

## Energy Consumption and quality attributes for drying postharvest of dragon fruit (*Hylocereus undatus*) following disinfesting hot air treatments

*Tuesday 22 May 2018 15:00 (15 minutes)*

Hot air drying is one of the simplest drying methods with low investment and operating costs. In this work, energy consumption and quality attributes for drying postharvest of dragon fruit (*Hylocereus undatus*) were studied. Energy consumption, moisture content, color and sensory evaluation were measured for drying with a hot air dryer. Drying experiments of freshly dragon fruit were conducted at different levels of drying air parameters including temperature ( $T = 70, 80$  and  $90^{\circ}\text{C}$ ), velocity  $0.5\text{ m/s}$  and relative humidity  $40\%$ . The result found that the drying rate increased with drying temperature, enhanced the drying rate and reduced both drying time by  $110\text{ min}$  ( $46\%$ ) and specific energy consumption by  $90^{\circ}\text{C}$  water removed ( $72\%$ ). One of the best indices for explaining color changes of the product during processing is total color difference, It can be seen that  $L$ ,  $a$  and  $b^*$  values increased with drying temperature. Sensory acceptability for the product dried under  $90^{\circ}\text{C}$ , velocity  $0.5\text{ m/s}$  and relative humidity  $40\%$  were comparable to that of the reference (freshly dragon fruit).

**Author:** Mr BOONSUWAN, Sirakop (Physics Rajabhat Mahasarakham University.)

**Co-authors:** Dr SAROBOL, Mali; Dr THAMMAPAT, Pornpisanu; Dr PHARANAT, Wanida; Mr SUTTHAM, Weerapong (Physics Rajabhat Maha Sarakham University)

**Presenter:** Mr BOONSUWAN, Sirakop (Physics Rajabhat Mahasarakham University.)

**Session Classification:** A014: Environment (Poster)

**Track Classification:** Environmental Physics, Atmospheric Physics, Geophysics and Renewable Energy