

Nongkran Chotimudom 2011: Embryo Culture for Shortening Breeding Program of *Curcuma* ‘Siam Tulip’ as Pot Plant. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Thunya Taychasinpitak, M.S. 94 pages.

In this research to select suitable *Curcuma* hybrids for use as potted plants, crosses were performed using the Paper Patumma variety as pollen donor and Precious Patumma, Tabtim Siam, Star Patumma, Bualai Prachin, ‘Daeng-rakung’ and dwarf wild type as mother plants. An embryo culture technique was employed and comparisons were made between embryos aged 24, 27 and 30 days after pollination (DAP). It was found that the 30 DAP embryos of the Daeng-rakung x Paper Patumma cross had the highest survival rate at 94.00% and the 24 DAP embryos of the Precious Patumma x Paper Patumma cross had the lowest survival rate at 66.00%. In terms of callus formation, 27 DAP embryos of the dwarf wild type x Paper Patumma cross and 30 DAP embryos of the Tabtim Siam x Paper Patumma cross exhibited the lowest rate of callus formation at 0.50% and 24 DAP embryos of the Precious Patumma x Paper Patumma cross exhibited the highest rate of callus formation at 15.00%. As for shoot regeneration, the 27 DAP embryos of the dwarf wild type x Paper Patumma cross produced the most new shoots at 98.50% while the 24 DAP embryos of the Precious Patumma x Paper Patumma cross had the lowest rate of shoot regeneration at 64.25%. For every cross performed, there was a statistically significant difference in the survival rate and growth rate between 24, 27 and 30 DAP embryos.

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Thesis Advisor’s signature