

Phanom Sutthisaksopon 2006: Effects of 4 Training Systems in High Density Planting on Vegetative and Reproductive Characteristics of Java Apple (*Syzygium samarangense* (Blume) Merr. & Perry) cv. Thabthimchan in the First Bearing Year. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Kawit Wanichkul, Dr.agr. 117 pages.

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This study revealed effects of four training systems: open center (control), slender spindle (SS), palmette (PM), and Y-trellis (YT) in high density planting on vegetative and reproductive characteristics of Java apple cv. Thabthimchan in the first bearing year. The experiment was conducted at the experimental field of the Department of Horticulture, Faculty of Agriculture at Kamphaeng Saen, Kasetsart University, Kamphaeng Saen Campus, Nakhon Pathom during December, 2003 to May 2005. The results showed that different training systems had different effects on the increasing of trunk cross-sectional area. Furthermore, significantly were recorded regarding to canopy volume, number of inflorescences, number of flower, percent of fruit set, percent of flower and fruit drop, percent of fruit thinning, yield per tree, number of fruit harvested per tree, yield per unit area (rai), yield efficiency and yield density. The training systems had affect to relative shoot growth rate. However, some periods of shoot growth showed significant. Training systems did not significantly influence on specific leaf area as well as fruit quality. Java apple trees trained as SS showed the least canopy volume, whereas control had the highest canopy volume among treatments. Control and SS gave higher yield than YT and PM. The highest amount of fruits in the biggest fruit grade derived from SS followed by control, YT and PM, respectively. The income which calculated from selling product showed the highest in control followed by SS, YT and PM, respectively. Training systems did not significantly changing of total nitrogen content, but changing of total non-structural carbohydrates content in branches and leaves of training systems showed significantly difference in some months. It was found that light interception comparing among treatments showed significantly difference before the harvesting period. The highest light interception was found in SS system followed by control YT and PM, respectively.

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Thesis Advisor's signature