

Cambial activity of *Dipterocarpus costulatus* in relation to different stem diameters and climate factors

Abstract

This study investigated the seasonal cambial activity in *Dipterocarpus costulatus* trees with different range of stem diameter at breast height (dbh). Samples from main stem of *D. costulatus* with dbh 15 cm and 25 cm growing in natural lowland dipterocarp rainforest of west Peninsular Malaysia were collected for this purpose. Collections of cambial samples were carried out in 2-month intervals from August 2010 till June 2011. Cambial activity was determined by counting the numbers of cambial and expansion zone cell layers towards the outer sapwood. A greater number of cell layers indicated greater cambial activity. Results showed that the cambium of trees with dbh 15 cm were influenced by the amount of rainfall. However, cambium of trees with dbh 25 cm showed relatively less sensitivity to rainfall. *Dipterocarpus costulatus* showed active and inactive phases during the observation period. Thus, this study has proven that this species did not grow continually at the same rate in natural forests. Instead it showed periods of alternate active and inactive growth.

Keyword: Growth variations; Rainfall; Secondary xylem growth