

# Picos, Solution to Store Fruit and Vegetable

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In general, agricultural products require optimum condition to keep the quality good. One of the ways done is to prevent the respiration of such products which will slow down the loss of water due to respiration. In some types of fruit and vegetables, water is the biggest composition of the products that affect the weight loss. If the weight loss is bigger each time, this will cause economic loss.

Weight loss issue also happens at the Sabila Farm that produces pitaya fruit. After harvesting season, they just store the fruit in cardboard boxes in open room. This obviously caused economic losses due to the big weight losses. The fruit won't last long, perishable, not fresh, pale colour, whilst risking of getting infected with fungi or insects.

The problem has triggered a group of students of Universitas Gadjah Mada (UGM) to solve. They are Dimas Sandy Dary Rahmadhanni, Dwi Wiyantanu, M. Soleh Hidayat, M. Robeth Sirojudin, and Reza Adinata, all supervised by Dr. Sri Rahayoe, S.TP, M.P. The students later made the Picos (Pitaya Controlled Storage) tool to store the pitaya fruit under controlled temperature and humidity. It is based on cold storage system.

"In principle, Picos has the capacity to store fruit and vegetables in the optimum condition of

temperature and humidity. This would maintain the quality of the agricultural products for a longer period,” said Dimas on Monday (29/5).

He added the Picos tool integrates the refrigeration and ultrasonic humidifier systems to attain the optimum condition of pitaya. The refrigeration system works by absorbing the heat in the room using a refrigerant. The heat will be circulated into cold air. Ultrasonic humidifier works by breaking down the water particles so these would transform into vapour. The system of Picos is equipped with a control system to control the room temperature and humidity in optimal limit. Such control uses UNO arduino that is incorporated with SHT10 sensor as temperature and humidity sensors.

Picos also educates people on organic pitaya through a sticker attached on the Picos tool. Buyers may learn the history, cultivation, and characteristics of the organic fruit from it. Buyers can also take the fruit from the storage directly as it uses glass cover. Dimas and team hoped that Picos would be the right solution to increase the productivity of pitaya from Indonesia.

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