粮食收购品质自动评定装置设计与试验 Design and Experiment of Automatic Quality Grading Equipment in Grain Purchase

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关键词： 粮食收购 品质评定 杂质 含水率 容积密度

摘 要： 设计了一种粮食收购品质自动评定装置。采用电容法测量粮食含水率，真空负压法测量容积密度，该装置能够自动检测收购粮食的杂质、含水率和容积密度等重要指标，并对其进行分级。试验结果表明，该装置杂质分离纯净度达99.5%，重复误差不大于0.3%；含水率测量误差在±0.5%以内，重复误差小于0.2%；容积密度测量重复误差小于3 g/L。Automatic, quality-grading equipment was designed for grain purchasing, which could detect and grade grain impurities and moisture using the capacitance measurement method, and bulk density using the vacuum negative pressure method. Experimental results showed that after the separation of impurities, the grain purity was 99.5%, the repeatability error of impurity separation was less than 0.3%, moisture error was within ±0.5%, the repeatability error of moisture was less than 0.2%, and the repeatability error of bulk density was less than 3 g/L.

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