



**Directionality and dispersion analysis on branching patterns in  
Straits Rhododenron (*Melastoma malabathricum* L.)**

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Straits Rhododenron *Melastoma malabathricum* L. is a scourge in arable lands, abandoned farmlands, secondary forest openings and derelict areas in Malaysia. We assessed branching patterns of Straits Rhododenron at three planting densities through directionality and dispersion analysis using circular statistics. Matured plants of *M. malabathricum* at the density of 1, 2, and 3 plant box<sup>-1</sup> were raised in wooden boxes measuring 1 m x 1 m and 8 cm in depth, previously filled with garden soil of the Malacca series. The position of each branch was characterized by three parameters, and these were related to the degrees of freedom for the displacement of the branch as a solid body, viz. horizontal rotation (branch azimuth), vertical rotation (branch base inclination), and translation (branch height). The number of branches for each 50 cm interval through plant height was also recorded. The azimuth of the branch was measured within 45°, using a circular protractor, divided into 8 angular sectors and orientated clockwise. The length of mean vector ( $r$ ) was obtained by using a circular data analysis at each 50 cm intervals of plant height. All azimuth angles were measured from the north direction (0°) and the leaf base height above the soil was measured to the centimeter using a rule tape. Growth parameters namely plant height; primary, secondary, and tertiary branch length and numbers, and leaf numbers in each category of branches. Secondary and tertiary branches, their respective angles and lengths were measured to assess branching patterns as influenced by density.