

Abstract

A study to develop red dragon fruit, *Hylocereus sp.*, bread was conducted to find formula, process, and preference of the product. Some physicochemical properties of red dragon fruit extract included color 10RP 4/11 of purplish red, pH 4.6, and low soluble solid content 7°Brix. Heating the red dragon fruit extract showed that color was stable up to 80°C before it changed to bright red at 90° and 100°C. After 60 minutes fermentation with instant active dry yeast for normal white pan bread, dough containing water and dough containing 25% substitution of red dragon fruit extract provided 109 and 90% expansion, respectively, while 52% expansion was obtained from instant active dry yeast for sweet bun. Bread-maker Severin, Model BM 3983 was used as apparatus to prepare all bread samples using long term program. The amount of red dragon fruit extract was varied from 25, 30, 40, 50, 60, and 70% to substitute water in white pan bread formula. Bread had an increase volume at 30% and reached the highest at 40% substitution. At 50% and above, bread showed a decrease in volume drastically. Crust was thick with color turned to orange pink of red dragon fruit color while crumb lost uniform air cell distribution as more red-dragon fruit was substituted with water. There was no significant difference in the average total scores of bread samples ($p < 0.05$) evaluated by Bread scoring system (Pylar, 1973). Preference test on 30% and 40% substitution of red dragon fruit extract bread samples with 30 test panelists resulted in no significant difference ($p < 0.05$) in all attributes. A flavor profile of bread with 30% substitution demonstrated that the bread had moderate saltiness, sweetness, and sourness scores, ~6.5, strong yeast odor, ~7, typical for fresh bread, and strong red dragon fruit flavor out of 10. Cost of production for bread with 30% substitution was 31 Baht per serving size of 440-gram loaf while 40% substitution would cost 35.43 Baht, 14.3% more than 30% substitution. The 30% substitution of red dragon fruit bread was accepted by 99% from consumer acceptance test with a price of 45 Baht per loaf and benefit 45% of production cost.