

**Title** Modified atmosphere packaging of fresh chili (*Capsicum annuum*) in the greater Mekong sub-region

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### **Abstract**

Chili (*Capsicum annuum*) fruits cv. CCA321 produced in Cambodia, Lao PDR and Vietnam were separately subjected to modified atmosphere packaging (MAP) during ambient storage using two commercially available polymeric films, 25 micron thick low-density polyethylene (PE) and polypropylene (PP). Fruits held in the open served as control. Three harvest ripeness stages, mature green (Lao and Vietnam experiments) or breaker (Cambodia experiment), turning and red stages, were used. Both MAP films remarkably reduced weight loss of the fruits regardless of harvest ripeness and country. Weight loss was only about 1.5% or less whereas fruits held in the open lost more than 10% of their initial weight after three days of storage as obtained in the Cambodia experiment. However, fruit decay increased in MAP. In general, decay was higher in turning and red fruits than in green fruits in both PE and PP films. In the Vietnam experiment, fruits held in PP had lower decay incidence than that held in PE. On the other hand, reddening of fruits harvested green/breaker or turning differed with country. In the Cambodia experiment, more than 80% of turning fruits continued full red color development in the open or PE but when PP was used, fruit reddening decreased to less than 70%. For breaker fruits, the number of fruits that turned full red decreased especially when PP film was used. In the Lao experiment, both MAP films inhibited red color development. A contrasting result was obtained in the Vietnam experiment. MAP did not affect reddening of fruits at green stage while it inhibited that of fruits at turning stage. The fruits that turned red in storage had colorimetric  $a^*$  values comparable to that of freshly harvested red fruits.