

Malinee Luangklang 2014: Analyzing and Designing of Experiments to Minimize the Loss of Mangoes' Problem in Anthracnose Disease Case Study of Mangoes' Shipping to Japan. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Miss Ailada Treerattrakoon, Ph.D. 81 pages.

This purpose of this research is to determine the appropriate parameters during shipping mangoes to Japan. The most important factor that impacts quality of mangoes is Anthracnose. At present, there is 3% to 15% of damaged mangoes during transportation. To reduce this damage, experiments have been established and divided into 2 groups. The first experiment, there are 3 factors: the temperature of dissolved prochloraz type 1, the concentration of prochloraz and the breed of mangoes. The second experiment, there are 3 factors: the temperature of dissolved prochloraz type 2, the period of time before dipping mangoes into prochloraz solution, and the period of time before vapour heat treatment process. 2^3 full factorial design and analysis of variance have been applied with Minitab at 90% confidence level. The result of this research has found that the temperature of dissolved prochloraz type 1 interacts with the concentration of prochloraz. The temperature of dissolved prochloraz type 2 interacts with the period of time before dipping mangoes into prochloraz solution. According to the result, the prochloraze should be dissolved in water at 53 ° C with concentration 250 ppm and mangoes should be dipped into prochloraz solution within 16 hours after harvest. As the result, the damage has reduced 1.75% to 13.75%

Student's signature

Thesis Advisor's signature