

新型蔬菜种子水分快速测定仪的研究

New Instrument for Quick Measuring Moisture Content of Vegetable Seeds

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英文关键词: vegetable seeds, quick measurement of moisture content, impedance, electric conductivity bathtub effect

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中文摘要:

水分快速测定是蔬菜种子行业亟待解决的问题。该文在研究蔬菜种子的阻抗—频率特性和阻抗—水分特性的基础上, 发现了蔬菜种子在无线电频域内的导电浴盆效应, 提出了一种新的蔬菜种子水分快速测定方法, 设计了适于蔬菜种子水分快速检测的撮铲式水分测定仪。实际应用表明, 仪器的测量范围5%~20%, 测量误差 $\leq 0.5\%$, 重复性优于0.2%, 可满足蔬菜种子的水分检测要求。

英文摘要:

It is a key technology to measure the moisture content quickly and accurately for vegetable seed industry. The characteristics and relationships between impedance-frequency and impedance-moisture of the vegetable seeds were studied. The electric conductivity bathtub effect was found out throughout the radio frequency range. The paper presented a new method and designed a new instrument to measure moisture content of vegetable seeds. The experimental results showed that the measuring range of the instrument is 5%~20%, the accuracy is higher than 0.5%, and the uniformity is better than 0.2%. It can meet the demands for measuring moisture content of vegetable seeds.

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