

New Official Moisture Technology Implementation Briefing

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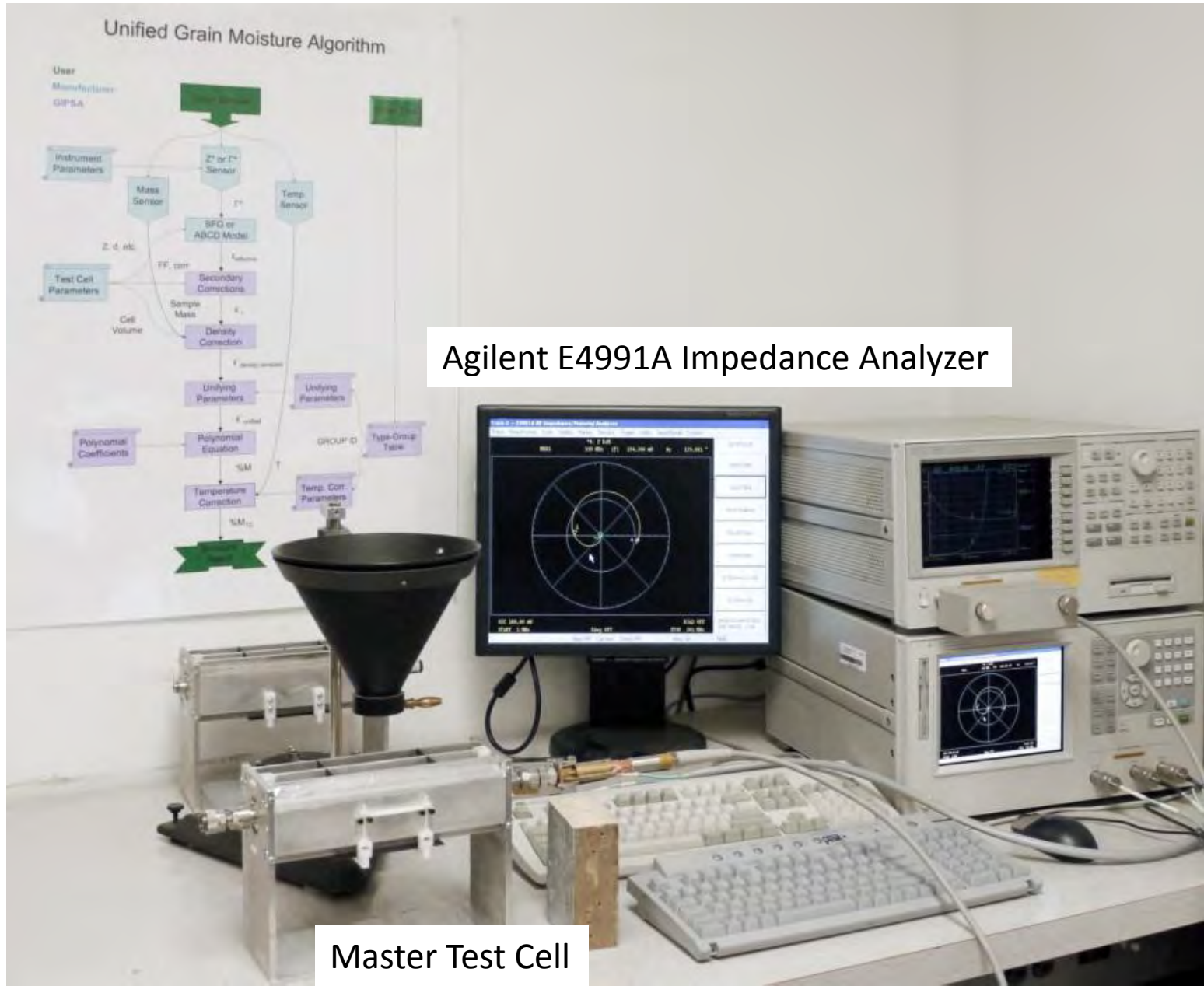
What is UGMA?

- GIPSA's **U**nified **G**rain **M**oisture **A**lgorithm
 - Measure dielectric constant at frequency near 149 MHz
 - Density correction
 - Unifying parameters
 - Single calibration equation
 - Temperature correction
 - Gives accurate moisture results

Why Change to UGMA?

- Better accuracy for all grain types
- Much better accuracy on corn
 - Special test weight correction
- Less affected by “green grain” conditions
- Faster
- More stable calibrations
- Wider temperature ranges
- Allow competition for Official moisture meters

UGMA Master System



GIPSA-Certified UGMA-Compatible Moisture Meters

Dickey-john GAC 2500UGMA



Perten AM 5200-A



GIPSA's Basic Definition of Equivalency

- Same technology
- Very close agreement among types as well as units of a type
- Same calibrations and standardization processes

UGMA-Compatibility Criteria (1)

- NTEP Certification
- Documented & stable production processes
- Measurement frequency
- Standardized test cell design
- Standardized loading method
- Standardized measurements
 - Sample dielectric constant
 - Sample mass
 - Sample temperature

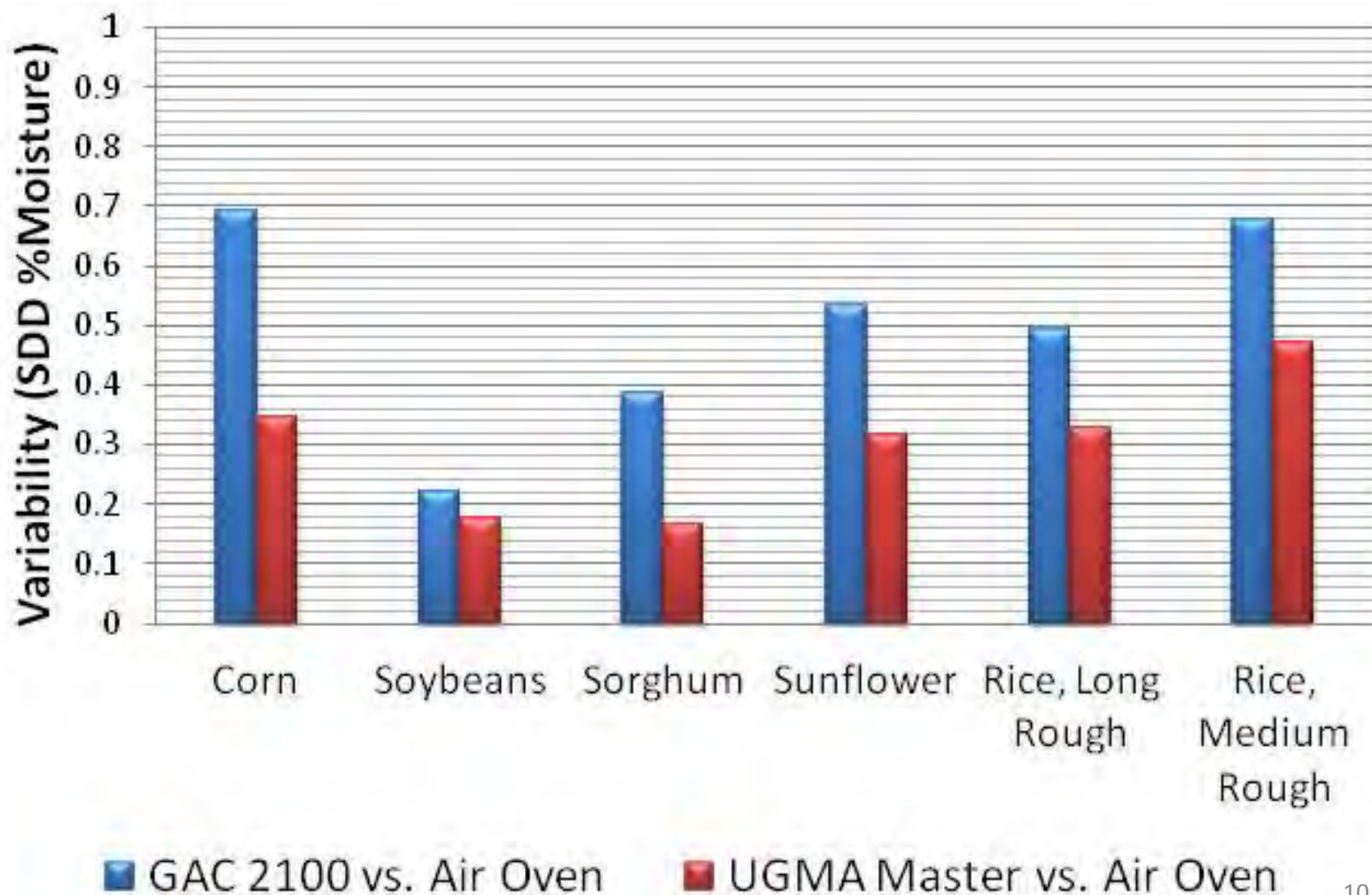
UGMA-Compatibility Criteria (2)

- Tight tolerances specified for individual subsystems as well as moisture results
- Must use specified mathematics
- Units' agreement with FGIS Master system must meet tolerances in FGIS Regulations
 - +/- 0.05% M for Headquarters Standard units
 - +/- 0.15% M for other Official units
 - Mean difference on medium-moisture HRWW

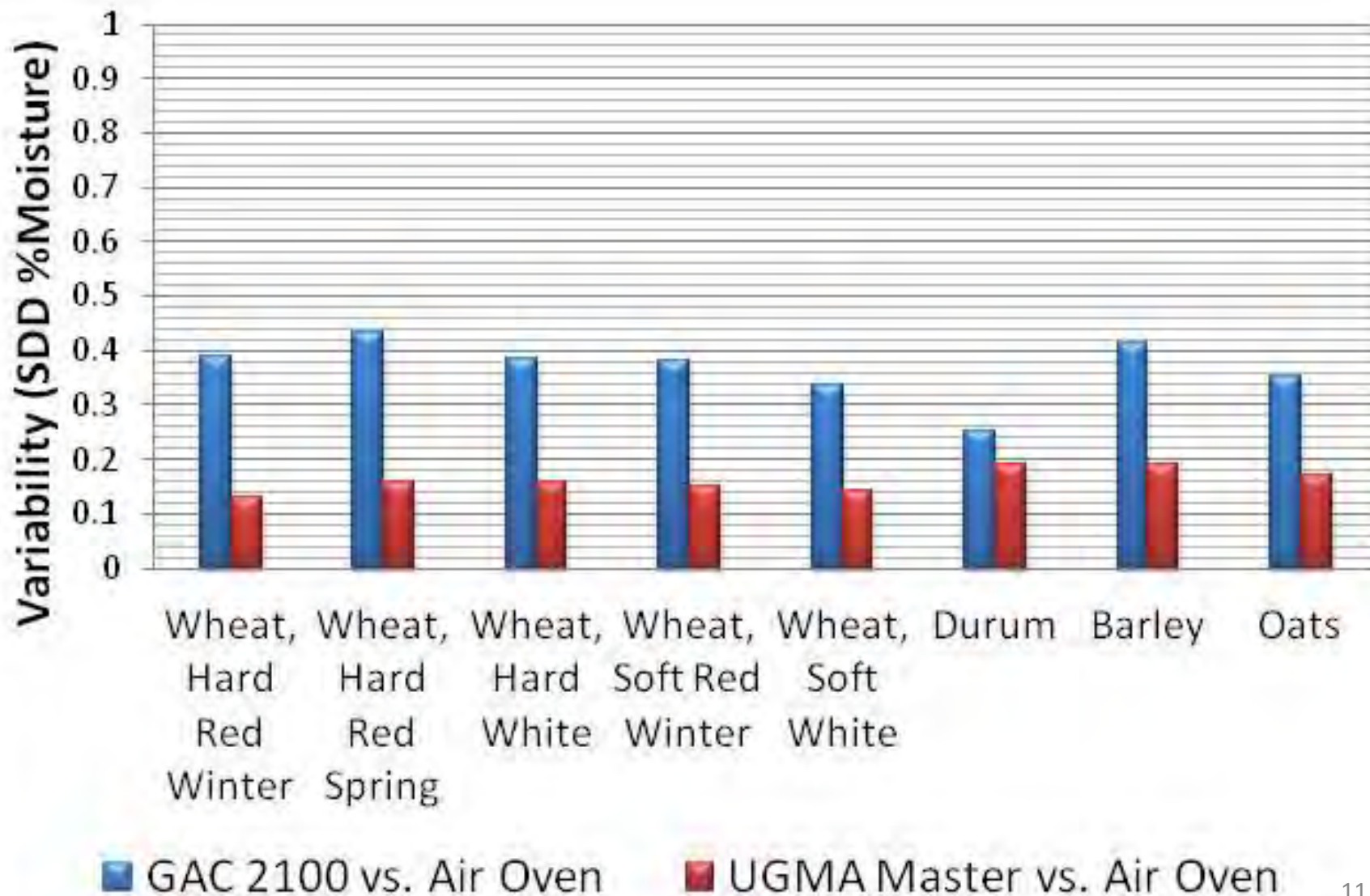
UGMA-Compatibility Criteria (3)

- All UGMA-Compatible models must be able to use the same check testing process.
- A simple check testing process must ensure performance on all grains over full moisture ranges.
- Instruments must provide for efficient means of entering calibrations.
- Instruments must provide standardized output datastream for printing or networking.

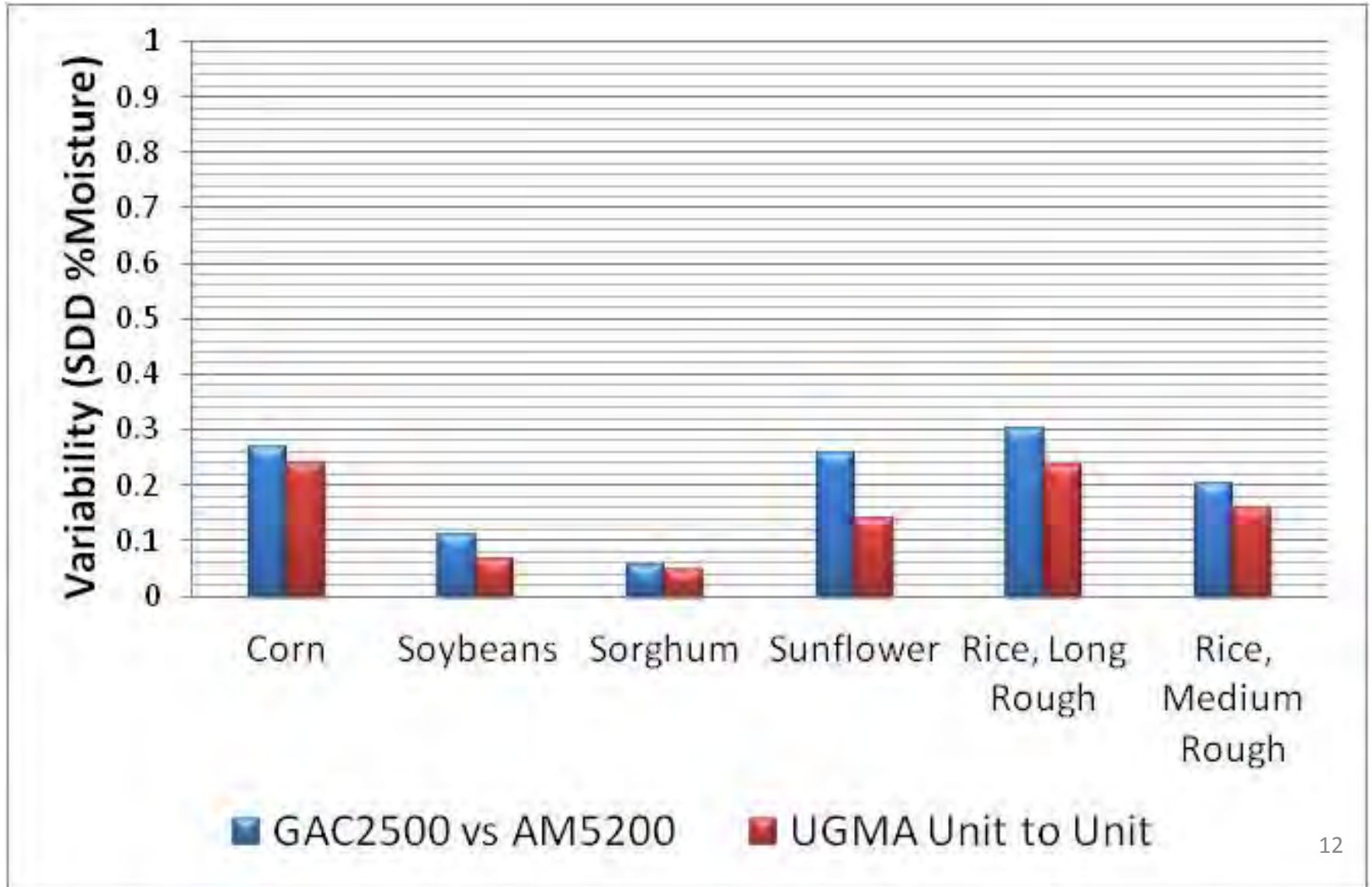
Improved Accuracy of UGMA



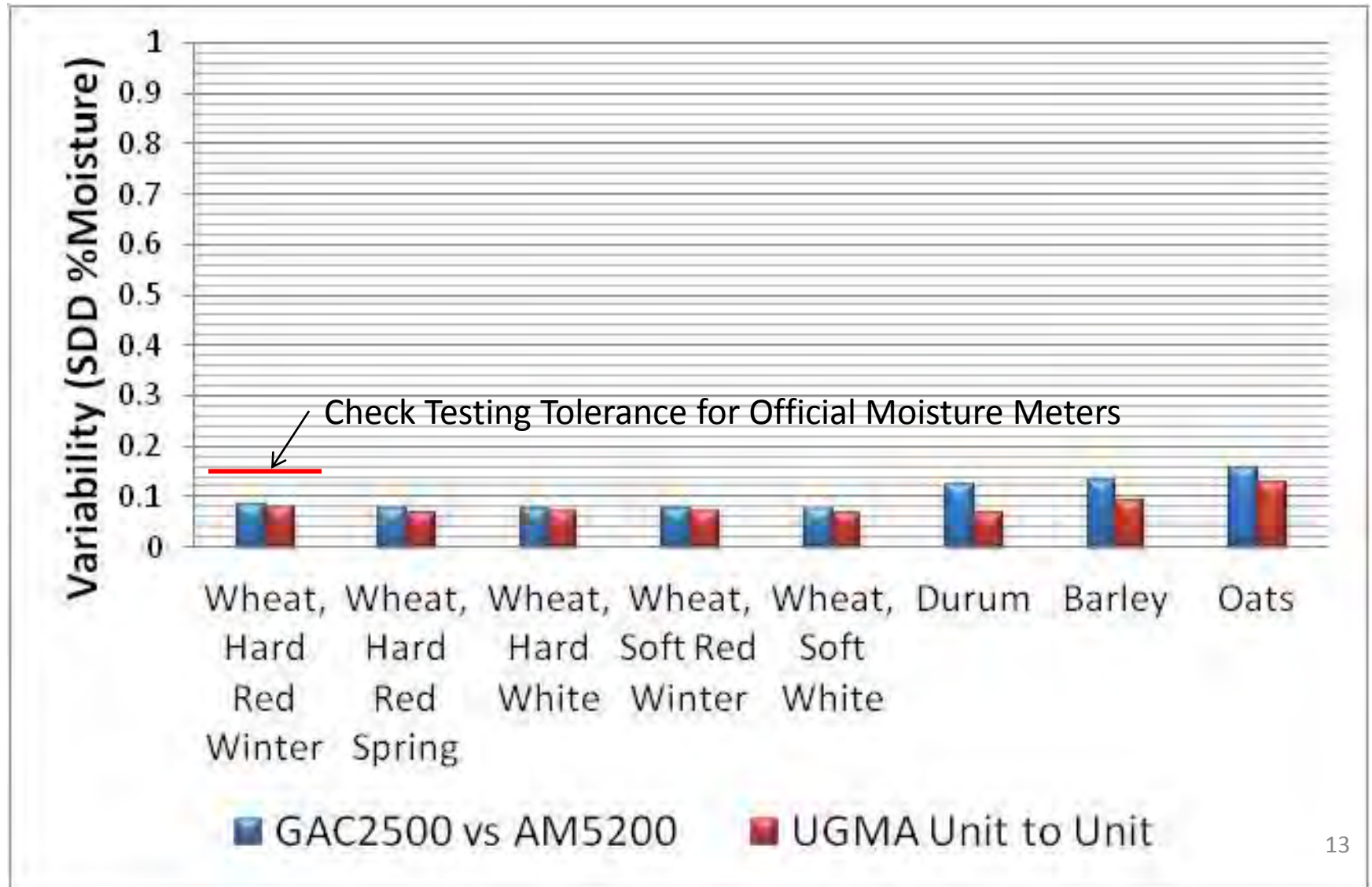
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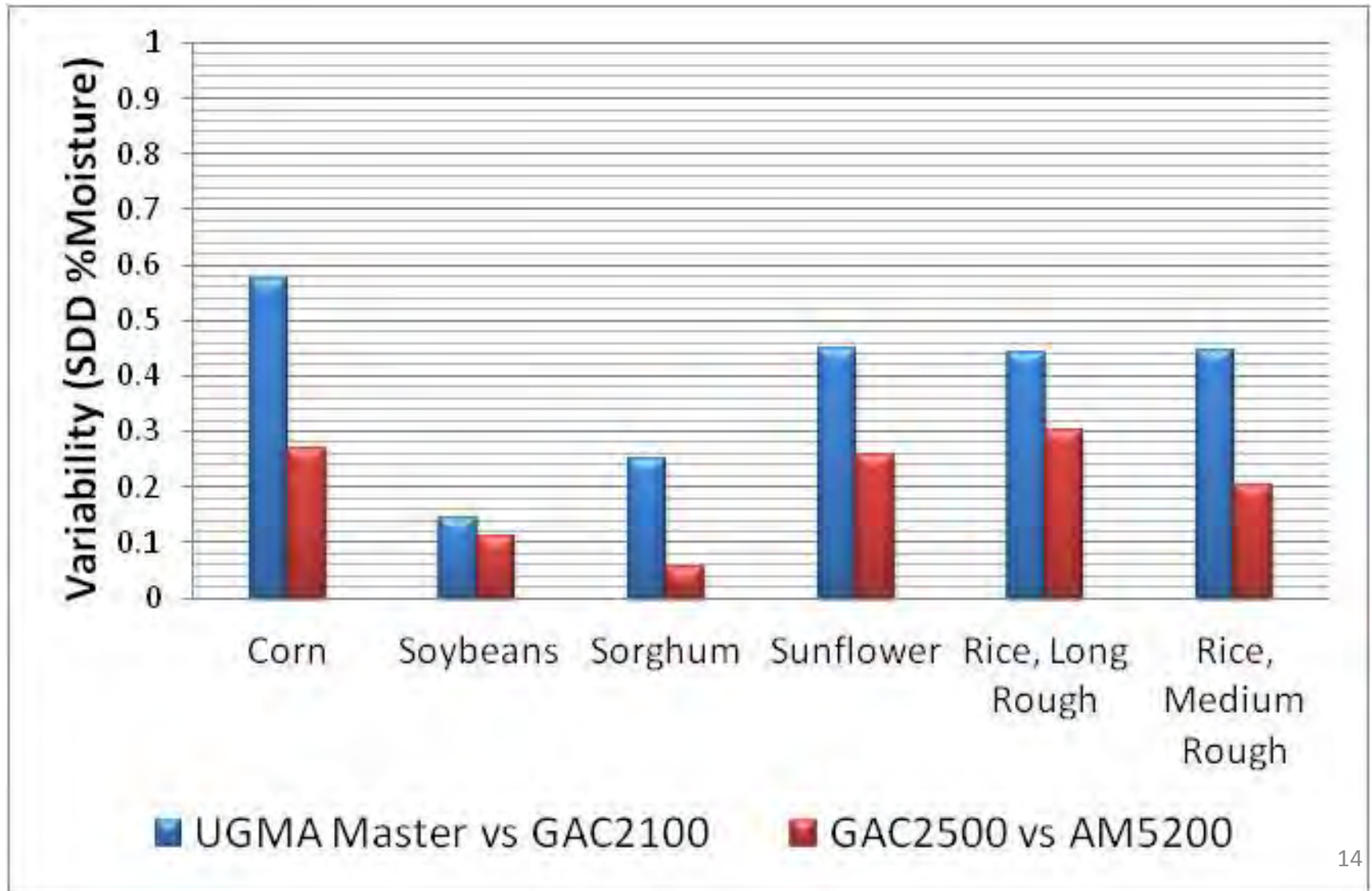
Excellent Agreement Between UGMA Models



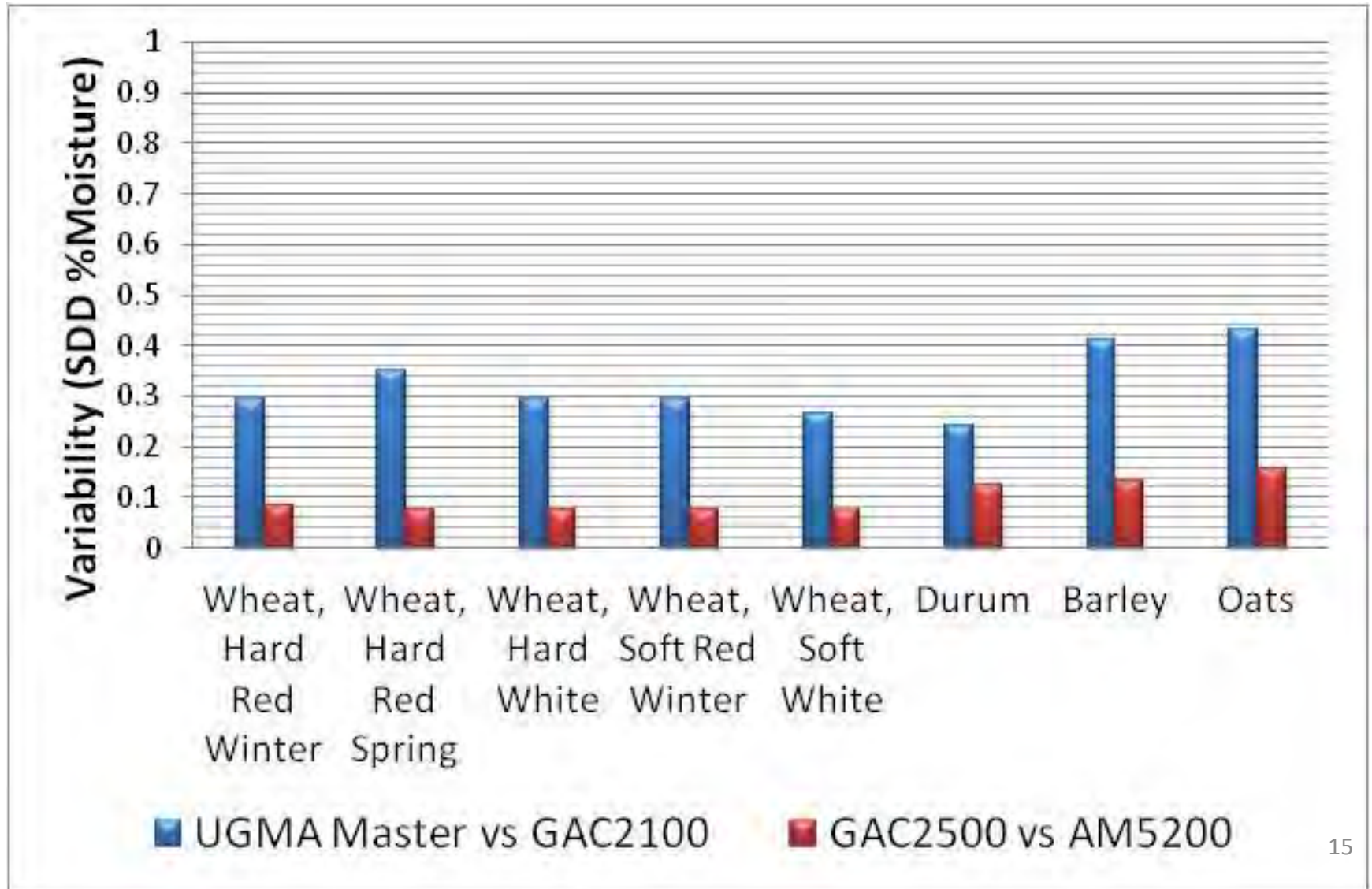
Excellent Agreement Between UGMA Models



Far Better Agreement Than Between Different Technologies



Far Better Agreement Than Between Different Technologies



Summary

- UGMA developed by GIPSA to meet grain industry demands for higher accuracy and consistency and competition among Official moisture meter providers.
- UGMA-Compatible moisture meters have been made equivalent ***by design*** and confirmed equivalent by GIPSA's engineering review.
- GIPSA, Official agencies, and grain handlers can confidently use all GIPSA-Certified UGMA-Compatible moisture meter models interchangeably.

For much more information, follow the GIPSA
web page on UGMA moisture meter
implementation:

<http://www.gipsa.usda.gov/fgis/equipment.html>

A large, glossy blue water droplet is the central focus of the image. The droplet is highly reflective, showing highlights and shadows that give it a three-dimensional appearance. Overlaid on the droplet is the text 'UJGIMIA' in a bold, black, serif font. The letters are thick and have a slight shadow, making them stand out against the blue background of the droplet. The overall composition is clean and minimalist, set against a plain white background.

UJGIMIA