

Physical Properties of Arabica and Robusta Coffee Beans from Temanggung and Lampung

I Kurniasari¹, H Yohanes¹, LK Hartono¹, K Komariyah¹, WE Widodo¹, G Atmaji¹

¹Research Center for Agroindustry - National Research and Innovation Agency, Indonesia

E-mail: inda010@brin.go.id

Abstract. An analysis was conducted to determine the physical properties of green and roasted beans from Temanggung and Lampung. The coffee beans were roasted to a medium roast using a fluidized roasting machine. This work was carried out to characterize the physical properties, such as dimensions, mass, volume, density, geometric mean diameter (GMD), arithmetic mean diameter (AMD), equivalent mean diameter (EMD), frontal surface area (FSA), surface area, sphericity, aspect ratio, shape index, and porosity. This work found that the highest values of bean dimensions, GMD, AMD, EMD, FSA, surface area, and volume were recorded for Robusta roasted beans from Lampung at a moisture content of 1.70%. The highest values of shape index and density were recorded for Arabica green beans from Lampung and Temanggung, and the highest values of aspect ratio and sphericity were recorded for Arabica roasted beans from Lampung. The moisture content for Arabica green beans (Temanggung) and Arabica roasted beans (Lampung) was 6.46% and 2.69%, respectively. Meanwhile, the highest values for mass and porosity were recorded for Robusta green beans from Lampung. In future studies, other engineering properties should be studied to provide comprehensive information on the design parameters involved in the roasting profile of a coffee roaster.

Keywords: physical properties, fluidized, Arabica, Robusta, coffee beans