

Chawisa Satitvaingthong 2009: Effects of Leaf Number, Leaf Position and Branch Angles on Growth and Yield of Physic Nut (*Jatropha curcas* Linn.). Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Associate Professor Sombat Chinawong, Ph.D. 93 pages.

In order to study the effects of leaf number, leaf position and branch angles on growth and yield of physic nut (*Jatropha curcas* Linn.), three main agronomical experiments were carried out during January of 2008 to January of 2009 in the research field of Department of Agronomy, Kasetsart University, Kamphaeng Saen campus, Nakhon Pathom province. In the first experiment, the effects of the leaf number and its position on the growth and yield were examined. The physic nut with 2, 4, 6, and 8 leaves at varied leaf positions (ie. at the proximal, at 15 cm and 30 cm high from the panicle) were planned and inspected. According to the statistical collection of the data, the analyzed results showed that the number of leaves and their height from the panicle had no effect on the growth and yield of the physic nut. However, in the second experiment, the study of branch angles effect underlined that although the branch angles did not influence on the growth, but, in the other hands, it increased the yield of the physic nut. From the experiment, the physic nut with the branch angles at 0-30° (T3) obtained the highest pistillate flowers of 15.0, whereas those with the branch angles at 30-60° (T2) and 60-90° (T1) received the lesser amount of pistillate flowers at 11.5 and 10.3, successively. As in good agreement with the number of pistillate flowers, the physic nut with the T3 branch angles also yielded the highest fruit number at 13.8 fruit, which was greater than the others with the branch angles T2 and T1, which produce 9.8 and 9.1 fruit, respectively. Afterward, the effect of the pruning height to the growth and yield of physic nut was investigated. By planted in the growing space of 2x2 m and the 3x3 m, all physic nut in each space were pruned down at the height of 50, 70 and 90 cm above the ground. In this third experiment, the results revealed that, after 150 days, the pruned physic nut at 90 cm above ground were tallest with the 178.6 cm high and produced the highest yield at 114.8 g per plant, comparing to the pruned down plants at 70 and 50 cm above ground, which had plant height at 172.2 and 140.6 cm, and obtained the yield per plant at 78.7 and 13.7 g, consecutively.

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Thesis Advisor's signature

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