

Karita Chongchuaklang 2009: Effect of Paclobutrazol on Growth and Anatomical Change of Burmese Rosewood (*Pterocarpus indicus* Willd.). Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Krisana Krisanapook, D.Agr. 96 pages.

Pterocarpus indicus Willd. is a fast growing tree and frequent pruning is required to prevent the damage from excessive growth of branches when grown under power line. Paclobutrazol (PBZ), a plant growth retardant, was tested on them for growth control. The aim of this study was on appropriate concentration of PBZ and optimum application time. PBZ was applied to tree by soil drench. In experiment 1 ; 0, 5 and 10 g (a.i.) PBZ was applied at the same time of pruning. In experiment 2; 10 g (a.i.) PBZ was applied at 1 month before pruning, at the time of pruning and 1 month after pruning. In experiment 3; PBZ 10 g (a.i.) was applied one or two times. PBZ residual in soil was determined by bioassay method. The experiment 1 showed that PBZ treated trees were shorter than the control but there was no significant differences on shoot length, internode length, leaf area and leaf greenness value between PBZ treated trees and untreated trees. PBZ application time revealed insignificantly different for plant height, canopy width, shoot length and leaf greenness value. In experiment 3; plant height, plant canopy, shoot length, internode length, leaf size, leaf greenness and leaf total chlorophyll of trees applied with one and two time of 10 g (a.i.) PBZ were not different. Plants received PBZ one or two times had similar growth when compared with the control. It was found that leaf palisade and spongy parenchyma cell width, palisade parenchyma cell length and intercellular space of leaves from PBZ treated trees were smaller than those leaves from untreated trees, but PBZ increased spongy mesophyll thickness. The PBZ residue still remained in the soil 8 months after treated plants.

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Thesis Advisor's signature

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