Abstract:

An appropriate postharvest ripening method and the optimum ripening stage for drying mangoes `Nam Dokmai´ and `Kaew´ were aimed at in this study. Mature green mangoes were washed and ripened at 25 ± 2°C and 50-70 % RH by applying two ripening methods based on the use of calcium carbide (CaC2) and 2-chloroethyl phosphonic acid (CEPA, ethephon) beside the control. Ripening was monitored by analysing fruit firmness, flesh color, weight loss, total soluble solids, total acidity, sugar-acid ratio and β-carotene contents. Fruits were washed, peeled, and sliced after 2, 3, and 4 days of ripening prior to the drying process in a tray dryer at 70°C for 8 hours. Dried fruits were investigated with respect to product quality directly after drying and after three months storage. During postharvest ripening of both cultivars, applied concentrations of calcium carbide and CEPA showed weak effects on the chemical parameters. Contrarily, those were strongly influenced by the various ripening stages. According to β-carotene contents and sensory results, the appropriate postharvest ripening stage irrespective of the ripening method was processing to dried mango slices after 2 or 3 days of ripening for both cultivars. However, less acceptable products resulted from mangoes `Kaew´ ripened for 3 days with CaC_2 treatment, due to the significant ($p \leq 0.05$) low score for overall appearance, which was related to brownish color of products.