

Chapter 10

Summary of overall

From all of the experiments in this dissertation were, (1) Effect of PBZ on Physico-chemical properties of mangoes fruits. (2) Effect of PBZ on Ripening Index (RPI). (3) Determination of Paclobutrazol Residue: Developing and Optimizing GC-MS and SPME condition. (4) Method Validation of PBZ Residue in Mango Fruits. (5) Method Validation of PBZ Residue in Soil. (6) Paclobutrazol Residues in Mango Fruits 'Chok Anan' cultivar and (7) Paclobutrazol Residues in Soil, which conclusion could be made as follows:

(1) The effect of PBZ on physical and chemical properties for preharvest and during the ripening process was affected in some their parameters such as: flowering, yield, TSS, TA, and firmness. However, these depended on several factors such as PBZ concentration, cultivar, crop year, location and others.

(2) The analyzed results could be used as a basic data for the ripening index (RPI) by computable following formula: $RPI = \ln (100 \cdot F / (TSS/TA))$, (Mahayothee, 2004). It was found that RPI at fully ripe were fluctuated which was depended on cultivar, crop year, location and others.

(3) There was a successful development and validation of the method of analysis paclobutrazol (PBZ) residue in soil. The SPME-GC-MS technique could be used in combination with conventional extraction method. Furthermore, this method was applied to evaluate residue of PBZ from soil on-site in different depths. The result found that the PBZ residue in an initial depth (0-5 cm) increased from approximately 0.01-0.30 mg of PBZ/kg of dry soil to levels approximately above 10 mg/kg of dry soil, depending on the depth in each time.

(4) The method for paclobutrazol residue analysis of mango cv. Tommy Atkins (edible part) was successfully developed and validated. The SPME-GC-MS technique was used with the combination of conventional extraction method. Moreover, this method was only applied to the analysis of PBZ residue in Chok Anan cultivar. The result indicated that PBZ residue in the treated trees (Chok Anan cultivar) with 0.5 g *a.i.* per square meter was found below the limit of detection in mango mesocarp 0.005 mg/kg that was safety.

(5) PBZ persists in the soil for a long time. It dose not suitable to apply PBZ in drenches, therefore it has high effected to induce mango off-season flower, and only foliar spray and high-pressure injection technique are reduction of an excess chemical in soil along with promotion of an efficient use of PBZ can be recommended.