

Ratthapol Somsib 2013: Efficiency Improvement of Collection and Distribution Centers for Pomelo in Nakhon Pathom Province. Master of Engineering (Agricultural Engineering)  
Major Field: Agricultural Engineering, Department of Agricultural Engineering. Thesis  
Advisor: Associate Professor Somyot Chirnakorn, Ph.D. 124 pages.

Nakhon Pathom is regarded as one of the most Pomeloes planting area in the western region. In this study, the collection and distribution of pomeloes may reduce the cost of transportation by individual trader. Therefore, this research is to study the form of the collection and distribution of pomeloes in Nakhon Pathom and to improve the efficiency of collection and distribution of local trader and exporter in Nakhon Pathom.

The data analysis from the interviews of pomelo traders found that the form of distribution included receiving pomeloes from Nakorn Pathom and the other provinces to sell to consumers. The sold domestic varieties of pomeloes comprised of Tong Dee, Khao Num pung, Khao Yai and Khao Phan. The exporters get the pomeloes from Nakorn Pathom for coating and box packing. Then, they were transported to Leamchabang ports and were sent to consumers. The exported pomeloes were only Tong Dee and Khao Num pung.

Gravity Location Model was used to find the appropriated position of pomelo local traders and exporters. It was found that if the collection and distribution center of pomeloes was located on Songkanong at Sampran in Nakorn Pathom, the transportation costs decreased 1,364.24 Baht/month (6.21 percent/month) or 9,044.13 Baht/year (1.81 percent/year). Since the transportation cost was not significantly different, it showed that the old position of the pomelo trader was suitable and was not necessary to move to the new appropriated collection and distribution position.

Hub and Spoke Model was used to find the appropriate quantity and location of collection points and distribution points of pomelo local traders. The transportation costs of six appropriated pomeloes collection points were increased 4,618.04 Baht/month or 21.2 percent. The Model was also applied for pomelo exporters. It was found that for two pomelo collection points and one distribution point, the transportation cost was increased 33,523.91 Baht/year or 6.72 percent. Since the transportation costs with the collection and distribution points were higher than the without ones, it was not necessary to set up any collection points and distribution points of pomelo at various locations as defined by the model.

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