

Development of a Functional Butter Incorporated with Red Onion (*Allium cepa*) or Garlic (*Allium sativum*) Powder

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Butter is a versatile, high fat dairy product which can be improved to a functional food with natural antioxidants that can cater the consumers who prefer nutritious foods. Thus, the present study investigated the use of red onion and garlic as natural antioxidants in developing a functional butter. Garlic and red onion powders were prepared by oven drying (60°C for 24h) and incorporated into the butter during working at the ratio of 2%, 4% and 6% (w/w) to prepare treatments. Butter without addition of onion powder was used as the control. The sensory evaluation was done using 30 untrained panelists with 9point hedonic scale. Radical Scavenging Activity (RSA), total phenolic content, soluble sugar content of red onion and garlic powders were evaluated using DPPH method, Folin-ciocalteu method (FC) and phenol sulfuric methods respectively. Water activity of powders and moisture and ash content of butter samples were analyzed. Free fatty acid, peroxide value, microbiology (Yeast and mold, total plate count) parameters were evaluated in 1st, 7th, 14th, 21th and 28th day intervals during refrigerated storage. RSA of red onion powder was significantly higher (87.65±0.45%) compared to that of garlic powder (16.20±0.45%). Garlic 4% (w/w) and red onion 4% (w/w) incorporated butter were selected as the most consumer preferred samples among the treatments. RSA of 4% red onion incorporated butter was significantly higher (89.46±0.20%) compared to that of 4% garlic incorporated butter (60.04±0.20%) at 0th day at refrigerated storage. The control showed significantly lower RSA (38.24±0.23%) among all treatments (P<0.05). Results of the study revealed that functional butter with high RSA can be developed incorporating red onion powder.

Keywords: Antioxidants, DPPH, Functional butter, Red onion, Garlic