

Characterization of a blackberry snack fortified with Zinc and Folic Acid, aimed at children and pregnant women, developed by Convective Drying processes.

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The blackberry is a fruit rich in vitamins, anthocyanins, and antioxidants, it is a fruit desired for its flavor and aroma, however, due to various factors it has a shelf life of three days. On the other hand, worldwide it is estimated that 4.4% of child deaths are due to zinc deficiency, in Colombia 43.3% of children have zinc (Zn) deficiency. On the other hand, the lack of consumption of Folic Acid (FA) in pregnant women produces in newborn children weakness in the immune system, cognitive deterioration, low IQ. Given the above, the objective of this research was to develop a blackberry snack fortified with Zn and AF, through convective drying processes. The methodology included the proximal characterization of the blackberry according to the AOAC. The addition of Zn and AF was determined based on Resolution 810 of 2021 of the Ministry of Health and Social Protection of Colombia. The evaluation of convective drying was done by means of a DCC with 4 central points, the independent variables were: temperature (55-70)°C and maltodextrin content (20-30) %. The response variables were Humidity, Aqueous Activity, Antioxidant Capacity, content of polyphenols and anthocyanins, AF, Zn, firmness, and Diffusion Coefficient. The moisture, ash and crude fiber content of the blackberries was 84, 0.42 and 2.5 g/100 g, respectively. The diffusion coefficients obtained by Fick's second law varied between $1.85-6.78 \cdot 10^{-10}$ m²/seg. The content of moisture, folic acid and antioxidants of the blackberry dehydrated snack were 8-10%; 3-7.3 (mg/100g); 1059 (μmol TE/g), respectively. Likewise, the firmness of the snack ranged between 8-25N. The sensory parameters of the snack had a rating of 5. In general, it can be concluded that convective drying is an adequate methodology to develop a blackberry snack fortified with Zn and Folic Acid; the snack meets the nutritional requirements for children and pregnant women according to Colombian regulations, in addition to having good textural, proximal, and sensory properties; being the snack an alternative for the feeding of children and women in pregnancy.