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Evaluating physiological properties of oat- chocolate containing natural antioxidants

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Abstract

Being producing and evaluating oat-chocolate were a major goal in this study. There were various steps to make oat-chocolate. First, oat was roasted with an optimum roasting-temperature. Second, discovered the best natural antioxidant to extend storage period and improve quality of goods. Third, developed processing goods and made an evaluation of quality properties. We selected optimum roasting condition of 160°C for 15 min based on the acid value and the sensory characteristics such as color, taste, smell and overall preference of oat flour. As for natural antioxidants, we made use of 3 kinds of antioxidants (cactus, lavender and green tea) and two concentrations (0.5 and 1%). In investigating antioxidants, an acid value was significantly decreased as the antioxidants were added ($p < 0.05$). Nothing was as low in acid value as a chocolate with 1 % lavender flour in 7 days. Findings showed the sensory characteristics of products containing antioxidants such as green tea and cactus, were higher than those of Cont. in 7 days. A product including 0.5% green tea marked the best sensory score among antioxidants. Compared cost among 3 antioxidants, green tea was the cheapest. In the end, 0.5% green tea was selected as an optimal antioxidant to make high-quality oat chocolate. We made an end product by mixing green tea (0.5%) and oat. With respect to Hunter's color L (whiteness), a (redness) and b (yellowness), as green tea added, L and a level showed an increasing tendency. However, an opposition result was expressed in b level. When compared pH value and total acidity, it was statistically identical between Cont. and product with 0.5% green tea (G-0.5). There was different acid value among specimens. The acid value of G-0.5 was lower than that of Cont. up to 7 days, resulting in lower acid value than a ready-made product (D-Co.). When we assessed the sensory characteristics, G-0.5 was higher than other specimens such as Cont. and ready-made products (D-Co. and H-Co.) up to 6 days after manufacture. Put previous findings together, the addition of 0.5% green tea increased an antioxidative effect as well as the sensory acceptability of oat-chocolate.

Key words: Oat, Chocolate, Antioxidants, Sensory evaluation

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