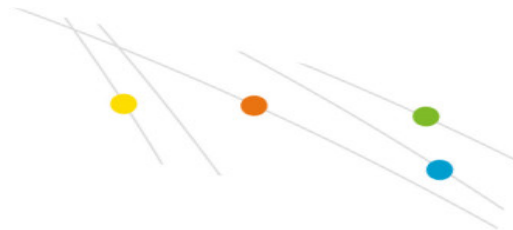


Potassium nitrate acts to stimulate and concentrate terminal bud development in Nam Doc Mai terminal shoots

Bearing Nam Doc Mai Si Thong mango trees in a non-irrigated orchard in the Chachoengsao Province, Thailand, were either soil treated in mid-July, 2011, when new terminal shoot development was commencing, with paclobutrazol (PBZ) or were left untreated in this regard. The treated trees were either sprayed or not sprayed with potassium nitrate in October and November to effect terminal bud and inflorescence development. Potassium nitrate (KNO_3) was sprayed on October 10, 20 and 27, and on Nov. 3, 2011. In addition, some of the KNO_3 sprayed trees were also sprayed with Ethrel/SOP in early September (Sep. 1 and 8) as a measure to prevent early bud development from the new shoots arising after PBZ treatment.

Ethrel/SOP treatment had no apparent effect on the flowering period or flowering intensity. Only one flush materialized after mid-July from which new shoots or inflorescences developed during October and November. The trees not treated with PBZ or KNO_3 generally produced new shoots, whereas those treated with PBZ only produced inflorescences during Nov. and Dec. Here, terminal bud break was not concentrated, occurring over the entire period, and had not occurred or occurred very little by Nov. 10. In the trees sprayed by KNO_3 , 40 to 50% of the terminal shoots showed extending or flowering inflorescences on Nov. 10 (Figure 1). During the 12 days that followed, terminal shoots showing inflorescence development in the PBZ treated trees increased to 58%, the level of those sprayed with KNO_3 . By Nov. 24, 55 to 65% of all the treated trees showed inflorescence development, this increasing to 70 to 80% by Dec. 22. New shoots developed from terminal shoots on the untreated



trees in a similar pattern and in the same time period as the trees treated with PBZ only. The data clearly indicate that the PBZ induced inflorescence development, whereas the KNO_3 sprays acted to stimulate and concentrate terminal bud development.

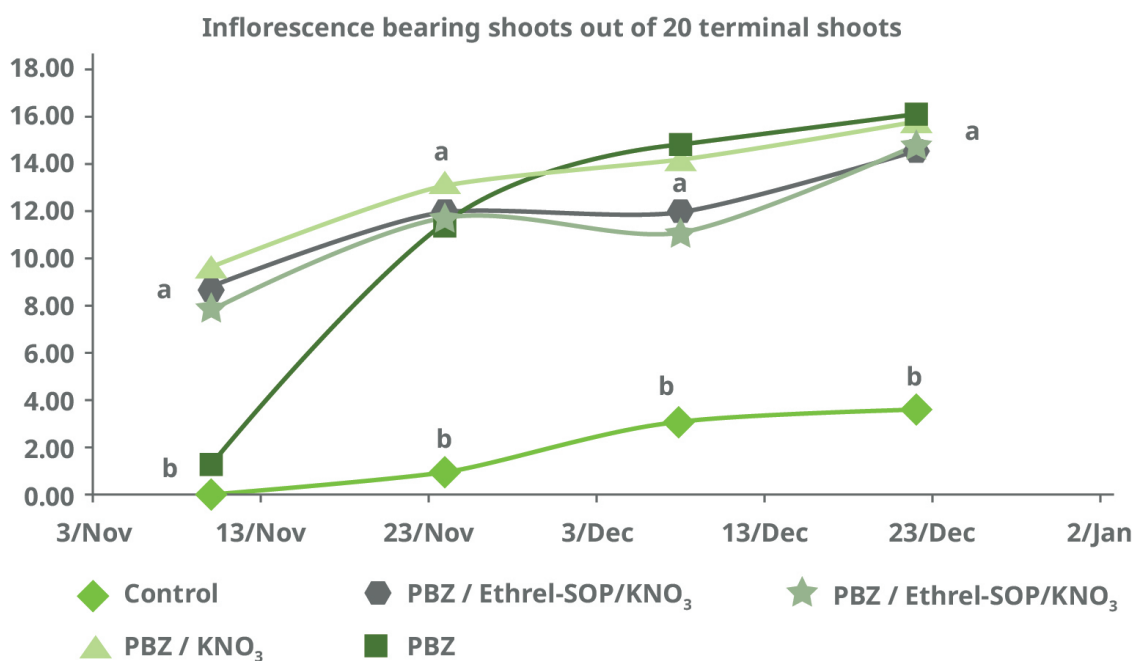


Figure 1. Marked terminal shoots showing inflorescences on Nov. 10 and 24 and Dec. 8 and 22, 2011. For specific dates, differing letters indicate significance according to the 5% LSD criterion.