Thana Thanadechakul 2009: Enhancing Efficacy of Ethylene Scavenger Adhered to Paper from Oil Palm Frond Pulp to Decelerate Ripenness of *Mangifera indica*. Master of Science (Packaging Technology), Major Field: Packaging Technology, Department of Packaging Technology. Thesis Advisor: Mr. Lerpong Jarupan, Ph.D. 123 pages.

The present research aims to seek ways for enhancing scavenging efficacy of ethylene that released from the repiratory process from mangos (Mangifera indica), in order to decelerate the ripeness during transportation. The methodology investigated effects on scanvenged ethylene by the mixture of potassium permanganate ($KMnO_4$) and organic supporting materials in harmony to the coating with bio-based films on paper substrate produced from sulfate pulp of oil palm frond (Elaeis guineensis). The results showed that ethylene scavenger $KMnO_4$ combined with talcum as a supporting material on the oil palm pulp sheet was contained the highest $KMnO_4$ content of 0.0562% (w/v) after stored 15 days ($p \leq 0.05$). Then the coating with chitosan film exhibited low oxygen transmission rate as 784.07 ($cc/m^2/day$) to prevent the deterioration of ethylene scavenger from being oxidized. Percentage of scavenged ethylene on oil palm sheet coated with chitosan film was 55.45% and 61.03% under a room temperature(25 ^oC) 65 %RH and 10 ^oC 98.7 %RH, respectively within the first day. However, it can be seen that the ability of scavenging ethylene of $KMnO_4$/talcum solid on oil palm sheet tended to reduce gradually after 15 days, that was 20.13% and 25.59% under room temperature 65 %RH and 10 ^oC 98.7 %RH respectively. Consequently, ethylene scavenger on oil palm pulp sheets stored simultaneously with mangoes under 10 ^oC 98.7 %RH outperformed those under the room temperature with 65 %RH. To this end, it can concluded that ethylene scavenger was capable of prolonging shelf life by decelerating the ripeness of mangoes. The study highlights the potententiality of using oil palm pulp sheet combined with $KMnO_4$/talcum coated with chitosan film in order to perform as an ethylene scavenger sheet for delaying the ripeness of other climacteric produce.

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