

Anan Piriya-phattarakit 2015: Interspecific and intergeneric hybridization of *Mitrephora* and *Uvaria*. Doctor of Philosophy (Tropical Agriculture), Major Field: Tropical Agriculture, Faculty of Agriculture. Thesis Advisor: Associate Professor Thunya Taychasinpitak, M.S. 157 pages.

The interspecific and intergeneric hybridizations of 2 genera, *Mitrephora* and *Uvaria*, in Annonaceae family were carried out at Thailand Institute of Scientific and Technological Research (TISTR) during 2012 to 2014. Three species of genus *Mitrephora* including *Mitrephora keithii* Ridl., *Mitrephora sirikitiae* Weerasooriya, Chalermglin & R.M.K. Saunders., and *Mitrephora tomentosa* Hook.f. & Thomson., and two species of genus *Uvaria* namely *Uvaria grandiflora* Roxb. Ex Hornem., and *Uvaria siamensis* (Scheff.) L.L.Zhou., Y.C.F. Su & R.M.K. Saunders. were used in this breeding program.

Female stigma of all species could be optimally pollinated in the morning on the first day of flowering. The releasing period of pollen was over the period of 2 – 3 days after blooming. It should be noted that interspecific hybridization could produce fertile offspring only in the genus *Mitrephora*. The intergeneric hybridization between both genera was unsuccessful.

Four newly hybrids were generated from interspecific cross. Firstly, hybrid No. 1 (*M. keithii* x *M. sirikitiae*) had acuminate and dark green leaves, yellow outer petals, pink inner petals and fragrant flowers. Secondly, hybrid No. 2 (*M. keithii* x *M. tomentosa*) were small shrub with small leaves, short yellow outer petals and long striped inner petals. Thirdly, hybrid No. 3 (*M. tomentosa* x *M. keithii*) had small blade leaves, yellow outer petals and striped inner petals similar to *M. tomentosa*. Development of flower began from small shrub. Lastly, hybrid No. 4 (*M. tomentosa* x *M. sirikitiae*) is large shrub with large blade but no flowering during the first 2 years as their parent cultivars.

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Thesis Advisor's signature