

GIPSA’s Implementation of UGMA-Compatible Moisture Meters – Frequently Asked Questions

Updated text

Q1: Why did GIPSA accelerate its planned implementation date by a year?

A: Through its research, GIPSA identified significant differences in moisture readings for corn that indicated that the GAC 2100, the Official moisture meter, was significantly less accurate for corn at high and low test weights than the commercially available meters based on UGMA technology. GIPSA conducted tests, analyzed the differences, and reported its findings to the [Grain Inspection Advisory Committee](#) at its December, 2011 meeting.

Specifically, GIPSA reported ([December 6-7, 2011 Meeting Minutes, Grain Inspection Advisory Committee](#)) it had found that the GAC 2100 moisture results can differ significantly from results achieved through UGMA-based moisture meter technology on individual samples. Although variations occur within the test weight ranges below, in general, the GAC 2100 will read about 0.2% moisture higher or lower than the UGMA-based instruments for each lb/bu above or below 57 lb/bu, respectively. The chart below shows the potential difference in moisture readings between the two technologies within test weight ranges for the 2009, 2010 and 2011 corn crop:

Corn Test Weight Range	% of 2009 Total	% of 2010 Total	% of 2011 Total	Potential Difference between GAC 2100 and UGMA-based Moisture Reading
<=52	0	0.04	0	-1
52-53	1.87	2.13	0	-0.8
53-54	5.21	8.69	0.05	-0.6
54-55	9.61	30.89	1.96	-0.4
55-56	11.53	23.09	9.29	-0.2
56-57	29.88	20.9	30.85	0
57-58	34.1	11.22	47.18	0
58-59	6.14	3.04	8.42	0.2
59-60	1.19	0	2.15	0.4
60-61	0.47	0	0.1	0.6
61-62	0	0	0	0.8

Although the effects are very small for the vast majority of U.S. corn, some market participants may experience significant discrepancies between the moisture results for corn obtained from UGMA-based instruments and from Official inspection results obtained with the GAC 2100. GIPSA did not find moisture measurements for other grains using either the GAC 2100 or the UGMA-based technology to be so significantly affected by changes in test weight. However, GIPSA and the Advisory Committee were concerned about the potential for confusion within the marketplace as a result of different readings from different types of moisture meters, and the Advisory Committee adopted a resolution recommending that GIPSA implement “. . .the 149 MHZ technology for moisture measurement in August 2012 for fall harvest grains.” GIPSA

accepted the [Advisory Committee's Resolution](#) and developed an implementation strategy accordingly.

Q2: Did GIPSA seek input from external stakeholders during development of the UGMA-Compatible moisture meters?

A: Yes. GIPSA sought input from external stakeholders throughout all phases of the UGMA development process. GIPSA partnered with USDA's Agricultural Research Service during the initial developmental stages of the UGMA. GIPSA has worked closely with all interested manufacturers in developing commercially viable instruments. GIPSA kept the Advisory Committee apprised of its progress. GIPSA selected the implementation periods to coincide with traditional periods for when such transitions take place, and with periods when grain stocks are expected to be at their lowest point. GIPSA sought input from trade associations associated with the earliest implementation date, given that it was accelerated from the prior year. Commodity groups have expressed no concerns about the accelerated implementation date.

Q3: What are the differences between the two UGMA-Compatible moisture meters results?

A: UGMA-Compatible moisture meters are required to measure the same physical grain parameters to a very high level of accuracy, so the different meters can use the same mathematical calibrations and provide equivalent moisture results for all grain types at all moisture levels. The agreement between instruments is excellent – not only on the average but on individual samples. It would be impossible to achieve this consistency among instrument models that used different measurement technologies. GIPSA established [UGMA Criteria](#) that each UGMA-Compatible moisture meter must meet in order to be certified as UGMA-Compatible. There are several criteria that the meters must meet in order to ensure the results achieved are equivalent, but a key criterion is that the variability in results among different meter models must be smaller than the variability between the individual moisture meter model and the air oven reference method, which is the standard reference method.

Q4: Are the UGMA-Compatible moisture meters more accurate than the current Official moisture meter?

A: Yes. Extensive tests by GIPSA have shown that the UGMA-Compatible moisture meters are substantially more closely aligned with the standard reference, which is the air oven.

Q5: Does the accelerated implementation schedule compromise the accuracy of the UGMA-Compatible moisture meters?

No. The UGMA-Compatible moisture meters were certified as UGMA-Compatible by GIPSA after a rigorous review of their compliance with the [UGMA Criteria](#) established by GIPSA. Both UGMA-Compatible moisture meters met the criteria.

Q6: When will the UGMA-Compatible moisture meters be required for use within the Official system?

A: GIPSA plans to implement the UGMA-Compatible moisture meters according to the following schedule; however, for some of the minor commodities such as some varieties of dry beans or some minor grains like triticale, it can be difficult to obtain suitable samples to validate Official calibrations. Until GIPSA is able to acquire suitable samples, the GAC 2100 will be retained as the Official moisture meter for the affected commodities. GIPSA plans to seek the assistance of the grain trade in finding the necessary samples to expedite the transition.

UGMA-Compatible Moisture Meters – Commodity Implementation Schedule Summary	
GIPSA plans to convert to new UGMA-Compatible Moisture Meters for Official Inspection Services using the following schedule*:	
September 1, 2012	May 1, 2013
Corn	Barley
Sorghum	Oats
Soybeans	Wheat
Sunflower Seed – Oil/Confectionary	All Beans
	Flaxseed
	Mustard Seed
	Lentils
	Peas
	Popcorn
	Rye
	Safflower
	All Rice
	Rapeseed
	Canola
	Triticale
<i>*Updated 6/05/2012 All Rice, Beans and Lentils realigned to 2nd Implementation Phase</i>	
<u>Detailed Implementation Schedule</u>	

Q7: Will there be a period of time when there will be more than one Official moisture meter technology used within the Official inspection system?

A: Yes. While the new UGMA-Compatible moisture meters are being implemented, there will actually be two Official moisture meter technologies used within the Official inspection system. However, there will only be one Official moisture meter technology for each commodity. The GAC 2100 will remain as the Official moisture meter for some commodities while the UGMA-Compatible moisture meters are implemented for others. The GAC 2100 will continue as an Official moisture meter until the transition is complete for all commodities subject to Official inspection, in accordance with the schedule listed above. At that point, the GAC 2100 will no longer be an official moisture meter.

Q8: What is GIPSA doing to mitigate the impact that an earlier than expected implementation date may cause Official Service Providers?

A: GIPSA has leased machines for use by Official Service Providers who wish to participate in a lease program for the first year of the UGMA-Compatible moisture meters' use. The leased machines are expected to be delivered on or about July 15, 2012.

Q9: Does GIPSA have any information that it can share comparing performance, accuracy, reliability and pros/cons of each machine that have been officially approved as UGMA-Compatible moisture meters?

A: GIPSA has subjected both of the instruments to laboratory testing and extensive engineering reviews to establish their suitability for use in the Official system and to determine that they will be able to provide accurate and consistent moisture results. The details of these engineering reviews are proprietary information that cannot be divulged. The [UGMA Criteria](#) provides considerable information on the level of performance and reliability demanded of UGMA-Compatible instruments. See also the [New Official Moisture Meter Technology Briefing](#) for information regarding the performance of the two UGMA-Compatible moisture meters.

Q10: Will GIPSA continue to maintain calibrations for the GAC 2100?

A: Calibrations for the GAC 2100 will continue to be updated each May and August. GIPSA will maintain calibrations for the GAC 2100 for the grains, rice and graded commodities (commodities) for which it is used as the Official moisture meter until it is no longer the Official moisture meter for that commodity. At that point, responsibility for maintaining calibrations will revert to the manufacturer of the GAC2100, DICKEY-john, and as with any other moisture meter certified by the National Council on Weights and Measures' National Type Evaluation Program (NTEP).

Q11: Will GIPSA provide calibrations for the new UGMA-Compatible moisture meters?

A: Yes. The UGMA-Compatible moisture meters will be shipped to the appropriate service point with NTEP and GIPSA calibrations already loaded/installed. No calibrations, including those for commodities for which the UGMA-Compatible moisture are not yet pertinent, i.e. summer harvested commodities, need be removed. GIPSA will develop and provide updated calibrations as necessary, as we have done for previous Official moisture meters.

Q12: Can the UGMA-Compatible moisture meter be used to determine test weight within the Official inspection system?

A: No. Although both UGMA-Compatible moisture meters are able to measure test weight, they are not currently approved as Official equipment for that purpose. GIPSA is currently studying the potential for using UGMA-Compatible moisture meters as Official equipment for measuring test weight, and will report its findings to the Grain Inspection Advisory Committee.

Q13: Are the UGMA-Compatible moisture meters certified by the National Conference on Weights and Measures' National Type Evaluation Program (NTEP)?

A: Yes, both the Dickey-john GAC 2500UGMA and the Perten AM 5200-A are NTEP-certified.

Q14: Will every elevator need to convert to using a UGMA-Compatible moisture meter?

A: No. Only Official Service Providers who provide Official inspection services will be required to convert to a new Official moisture meter. It is likely that many elevators will choose to obtain a UGMA-Compatible moisture meter, but it will be at their own discretion.

Q15: Which of the two UGMA-Compatible moisture meters is GIPSA going to use?

A: GIPSA purchased a total of 105 UGMA-Compatible moisture meters for its use. GIPSA purchased 30 of each of the two types of the UGMA-Compatible moisture meters, and then purchased the remaining forty five instruments per contract specifications. Both of the UGMA-Compatible moisture meters will be used throughout GIPSA's field offices and inspection points.

Q16: When will GIPSA have the UGMA-Compatible moisture meters?

A: GIPSA inspection locations have received all UGMA-Compatible moisture meters needed for the September 1, 2012 implementation.

Q17: Will each Official Service Providers be required to have the same UGMA-Compatible moisture meters as that used by the GIPSA Field Office that will be supervising their work?

A: No. The two UGMA-Compatible moisture machine models provide equivalent results so there is no reason for an Official Service Provider to have the same UGMA-Compatible moisture meters as the GIPSA Field Office that is performing supervision.

Q18: Will Appeals and Board of Appeals and Review (BAR) Appeals moisture analysis be done on the same UGMA-Compatible moisture meter as the original inspection results under appeal?

A: Not necessarily. The two UGMA-Compatible moisture machine meters provide equivalent results so there is no reason for an appeal to be performed on the same model as that used for the original inspection. BAR Appeals will be performed interchangeably on the two different UGMA-Compatible models.

Q19: Will the GIPSA Moisture Handbook and Approved Equipment Lists be updated to include the two UGMA-Compatible moisture meters?

Yes. The [Approved Equipment List](#) has been updated to include the two UGMA-Compatible moisture meters, the Perten AM 5200-A and the DICKEY-john GAC2500UGMA. The GAC 2100 also remains on the Approved Equipment List and will remain so until it is no longer used as the Official moisture meter for any commodity. GIPSA will update the Moisture Handbook

prior to September 1, 2012.

Q20: Are Delegated/Designated State Agencies required to use UGMA-Compatible moisture meters?

The twelve State inspection agencies that provide Official inspection services on behalf of GIPSA will be required to use the new UGMA-Compatible moisture meters. These States are Alabama, South Carolina, Virginia, Washington, Georgia, Louisiana, Maryland, Missouri, Montana, North Carolina, Utah and Wisconsin.

Q21: Will warehouses licensed under the Warehouse Act of 1916 be required to use UGMA-Compatible moisture meters?

A: No. Warehouses licensed under the United States Warehouse Act of 1916 will not be required to convert to the new moisture meter. According to the Farm Service Agency, in the Licensing Agreement for Grain and Rice Warehouse Operators the warehouse operator agrees to “equip the warehouse with grading and quality-evaluation equipment necessary to determine the kind, grade, and quality of each class, subclass, and specialty grain received, handled, or accepted for storage; ensure that all grading and quality-evaluation equipment is inspected and certified annually by an applicable regulatory or independent authority.” Moisture is not a grade determining factor but is only related to storability of grain. As a result, the warehouse operators licensed under the United States Warehouse Act of 1916 will not be required to convert to the new moisture meter.

Q22: Will GIPSA’s decision to adopt UGMA-Compatible moisture meters affect the States’ regulations regarding moisture meters?

No. The designation of Official moisture meters applies to moisture meters used within the Official inspection system. Any Official service provider, including any States who are Official Service Providers, will be required to transition to the new moisture meters in accordance with the schedule listed above. Each State regulates the commercially used moisture meters within its jurisdiction and may require NTEP-Certification, but not Official approval. State jurisdiction of moisture meters does not extend to those moisture meters used exclusively for Official inspection.

Q23: Will other UGMA-Compatible moisture meters be approved in the future in addition to the DICKEY-john GAC2500UGMA and Perten AM-5200-A?

A: Probably. GIPSA has publically shared the [UGMA Criteria](#) and the [UGMA Recipe Book](#), as well as much of the GIPSA’s research information expressly for the purpose of encouraging and assisting manufacturers to develop UGMA-Compatible instruments that could be used in the Official system. GIPSA plans to continue to share information and assist manufacturers, while rigorously protecting manufacturers’ proprietary information, to develop additional UGMA-Compatible moisture meter models. However, at the current time, only the DICKEY-john GAC2500UGMA and Perten AM-5200-A are certified by GIPSA as UGMA-Compatible.

Q24: What will happen if GIPSA is unable to provide the necessary calibrations and

complete checktesting by September 2012?

A: GIPSA has provided official calibrations, checktesting procedures, and checktesting samples sufficient to fully implement the UGMA meters on September 1, 2012. Samples of corn, soybeans, sunflower seed (oil and confectionary types), and sorghum may not be Officially certified for moisture using the GAC 2100 after August 31, 2012.

Q25: How will GIPSA ensure that commercial users will be authorized to use Official calibrations for commercial purposes?

A: GIPSA is coordinating with the National Conference on Weights and Measures' National Type Evaluation Program (NTEP) to minimize the discrepancies between the implementation dates of Official calibrations and NTEP calibrations for commercial use. Currently, NTEP allows for two calibration implementation dates within a year—typically May 1 and August 1. These implementation dates generally coincide with the lowest grain stocks, and provide sufficient time for the previous year's data to be analyzed for updating calibrations - while minimizing the number of times that each moisture meter's calibrations must be updated each year.

Q26: Why is Millet not listed on the implementation schedule?

A: Moisture determination for Millet was removed as a factor when [Program Notice 9180.72, Inspection of Millet Seed](#) was last revised (6-12-2009), thus it is not on the implementation schedule. Users should contact the instrument manufacturers to obtain calibrations for commodities, such as millet, that do not have official moisture calibrations assigned.

Q27: Why did the Detailed Commodity Implementation Schedule change?

A: GIPSA has coordinated with several commodity groups regarding the proposed implementation schedule for the UGMA-Compatible moisture meters, and has modified its schedule to accommodate their preferences. GIPSA believes that the schedule currently posted will be the final schedule.

Q28: When did checktesting commence for UGMA-Compatible Moisture Meters within the Official system?

A: Checktesting samples and instructions were sent to Official Service Providers beginning the week of July 23, 2012. Checktesting instructions are posted on the [FGIS Official Service Provider website](#). At AAGIWA's suggestion, a UGMA logo sticker accompanies each checktesting sample, and can be affixed to each machine to denote that the initial checktesting has been completed successfully. Affixing the sticker is not required and does NOT substitute or remove the requirement that checktesting be documented in the UGMA-Compatible moisture meter log.

Q29: When must checktesting of UGMA-Compatible Moisture Meters be completed?

A: Checktesting of instruments to be used for official tests of corn, soybeans, sorghum, or

sunflower seed must be completed before September 1, 2012. Checktesting of instruments to be used for official tests of commodities other than corn, soybeans, sorghum or sunflower seed must be completed before May 1, 2013 but can begin upon receipt of checktesting samples and instructions.

Q30: Will ECT be used to record checktesting results for the UGMA-Compatible Moisture Meters?

A: ECT will not be used to record the checktesting results for the UGMA-Compatible moisture meters during the initial checktesting cycle, but will be used to validate the Standard Average Moisture Result. Official Service Providers will be provided an Excel form as part of the checktesting instructions, and will need to access ECT to obtain the Standard Average Moisture to confirm the checktesting results. The completed form must be sent to GIPSA, who will document that the checktesting has occurred, and return the form to the OSP for retention.

ECT will be reprogrammed to record checktesting results for the UGMA-Compatible moisture meters as soon as possible.

Q31: Will each moisture meter, including the UGMA-Compatible moisture meters, be required to have a log?

A: Yes, the introduction of UGMA-Compatible moisture meters does not negate the requirements currently outlined in Chapter 3 of the current Moisture Handbook for the GAC2100. The requirement for a moisture meter log will be extended to the UGMA-Compatible moisture meters as well.

Q32: Will FGIS waive the requirement for the Fall 2012 checktest for GAC2100?

A: Yes, FGIS has waived the moisture checktest portion of GAC2100 checktest for the Fall 2012 period. A program notice announcing this waiver will be issued shortly.

Q33: When will the Moisture Handbook be available?

A: FGIS will issue the updated Moisture Handbook prior to September 1, 2012. The updated Moisture Handbook will be effective on September 1, 2012.

Q34: What moisture meters can be used for what grains for Official Commercial Inspection Service (OCIS) for moisture and test weight?

A: See [Directive 9180.55 Section 5.b\(2\)](#) regarding OCIS. Any meter that is legal for trade within the State can be used for moisture and/or test weight under OCIS—provided that a specific OCIS agreement including that equipment has been approved.

Q35: Must the default passwords loaded onto the UGMA-Compatible moisture meters be changed prior to use?

The UGMA-Compatible moisture meter units are shipped with default passwords to access

administrative functions. The default passwords are provided and explained in the respective operator manuals for each instrument. There is no need to use a password to access normal operational functions for either instrument. The password may be changed to limit operators from accessing administrative functions, but doing so is not required nor is it prohibited by FGIS. If a password is set, it can be reset, so there should not be a problem of locking up an instrument.

Q36: Who can I contact to find out more information about UGMA-Compatible Moisture Meters?

GIPSA has established a dedicated e-mail account for questions on the UGMA-Compatible moisture meters, which is located at the bottom of the Equipment Page and is located here: UGMA-QA@usda.gov.

Additional information about the two UGMA-Compatible moisture meters can be found at: www.gac-land.com for the DICKEY-john GAC 2500UGMA and at: <http://www.perten.com/> for the Perten AM 5200-A.

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