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EFFECT OF SOLAR DEHYDRATION ON THE ANTIOXIDANT CAPACITY AND THE CONTENT OF PHENOLIC COMPOUNDS OF BLACKBERRY, *RUBUS FRUTICOSUS* spp.

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The blackberry is a fruit of interest due to its high content of anthocyanins and ellagitannins, as well as other phenolic compounds that contribute to its high antioxidant capacity (AC). The state of Michoacán (Mexico) is currently the world's leading producer and exporter of blackberry, with about 239 thousand tons produced by 2016. However, there is a high problem of waste of fruit that implies a loss of product between 30% and 50% due to causes associated with the sensitivity of fruits and lack of conservation methods. Therefore, dehydration is an option for their preservation. The objective of this study was to evaluate two technologies of solar drying (SD): direct (DSD) and indirect (ISD) and its effect on AC and the content of phenolic compounds (phenols, anthocyanins, flavonoids) of blackberry (*Rubus fruticosus* spp.) dehydrated. The DSD and ISD results were compared with those of the dehydrated samples in stove (SS) at 60°C with forced convection at 1 ms⁻¹. The fresh and dried fruits were evaluated, the samples were liquefied and the seed was separated from the pulp. The analysis of the results shows that in all cases the dehydrated blackberry pulp contains lower concentrations of phenolic compounds and AC than

the fresh sample. However, that total phenol concentrations of ISD and DSD are higher than SS (41.8±2.9, 41.2 ± 4.9 and 35.9±11.9 mg of gallic acid equivalent /g dry solid, respectively). The AC remained constant in all three drying methods (5.5±0.6, 5.8±0.5 and 5.9±0.5 mg ascorbic acid/g dry solids for SC, ISD and DSD, respectively). Flavonoids were higher in ISD than DSD and SC (10.2±1.3, 9.6±0.8 and 9.1±0.4 mg of quercentin/g dry solid, respectively). These findings support the potential properties of dehydrated blackberry as a beneficial food for health.

Biography

Silva Norman Azucena completed her undergraduate studies in Chemical Engineering in 2012, doing research at the Institute of Engineering, UNAM in the Division of Environmental Engineering. She worked as a Process Engineer in projects for the petroleum sector, performing basic and detailed engineering. Currently, she is pursuing her Master's Degree in Sustainability Science at UNAM, with the thesis entitled, "Implementation of solar dehydrators to reduce agricultural loss".

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