CHAPTER 5

CONCLUSION

The objectives of this research were to determine the most effective macropropagation methods of Musa (ABB) cv. 'Kluai nam wa' in Chiang Mai Province, Thailand, and the influence time of year and location play on the growth of banana plantlets. These goals were achieved through greenhouse and field trials.

Greenhouse trial results suggested that treatment played a significant role in determining number of plantlets. Across locations, BA1, when applied in the rainy season, produced significantly more plantlets than PIF. This was most likely a result of the cytokinin properties of the benzylaminopurine inducing axillary growth, in addition to the reduced apical dominance from removal of the meristem. Across sites in the dry season, treatments were not significant in influencing number or quality of plantlets. For the variable of circumference, only SC produced significantly smaller corms than other treatments, due to fewer photosynthates available for the plant to draw from the split corms.

Different seasons, as proxied by run, also played a significant role in determining the number of plantlets produced, cumulative days to emergence, and cumulative GDD to emergence, with strong evidence that cooler temperatures in the dry season reduced plantlet production. Site also influenced GDD to emergence,

suggesting that increased temperatures in the lowlands increased plantlet production.

Results for the field trial indicated treatment only showed significant difference with respect to circumference with MM significantly larger than BA1, BA1 and Cont, but not CW. This is a result of the mat age and the damage done to suckers; older mats produce more water suckers which have smaller circumferences; damaged suckers form plantlets similar in initial form to water suckers. MM treatments were done on younger mats with no damage done to suckers.

Neither run nor site made a significant difference in the number of plantlets, days to emergence, GDD to emergence, or circumference. Ambient temperatures were not extreme enough to affect the growth of the plantlets.