ABSTRACT

Fruits and vegetables are dried to prolong shelf life, improve availability on off-seasons, minimize packaging and increase satisfaction of consumers. This study aimed to develop dehydrated apple and carrot snacks. Red Delicious (red apple type), Granny Smith (green apple type) and carrots were used. Apples were cut into 0.5 cm thick slices before soaking into 3 different pre-treatment solutions as: 1) 1% ascorbic acid + 0.2% citric acid + humectant, 2) 1% ascorbic acid + 0.05% sodium chloride + humectant, and 3) 1% ascorbic acid + 0.5% calcium chloride + humectant, for 3, 5, and 7 min. The soaked apples were then dried at 50°C for 6-9 h. Simultaneously, carrots were peeled first and then cut into 0.5 cm thick slices. They were blanched in boiling water for 1, 3 and 5 min, of which 5 min's blanching time was the most preferred due to its ability to inactivate enzymes of the carrots. Subsequently, pre-treatment solution of 30% sugar + 0.05% malic acid + humectant for carrots was used before dehydration at 50°C for 4-7 h. Three concentrations as 0.1%, 0.15%, 0.2% of sorbitol and glycerol were used as humectants. According to the Thailand Industry Standards, the required moisture content after drying is less than 12%. The optimum drying time to achieve this moisture content for apples was 9 h and for carrots was 7 h. Sensory evaluation was further tested, and the overall likings were found out. Red apples soaked in solution 2 with 0.15% glycerol achieved the highest overall liking score (5.42 points), green apples soaked in solution 3 with 0.15% glycerol achieved the highest overall liking score (6.08 points), and carrots blanched for 5 minutes with 0.1% glycerol in the soaking solution and dried for 7 h obtained the highest overall liking score (3.95 points).