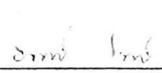


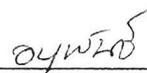
Thitipong Phothisoot 2007: Design and Development of Mechanism for Detaching the Shank of Young Ear Corn. Master of Engineering (Food Engineering), Major Field: Food Engineering, Department of Food Engineering. Thesis Advisor: Assistant Professor Anupun Terdwongworakul, Ph.D. 103 pages.

The mechanism for detaching the shank of young ear corn was designed and developed for installation in the baby corn husking machine based on rollers. This research investigated the relationship between the whole length of the baby corn and the shank of young ear corn and the obtained data would be used in the design of mechanism for detaching the shank of young ear corn. 100 young ear corn of the SG17SUPER variety were measured. The results indicated that the greater the whole length of the young ear corn (C) the greater the shank length (A). Linear regression analysis showed R^2 between these 2 parameters of 0.7919. The implication of this regression result was that young ear corn had to be graded by the whole length to obtain the consistent length of shank. Then the young ear corn was tested to study the optimum shank detaching configurations. The best method to detach the shank from the young ear corn was to cutting individual corns along the longitudinal axis before detaching. Besides detaching the shank at the calculated distance was the best position and the efficiency was 96%.

The position that used to design the mechanism for detaching the shank was 4.9 cm from the shank tip. The detaching level was tested at different moisture content of the shank (87.50, 84.75 and 80.53%) that resulted from 3 days of storage time. The statistical analysis with Chi-square test indicated that the detaching level was significantly correlated well with its moisture content at 0.01 level of test. The performance testing showed that this detaching mechanism performed with 89% maximum efficiency.



Student's signature



Thesis Advisor's signature

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