RICE MOISTURE TESTING AND ANALYSIS DISCREPANCIES

The rice industry plays a vital role in the global grain marketplace. A key component to harvesting an optimal rice product is obtaining an accurate moisture reading in the field that is comparable to the moisture reading at the elevator. Recent advances in moisture tester technology have improved the analysis of moisture content percentage to aid in determining prime harvest conditions.

IMPORTANCE OF ACCURATE MOISTURE CONTENT

The moisture content in rice is determined using a grain moisture analyzer that derives the percent of water content within the grain. If moisture content is too high, risks include heat, mold development, insect infestation, and discoloration.

RICE PRODUCERS USING UGMA-CERTIFIED INSTRUMENTS

On May 1, 2013, the Grain Inspection, Packers & Stockyard Administration (GIPSA) implemented a new federal standard for testing grain moisture at official check stations, the Universal Grain Moisture Algorithm (UGMA). Along with this new standard, GIPSA approved the use of the new DICKEY-john GAC® 2500-UGMA moisture tester as one of the official UGMA analyzers.

Many elevators have made the choice to upgrade their instruments to the new technology to ensure the most accurate readings.

The United States is a leading producer of rice with two main geographic concentrations: Arkansas and California. The Arkansas region is now in the process of converting from old moisture testers to instruments that utilize the 149 MHz UGMA technology. The California region has yet to start this transformation.

COMPARISON STUDY OF UGMA CERTIFIED VS. NON-UGMA CERTIFIED

Recent comparison testing has uncovered a potential for moisture measurement discrepancy if the elevator’s tester is not a UGMA instrument. The below graph is based on objective, third party testing of over 500 samples of stored rice and graphically portrays the misalignment between the two generations of moisture testers.

READING THE GRAPH

- The “0.00” line is the reference line for GAC® 2500 UGMA, DICKEY-john’s newest moisture tester.
- The graph depicts that the older instrument is more unstable than the GAC® 2500-UGMA.
- The GAC® 2500 delta increases at the higher moisture ranges. This signifies that the GAC® 2100 is underpredicting moisture.
IMPLICATIONS

This technology shift could be significant to the rice industry during the upcoming 2013 harvest season. Loads entered into the official system for inspection will no longer be tested for moisture on the GAC® 2100; it will instead be tested on one of the new moisture testers, such as the DICKEY-john GAC® 2500-UGMA. Moisture readings taken at the elevator could be a different reading when inspected by the California Agri Inspection Services.

Based on our analysis, the potential exists that loads tested using the old technology and then sent for inspection to Cal-Agri could potentially be classified as sample grade. This despite the fact that the load tested at 14% or under on moisture testers with old technology prior to being sent for inspection.

SOLUTION

FGIS has done extensive testing with UGMA instruments in corn, soybeans, and other grains. The results demonstrate that UGMA-certified instruments consistently perform similar to that of the air oven. UGMA-certified instruments, such as the DICKEY-john GAC 2500-UGMA, ensure accuracy and consistency between producer, elevator, mills, and port.
GAC® 2500 GRAIN MOISTURE ANALYZER (UGMA CERTIFIED BY FGIS)

To minimize the potential for moisture discrepancies, rice industry professionals should upgrade to the next generation of moisture testers.

GAC® 2500-UGMA Grain Moisture Analyzer Advantages and Features:

- UGMA certified by the United States Department of Agriculture (USDA)
- Adopted for use by the California Agri Inspection Agency
- Specification tolerances align with moisture testers in use at official check station agencies and export terminals.
- Improves the ability to determine moisture of rice at point of sale minimizing the rebound effect.
- Shorter analysis time for faster sample runs.
- Equipped with NTEP calibrations and DICKEY-john’s GAC® 2500-UGMA calibrations
- Easy to load non-NTEP specialty calibrations available
- Color touch screen display guides users through testing and setup
- Easy-to-use user interface
- Alpha/numeric sample identification with the ability to add an optional extended keyboard or bar code reader via USB
- Error messages display when out-of-limits moisture, grain weight, or grain temperature occur
- Customizable work environment
- Optional password protection
- Storage of 3,000 grain tests
- Large storage to handle complete grain calibration library
- Internal memory capacity to handle future upgrades
- Printing capabilities
- A variety of external communication options

Contact the DICKEY-john Technical Support team at 1-800-637-3302 to learn how the GAC® 2500-UGMA can give you the confidence in your moisture measurements today.