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| Thesis Title | Effects of Root Temperatures on Growth and Development of Mango |
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## Abstract

The study on the effects of three levels of root temperatures, 15°C, 20 °C and ordinary (average of 25.8°C) on the growth and development of mango (Mangifera indica L.) cv. Chok-anan, was conducted from July 22 1991 to June 22, 1992 at the Faculty of Agriculture, Chiang Mai University. Results of the study showed that at 15 ° C, 20 ° C and ordinary root temperatures, no significant effect was observed on the height rate, root dry weight, development of new shoots, number of leaves, shoot length, stem diameter, width, leaf length and leaf area. However, the rate of canopy width, stem diameter, leaf and stem dry weight, total dry weight were higher than at ordinary root temperature than those at 15° C and 20 ° C

Number of leaves and flowers per tree were higher during ordinary root temperature and at 20° C Leaf flushing at all levels of root temperature was highest in September. From July to October, number of

leaves flushed at ordinary temperature was highest. However, from March to June, no significance was observed on leaf flushing at all levels of root temperature. The change of leaf color to yellow-green took fewer days in 144 Group A at ordinary root temperature as compared to the two other levels. Flower emergence was earliest at ordinary root temperature and was at maximum in January and April. At 15 ° C and 20 ° C, highest flower emergence took place in February. From November to February, number of flowers showed no significant difference at all levels of root temperatures except from March to June.

For sex ratio of cultivar, male to perfect flower was higher in the normal season than in off-season. During the normal season, sex ratio of male to perfect flower was higher at 20 ° C than the other two levels. But during the off-season, flowering at all levels of root temperatures showed no significant defference. From November to February, percentage of fruit setting at ordinary root temperature was higher than in 15 ° C and 20 ° C, however, during March to June, no significant difference was observed.

It was also observed that total content of nitrogen, chlorophyll a and b in leaves at ordinary root temperature were higher than in 15 °C and 20 ° C although the difference in the contents of phosphorus and potassium was not significant.