

Napat Sirisuntornlak 2010: Studies of Pollination and Fruit Set in Durian (*Durio zibethinus* Murr.) cv. 'Monthong' by Various Periods and Methods of Pollination. Master of Science (Botany), Major Field: Botany, Department of Botany. Thesis Advisor: Associate Professor Kanapol Jutamane, D.Agr. 77 pages.

The durian floral characters are pendulous branched inflorescences and nocturnal blooming. Furthermore, stigma is receptive before the nocturnal anther dehiscence. These problems cause failure of natural pollination. The objective of these studies was to observe the suitable periods and methods of pollination in durian 'Monthong' cultivar by observing in four various methods of pollination such as self – pollination in the same tree at 18.00, self – pollination from other trees at 18.00, self – pollination from other trees at 14.00 and open pollination. The results showed that the percentages of fruit set within 120 days obtained from self – pollination in the same tree at 18.00, self – pollination from other trees at 18.00 and open pollination were similar, whereas self – pollination from other trees at 14.00 revealed fruit retention for only 42 days. The stigmas were both receptive at 14.00 and 18.00. Pollen tubes of self – pollination in the same tree at 18.00 and self – pollination from other trees at 18.00 reached the base of the styles within 12 hours after pollination before the pollen tubes of open pollination and self – pollination from other trees at 14.00 that reached the base of the styles within 24 hours after pollination. The lowest number of germinated pollens and pollen tubes during 6 – 168 hours were obtained from open pollination. The pollen tubes reached the ovary at the micropyle within 72 hours after pollination in all treatments. Open pollination revealed the highest percentage of deformed fruits. These results indicated that self - pollination at 14.00 could not successful due to fruit retention was observed only in 42 days. The fruit shape seemed to be related to the number of pollen tubes. The open pollination produced the highest percentage of deformed fruits due to the low number of pollen tube penetration in the ovaries.

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Thesis Advisor's signature