Imitation of Fig Wasp Pollination: An Innovation for Efficient Production of Cluster Fig (Ficus racemosa)

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The promotion of local fruit production to enhance community economic development and also to solve food security problem is of prime concern. Cluster fig (Ficus racemosa), a polycarpic plant with large multiple fruits, grows in various parts of Thailand. Fig fruit has high nutritional value, being high in natural sugars, minerals and fiber, however, commercial value is low because there are many pollinating fig wasps inside. This study aims at developing innovation method for efficient production of cluster fig by imitation of fig wasp pollination. Observation of the pollination behavior of fig wasp (Eupristina verticillata) in test box containing 100 female wasps, 50 male wasps and cluster fig's syconium (early flowering stage) at the age of 5-45 days revealed that only female wasps could enter an ostiole channel on the syconium. The youngest age of syconium for pollination was 10 days and the highest number of fig wasp was found with 25 day - syconium. Further experiment indicated that fig wasp pollination was necessary for mature development. The equipment, comprising the spine to collect pollen and the tip to be inserted into the ostiole imitating the pollination behavior of wasp, was then developed to allow maturation without fig wasp. The developed equipment could be used for activating maturation of all fig fruits tested (n=50). In addition, the ripened fruits obtained were free of wasps and were of high quality with good mass, high number of seed, sugar and acid contents, thus increase their commercial value.

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