Andres Felipe Gonzalez Mora et al., Adv Crop Sci Tech 2018, Volume 6
DOI: 10.4172/2329-8863-C1-005

Design and construction of a dehydrator by instant controlled pressure drop (ICPD) for specialty coffee

Andres Felipe Gonzalez Mora, Adriana Meneses-Suarez, Jose Gamboa-Gamboa, Sebastian Gutierrez-Pacheco and **Alfonso Parra-Coronado**
National University of Colombia, Colombia

The specialty coffee represents 12% above the consumption of coffee in the world. This product is characterized by the flavors given by certain microclimate, besides to achieve the stringent quality control. Therefore, it is necessary to carry out the techniques that optimize the process related to coffee conservation. Nevertheless, the conventional coffee drying does not allow a quickly and uniform process, affecting the grain quality and beverage characteristics. This work presents the design, construction and evaluation of a coffee dehydrator by instant controlled pressure drop (ICPD). The setup is composed by a treatment chamber, vacuum pump, control devices for the pressure drops and an electrical heater to transfer warmth through the coffee mass (1 kg) disposed inside the treatment chamber. To evaluate the process, the drying kinetic of coffee (*Coffea arabica*) was considered. Factorial design 3^2 was adopted, taking as factors the coffee origin (Nariño, Cundinamarca and Sierra Nevada) and the wet processing coffee phases (cherry, mucilaged and parchment coffee). The conception considered that high frequency and major difference of pressure represent major air flow through the treatment chamber, ensuring an improvement in the drying kinetic. The design was made to experimental specialty coffee drying, but the setup could be adapted and scaled to dehydrator for other products.

Biography

Andres Felipe Gonzalez Mora is a Researcher at National University of Colombia. He has knowledge in postharvest and storage of grains and fruits, modeling and simulation of drying process and biosystems control. In addition, he has experience in research projects about storage methods of mango (Mangifera indica).

andfgonzalezmor@unal.edu.co

Notes: