农产品物理特性的检测与应用研究进展

Advances in measurement and application of physical properties of agricultural products

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中文摘要：

农产品物理特性在测定农产品的物理特征（如：形状、体积、尺寸、密度、颜色、外观）、水果的坚实度、成熟度和品质及估算谷物的损坏程度、种子的品质、完整性和遗传变化等方面起着非常重要的作用。介绍了几种被广泛应用的农产品物理特性：电导率、光学性质、力学性质和热传导性，并分析了它们在测定水果、蔬菜和谷物的湿度、密度、微波介电频率、成熟度、坚实度及其它一些参数中的具体应用，同时还介绍了专家们在这个领域近三十年来的研究成果。

英文摘要：

The physical properties of agricultural products are very important in many aspects, such as to determine some physical characteristics (such as shape, volume, size, density, porosity, color and appearance), fruit firmness, ripeness level and quality, to evaluate mechanical damage in grains, seed quality and integrity, genetic change and others. The present work is a review about some of the most commonly used physical properties of agricultural products such as electrical conductivity, optical properties, mechanical properties and thermal conductivity, which can be used in determining other parameters and properties such as the moisture content, density, microwave dielectric frequencies, ripeness levels, firmness and many other parameters in fruits, vegetables and grains. Many research results in this sector in the last three decades are also highlighted.

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