

Correlation of Avocado Oil Content with the Emissivity Measured from the Skin

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In recent years the avocado industry in Mexico has had a strong growth; only in the state of Michoacan are over 9000 Hass avocado producers with a production of 950,942 tons per year. Although most of the domestic avocado production is destined for fresh consumption, there is a certain amount that is for oil extraction. It is still not easy or cheap to determine the amount of oil contributed by each avocado in order to select the best avocados for oil extraction; so far, not there are automatic techniques capable of determining their oil content based on non-invasive, relatively quick, and non susceptible to human errors measurements. Moreover, infrared thermography has demonstrated its ability for the evaluation and characterization of different systems, from solids to biomaterials, observing that vegetal physiological characteristics are possible to measure with this. In this study we proposed the evaluation of oil content in avocados based on non-invasive and non-destructive measurement using infrared thermography. The evolution of the emissivity of avocado will be analyzed in the mid-infrared range by the characterization of thermal images from its skin. Thus, a correlation between the emissivity and the oil content is discussed as well as the evaluation of avocado maturity process.