

Rice Inspection Equipment and Condensation Study



GRAIN INSPECTION ADVISORY COMMITTEE MEETING OCTOBER 27, 2015

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GIAC Resolution



July 2014 Resolution -

“The Advisory Committee recommends that GIPSA continue its work to utilize technology enhancements to advance efficiencies for grain inspections. For example, GIPSA should continue its work with the USDA Rice Studio (rice scanner project) by connecting with industry stakeholders for feasibility of using the technology for further evaluations: including rice brokens sizing, color, and potential uses with other grains.”



Update on Rice Imaging Issue



- Visual Inspection for Milling Yield and % Total Broken Kernels (TBK)
 - Foss Grain Check used in California for official inspections
 - Foss no longer supports the Grain Check
 - USDA Rice Studio issues with the sample presentation
 - Commercially available instruments appear to solve sample presentation issue
 - Apply knowledge from USDA Rice Studio and Grain Check approval to evaluate commercially available imaging instruments



Rice Milling Project



- US Rice Producers requested that GIPSA evaluate the ZaccariaUSA mill
 - US Rice Producers believe the current approved equipment may underestimate milling yield
 - GIPSA agreed to evaluate the ZaccariaUSA sheller and mill
 - Objective to assess whether ZaccariaUSA mill is equivalent to current approved equipment



Regulations under the Agricultural Marketing Act



- 7 CFR §868.206 - “...milling yield shall be determined by the use of an approved device.”
 - Grainman Miller No. 65 current approved mill in use for official inspections
- 7 CFR §868.205 - The milling yield is determined on a “well-milled or better” degree of milling
- FGIS instructions state that Official inspection must be performed on 1000 grams of rough rice



Proposed criteria for determining equivalence for a laboratory rice mill



- The amount of rough rice used to determine all applicable quality factors is 1000 grams
 - Initial work portion size for the Zaccaria mill is 500 grams as opposed to 1000 grams required for Official inspection
- Ease of use (unambiguous settings)
- Time to process representative work portion (same as or faster than current approved mill)
- Results equivalent to the Grainman Miller No. 65 for percent total broken kernels and milling yield



Outstanding Issues



- Changes in rice milling technology and processes for Official inspection requires agreement of entire rice industry, including commercial rice millers
- Extent to which laboratory mills reflect milling yields obtained by commercial mills
- Current milling procedures may not recognize potential intrinsic difference in milling yields due to introduction of hybrids



Previous Condensation Studies



- Concerns about effects on moisture and test weight due to condensation
- Previous Studies
 - 1997 – 1998 Laboratory Study in Kansas City
 - 1998 Elevator Study in New Orleans
 - 2014 Elevator Study in New Orleans



November 2014 GIAC Presentation Summary



- 2014 Study in New Orleans confirmed 1998 laboratory results
- Unlikely that condensation responsible for large moisture and test weight changes
- Possible future work should focus on grain delivery system



New Condensation Effects Study



November 2014 Resolution –

“The Advisory Committee recommends that FGIS conducts a comprehensive investigation of moisture and test weight fluctuations that may result from condensation that may occur at two specific points in the grain marketing process – the first one from point of origin to point of destination and the second is from point of destination to point of shipping.”



US Grain Standards Act and Regulations



- **USGSA §74. (b) (2) and §75. (i)**
 - Defines primary objective of US standards is to certify the quality of grain as accurately as practicable
 - Defines official inspection to determine and certify the kind, class, quality or condition of grain
- **Regulations §800.81 (a) and §800.81 (b)**
 - Samples for official inspection are representative of the grain in the lot and protected from manipulation or improper handling
 - Representative sample is obtained and handled per instructions, otherwise it may be considered as a submitted sample



2015 Elevator Study Results – New Orleans



- Average changes in moisture and test weight due to condensation
 - between sampler and inspection lab

Grain	Average Moisture (%)	Min	Max	Average Test Weight (lb/bu)	Min	Max
Corn	0.21	-0.10	0.52	-0.66	-1.28	0.16
Wheat (SRW)	0.21	0.12	0.27	-0.41	-0.61	-0.11

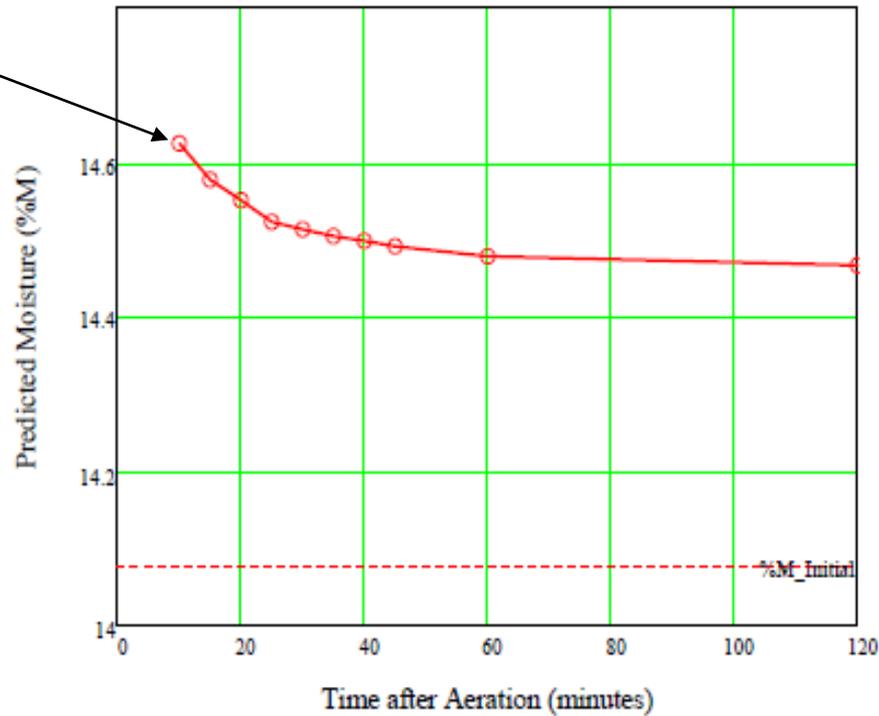


Soft Red Winter Wheat Moisture



Moisture Rebound after Condensing Aeration

Moisture after exposure to condensation conditions



Condensation Study Summary



- Changes in moisture and test weight may occur when condensation conditions are present
- 2015 study confirms 30 minute wait will mitigate some of the impact of condensation on moisture results
- FGIS will formalize current New Orleans Field Office procedures for use at the request of the applicant when condensation conditions are present



Questions?

