

Application and potential of backscattering imaging techniques in agricultural and food processing – a review

ABSTRACT

This review covers the application of backscattering imaging as a non-invasive technique for monitoring the quality of agricultural and food products. The review enumerates and discusses the concepts and various applications of laser light backscattering imaging (LLBI), multispectral laser backscattering imaging (MBI) and hyperspectral laser backscattering imaging (HBI). All the methods make use of laser light which varies in spectrum from visible up to near-infrared to detect changes in the quality of fresh produce. Emphasis is placed on applications which demonstrate promising potential for agricultural and food applications under various conditions. A critical review of the limitations is also given.

Keyword: Diffuse reflectance; Non-invasive; Optical properties; Fruit quality; Scattering