

Quality characteristics of chocolates incorporated with broccoli leaves jellies

ABSTRACT

Chocolate is a popular confectionery worldwide and thus, there is a need to improve the nutritional quality of chocolates. Broccoli leaves which are normally disposed as wastes were turned into the fillings of chocolates to enhance the quality of chocolates. This research aimed to propose the best formulation of chocolate incorporated with broccoli leaves jellies. Six formulations of broccoli leaves jellies (F1: 1.25%, F2: 5.00%, F3: 8.75%, F4: 12.50%, F5: 16.25% and F6: 20.00%) were incorporated into chocolates of fixed formulation. F2, with 5.00% of broccoli leaves was chosen as the best formulation on the basis of sensory evaluation and physiochemical tests which included water activity (a_w) and hardness tests. Subsequently, F2 was compared with the control from the aspects of proximate compositions, melting properties and antioxidant capacity. F2 recorded higher proximate compositions, except for moisture and crude fat content than the control. Higher melting properties, total phenolic and flavonoid contents together with a lower half maximal effective concentration (EC50) were seen in F2 as compared to the control. Thus, the upcycling of broccoli leaves as food ingredients is a feasible one as proven in this study. Overall, we can also expect the valorization of broccoli leaves in the development of other functional food products.