

## **Processing of Aromatic Rice Using 2-acetyl-1-pyrroline Available in Pandan (*Pandanus amaryllifolius Roxb*) Leaves**

**H. R. D. M. Mayadunna<sup>1</sup>, D. A. N. Dharmasena<sup>1\*</sup>**

*<sup>1</sup>Department of Agricultural Engineering,  
Faculty of Agriculture*

*\*nimal.dharmasena@gmail.com*

Aromatic rice has a high demand and a premium price in the global market. The aromatic volatile chemical compound, 2-acetyl-1-pyrroline (2-AP) is, mainly responsible for the characteristic fragrance in aromatic rice. The aromatic essence 2-AP is found in Pandan leaves (*Pandanus amaryllifolius Roxb*) that are grown in tropical countries and commonly available in Sri Lanka. Fresh Pandan leaf has 10 times higher 2-AP than Basmati rice which contains around 1 ppm of 2-AP. This study was investigated the feasibility of transferring 2-AP available in Pandan leaves to non-aromatic short grain raw rice (BG-360) for value addition. In order to increase the rice grain porosity to facilitate absorption of aroma, rice grains (BG-360) were vacuum dried (without soaking) to about 5% moisture at 70 °C. 2-AP absorption was tested as direct leaf heating after mixing leaf with rice by microwave oven in a sealed chamber and using the ethanol extract of the chemical (2-AP). The microwaved treated rice samples were kept for three weeks for 2-AP absorption at room temperature. The ethanol extract treatment was tested for optimum absorption time to rice. Finally, raw rice, rice subjected to direct heating with leaf and treated with 2-AP extract were compared with premium quality Daawat Rozana Basmathi Rice by examining fragrance characteristics of treated raw and cooked rice using sensory panel. The results revealed that the best treatment for transferring 2-AP from leaf to raw rice is direct microwave heating of vacuum dried raw rice mixed with fresh Pandan leaves at a mass ratio of (leaves : rice) 1:10.

**Key words:** 2-Acetyl-1-pyrroline, Aromatic rice, Grain porosity , Vacuum oven drying