

Anther Dehiscence, Pollen Viability and Stigma Receptivity Study on Cultivars of Black Pepper (*Piper nigrum* L.)

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ABSTRACT

A study on floral biology of black pepper cultivars that cover anther dehiscence, pollen viability and stigma receptivity was carried out with the aim to improve the efficiency of intervarietal hybridisation in black pepper breeding work. In this study, 10 black pepper cultivars were used, namely ‘Semongok Aman’, ‘Kuching’, ‘Semongok Emas’, ‘Semongok Perak’, ‘Semongok 1’, ‘Nyerigai’, ‘India’, ‘Lampung Daun Lebar’, ‘Sarikei’ and ‘Yong Petai’. The results show that anthesis in the 10 black pepper cultivars occurred between 10.25 pm and 10.50 pm. In the pollen viability study, results suggest that pollen are more viable between five and 10 hours after anther dehiscence. However, there are variations among the cultivars for the optimum viable stage. For stigma receptivity, the results show that stigmas at Stage 2 (elongation and spreading of stigmata) and Stage 3 (complete emergence and wide spreading of stigmata) had better receptivity than Stage 1 (first appearance of stigmata). There was no difference in stigma receptivity stages among the 10 cultivars. This study thus, shows the most suitable time for intervarietal hybridisation via artificial pollination.

Keywords: Anther dehiscence, black pepper cultivars, pollen viability, stigma receptivity

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INTRODUCTION

Black pepper, scientifically called *Piper nigrum* L., is a spice plant from the family of Piperaceae. The plant is known as the King of Spices, and is the world's most widely used spice due to its unique aroma and pungency. In Malaysia, the