

Title Preparation of reference materials for rice kernels
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Abstract

In order to execute a performance test of electronic moisture meters for rough rice, rice kernels with different moisture contents must be produced to serve as standard reference materials. Standard operational procedures for the preparation of reference material were proposed in this study. Rewetted materials were prepared by mixing grain kernels with water uniformly. Dried materials were produced by drying samples with hot air. After a holding period of 3 days, grains at various locations in the sample containers were sampled at different storage periods. The moisture content of the sample was then measured by the oven method. The homogeneity of the samples was tested by the analysis of variance (ANOVA) technique. The stability of sample moisture was evaluated by a linear regression equation. These results indicated that the variation of moisture content was low. The moisture content had no relationship with the stored period and indicated the uniformity and stability of the reference materials for rice kernels. The variability within a subgroup and between subgroups was monitored by a quality control technique. Results indicated that the variability of moisture content of samples is within acceptable limits. The test of homogeneity and long-term stability by statistical techniques of this study can serve as an evaluation technique for biological reference materials.