

**Title** Mass Transfer Kinetics of Longan Leather between Hot Air and Far-infrared Drying  
**Author** Somkiat Jaturonglumlert and Tanongkiat Kiatsiriroat  
**Citation** Program and Abstracts, 3rd International Symposium on Longan, Lychee and Other Fruit Trees in Sapindaceae Family, August 25-29, 2008, Fuzhou, China. 132 pages.  
**Keywords** longan; drying

#### **Abstract**

The aim of this work was evaluate the mass transfer kinetics of longan leather during hot air drying compared to far-infrared drying. Three models of mass diffusion were applied to evaluate the effective moisture diffusivity. The first model was an estimation using the analytical solution of Fick's law of diffusion and Arrhenius relation of which the equations were solved by iteration technique. The second model was similar to the first one but additional shrinkage parameter was included. The last model was the modification of Arrhenius relation by including moisture content into the relation. Effect of mass transfer kinetics of longan leather by hot air and far-infrared drying were carried out at equivalent parameters. The operating time of far-infrared technique was found to be shortened up to 50% and the value of effective moisture diffusivity was higher than that of the hot air drying. The effective moisture diffusivity increased as the supplied far-infrared radiation power was increased. The last model was found to be the best fit to experimental data.