietnam coconut is mostly grown in the Mekong Delta. When Vietnamese think about coconut, they will immediately think about Ben Tre province. However, there is one place in Cau Ke district, Tra Vinh province which is popular for its special coconut called *Dua Sap* or *Dua Dac Ruot*. This special coconut has fluffy meat which is different from regular coconut. In the past, few people knew it and did not realize about its value.

In 1984, the Research Institute for Oil and Oil Plants (IOOP) started to collect coconut varieties for the establishment of coconut genebank in Vietnam. IOOP discovered *Dua Sap* in Cau Ke district, Tra Vinh province which was identified by IPGRI (International Plant Genetic Resources Institute). The results of the IPGRI findings on *Dua Sap* were internationally published. Since then, the relevant government agencies have conducted



research on it and the farmers' awareness of its existence has been increasing. Now, *Dua Sap* is gaining popularity in Vietnam.

Dua Sap belongs to Tall coconut which also has the highest economic potential in Vietnam. Because the price of *Dua Sap* fruit is 10 – 20 times higher than normal nuts. It is also 2 times higher than Ta, Dau fruit (popular tall varieties). So that, in Cau Ke district Tra Vinh province every farmer has some *Dua Sap* palms. When they want to replant their coconut or rehabilitate their farm they will

plant more *Dua Sap*. So that the planting area as well as the number of *Dua Sap* palms is increasing, and the demand of *Dua Sap* seedlings are increasing too.

The origin of *Dua Sap*

The origin of *Dua Sap* in Cau Ke district Tra Vinh province was from Cambodia. A senior bonze named Thach So planted *Dua Sap* in PaTungSaKu temple in Hoa Tan commune, Cau Ke district, Tra Vinh province. Until now, *Dua Sap* seedlings have been multiplied using traditional

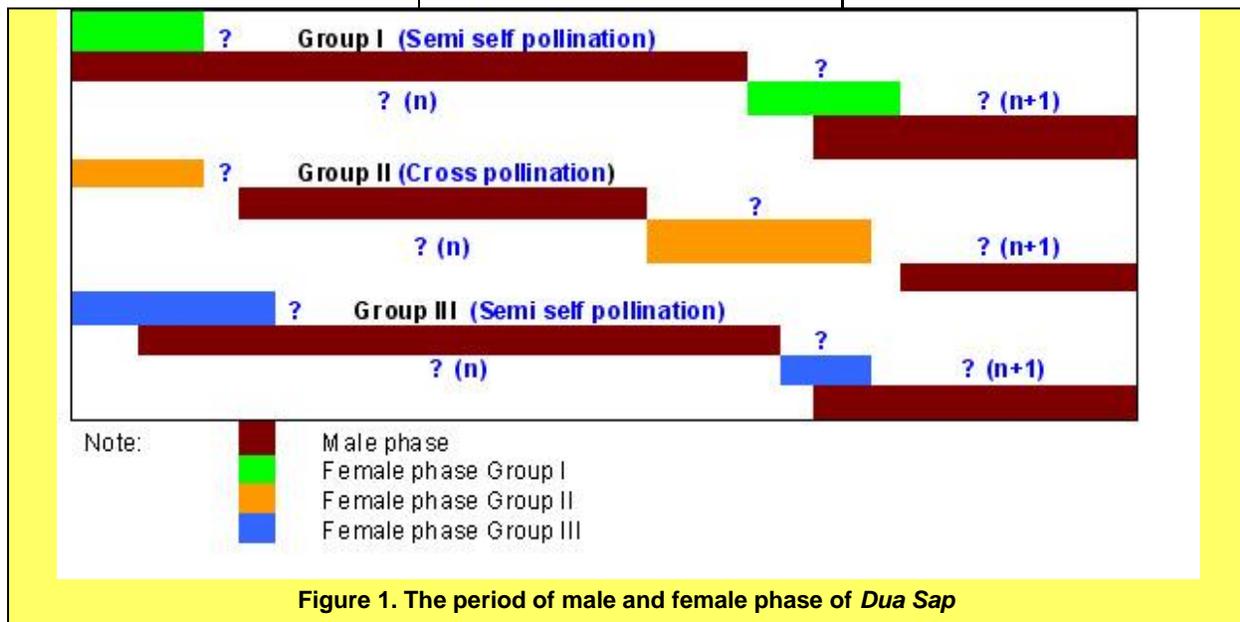


Figure 1. The period of male and female phase of *Dua Sap*

The Characteristics of Three Groups of *Dua Sap*

Characteristics	Group I	Group II	Group III
Fruit size	Medium	Large	Large
Fruit shape	Round	Angle	Round
Fruit color	Green	Green	Brown
Kind of fluffy meat	B	A	A
Kind of pollination	Semi - self	Cross	Semi - self

cultivation by coconut farmers.

The morphology of *Dua Sap*

There is no differences between *Dua Sap* and Ta, Dau varieties in terms of the external characterization of stems, leaves, leaflets, flowers and fruits. The only way to distinguish between *Dua Sap* fruits and normal fruits, when they are 11 month-old, is by shaking fruits. The popular fruit color is green.

In later years, there was natural cross breeding. In 2007, the scientific morphology was done with 80 palms, in Chong No.1, and Chong No.2 hamlet, Hoa Tan commune and Cau Ke town. There are three kinds of *Dua Sap* such as:

Group I: Round shaped, medium size, green color

Group II: Angle shaped, large size, green color

Group III: Round shaped, large size, brown color

The characteristics of *Dua Sap* flowering pattern can be seen in Figure 1. While the characteristics of *Dua Sap* fruit aged 11 months with 2 types (A and B) of the fluffy meat level are the following:

- Type A: *Dua Sap* Group II and III; the meat is soft; the water is slightly viscous; the endosperm thickness look like normal coconut.
- Type B: *Dua Sap* Group I; the liquid is very viscous and turbid; the meat is thicker than normal coconut.

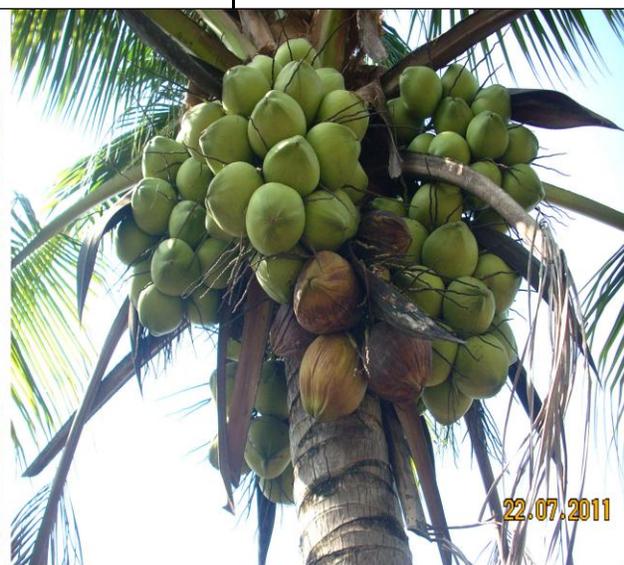
The results of *Dua Sap* Research

Because of the Government investments in cooperation with Tra Vinh Provincial Government and the farmer advocacy, *Dua Sap* is now wildly known as special coconut fruits in Tra Vinh province. Most of researches on *Dua Sap* were conducted by Research Institute for Oil and Oil Plants. The research results are as follows:

- *Dua Sap* seed-nuts were collected and conserved in Vietnam's coconut field genebank.
- The selection of 371 accession palms were identified and high yield of 87 nuts /palm/year which are good for traditional germination and embryo culture.
- Technology transfer on germination, cultivation,



Mother Palm of *Dua Sap*



Hybrid of *Dua Sap*



Fruiting palms of *Dua Sap*

New plantation of *Dua Sap*

protection and processing of *Dua Sap* was done through extension activities.

- some demonstrations farms of *Dua Sap* were set in the area of 56 hectares. Later on, *Dua*

Sap planting area was expanded by interested farmers. Now the area of *Dua Sap* is 126 hectares in Cau Ke district Tra Vinh province.

- The techniques which can increase the number of *Dua Sap* fruit/bunch were studied. It was found that inorganic fertilizer did not affect the number of *Dua Sap* fruit/bunch; hand pollination increased the number of *Dua Sap* fruit/bunch; the hormone 40ppm NAA would increase the number of *Dua Sap* fruit/bunch 1.2 times.
- Embryo culture technique is being improved to develop mass production of true type seedlings of *Dua Sap*
- New hybrid varieties of *Dua Sap* by cross pollination breeding between *Dua Sap* and Dwarf varieties were studied through hybridization technique.

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