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ROLE OF INFRARED THERMAL IMAGING IN STORED PRODUCTS PROTECTION

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ABSTRACT Thermal imaging is a technique to convert the thermal radiation emitted from an object into a visible image which provides the temperature mapping of the object. Thermal imaging has wide applications in various industries such as aerospace, agriculture, military, civil engineering, building maintenance, medicine and veterinary. Temperature measurement is one of the most important and valuable factors in maintaining and preserving the quality of stored products. Since infrared thermal imaging is a non destructive, non invasive method to determine the surface temperature distribution, it could serve as a valuable tool in stored products protection. Many research studies have been conducted and the possibilities of using infrared thermal imaging on stored products protection have been evaluated. Potential of infrared thermal imaging in stored products protection has been tested through studies such as detection of hot spots in grain silos, detection of insect infestation in grain, identification of different wheat classes, detection of fungal infestation in stored grain, sprout damage detection of grain and maintenance of optimum temperature in storage facilities. The results of various studies and the future of thermal imaging in stored products are discussed in this manuscript.

Keywords: Infrared, Thermal imaging, Temperature, Stored products, Quality.