Studies on Pollen Viability, Stigma Receptivity and Pollination Behavior of *Annona muricata* L.

A.G.K.M.N. Mangala[1], H.M.S. Heenkenda[2], and W.A.P.C. Weerasinghe[1]

[1]*Fruit Research and Development Institute, Horana, Sri Lanka*

[2]*Ministry of Agriculture, Sri Lanka*

ABSTRACT

In order to achieve yield and quality improvement of *Annona muricata*, precise knowledge on its floral biology is essential. A study was conducted to evaluate pollen characteristics and pollination behavior of *A. muricata.* Pollen viability was studied by culturing pollen in liquid media on a cavity slide under different incubation temperatures, and identified the best medium and temperature used for longevity assessment. The ideal stage of stigma receptivity was determined by pollination during 3-6 days of anthesis where pollination success was assessed under four pollination methods; natural pollination, manual cross pollination, autogamy and geitonogamy. The best pollen germination rate was observed in the medium with 10% sucrose, 0.01% Boric acid and 0.01% Calcium nitrate at a temperature of 32^0C. The best time of pollen collection for cross pollination was 8.30 a.m., and the pollination was successful on the day five of flower anthesis which coincides with the best stigma receptive stage of flower. There was no significant effect of accessions on pollen viability longevity, stigma receptivity and pollination behavior. High yields and high number of fruits can be obtained from *Annona muricata* by manual cross pollination.

Key words: Manual cross pollination, Pollen germination, Longevity

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