

Niramol Wirathepsuporn 2008: Development of Cushioning Material from Waste Corrugated Paper for Nam Dok Mai Mango (*Mangifera indica* Linn.) Distribution. Master of Science (Agro Industrial Product Development), Major Field: Agro Industrial Product Development, Department of Product Development. Thesis Advisor: Assistant Professor Withida Chantrapornchai, Ph.D. 106 pages.

Aim of this study was to develop cushioning material from waste corrugated paper to replace net foam for distribution of mango. The results showed that cushioning user wanted inexpensive and reusable cushioning material as well as providing protection for mango from mechanical damage after packing, during transportation and storage. The study of effect of waste corrugated paper to water ratios (1: 200, 1:150, 1:100 and 1:50) and pulping time (15, 30, 45 and 60 minutes) on the quality of cushioning material from waste corrugated paper showed that as the ratio of waste corrugated paper to water increased the yield increased, while as the pulping time increased the yield decreased. At the ratio of waste corrugated paper to water of 1:50 and 30 minutes of pulping time resulted in 90.29% yield. The quality of formed paper showed that higher ratio of waste paper to water and longer pulping time resulted in higher tensile and tearing index. The quality of formed paper at ratio of 1: 50 and pulping time of 60 minutes had the tensile index of 2.22 Nm/g and the tearing index of 23.84 mNm²/g. The developed cushioning material from waste corrugated paper at pulping time of 30 minutes and cushion bubble height of 0.25 centimeter was not different from those of 45, 60 minutes and net foam when used as cushioning materials for mango distribution. When mango was wrapped (smooth-side in) by developed cushioning material with pulping time of 30 minutes and cushion bubble height of 0.25 centimeter, it showed better protection efficiency than that of net foam. This study reveals that there are potential of value added of waste corrugated paper into cushioning material to replace net foam.

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Thesis Advisor's signature

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