REUTILIZATION OF BLUEBERRY SKIN RESIDUES USING A DRYING PROCESS TO OBTAIN A TEA INFUSION WITH HIGH IN VITRO ANTIOXIDANT CAPACITY.

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Normally in the juice industry the fruit's skin is discharged. However, reutilization of all constituents of the fruit is increasing in the world and the idea of a non-residue industry is growing as a core concept in the 21st century. Overall in berries, the skin is rich in polyphenols and blueberries are not the exception. In this direction, the aim of this investigation was to study the drying process of blueberry skin residues (*Vaccinium corymbosum*) derived from food industry to produce a tea infusion with high contents of total polyphenols and antioxidant capacity. For the experimental design, temperature (between 50-70 °C), air velocity (between 1-2 m/s) and time (between 590-770 min) were chosen as independent variables for the process whereas the water content, the total polyphenols and antioxidant capacity were selected as dependent variables in samples. A water content less than 10% was considered for the drying process. All tea infusions were prepared using 3 g of dried skin, adding 200 mL of water at 100 °C for 5 min, then the residue was separated and the infusion was frozen at -20 °C until analysis. The best drying conditions for obtaining the highest levels of polyphenols and antioxidant capacity were 59 °C, 1.9 m/s and 590 min of process which gave 54.82 mg Gallic acid equivalents/L and 705.92 µmol Trolox equivalents/L (for total polyphenols and antioxidant capacity, respectively). Current study shows that is possible to use blueberry skin residues to produce a value-added tea infusion.

Key words: blueberry, residue, infusion, drying process, antioxidant capacity.