

Summary of Discussion and Evaluation Results

This is a summary of the outcomes and suggestions submitted by the four primary chairpersons based on the discussion at the Workshop on Metrology of Agricultural Products and Foods. This report also includes a summary of evaluation results submitted by the participants.

1. Summary of Outcomes and Suggestions

1.1. Summary of Topic 1: Agricultural Quality Measurements

- This is the survey result from the Asia Pacific Legal Metrology Forum (APLMF) economies to obtain specific details about requirements for particular quality measurement with emphasis of an important issue on the adequateness of the MPEs^{*} specified in CD4^{*} of OIML R59^{*} for the Asia-Pacific region. The survey also highlighted the possibility of having two classes of instruments where: Class 1 would be suitable for less accurate instruments using the current MPEs of approx. 0.8% up to 16% moisture; and Class 2 would be suitable for more accurate instruments with MPEs of about 0.5% or lower such as using near infrared technology.
- Some claimed for the necessity of prioritization of specific agricultural products to be discussed at the next workshop with the intention of focusing on a few key products.
- Identify volunteers to manage related projects in the OIML TC17/SC8^{*}.
- The result revealed a need for modifying the APLMF working group structure to introduce a new working group on quality measurements of agricultural products and foods, and identify lead economies for specific projects. This proposed WG is expected to have the following projects.

Project 1. Grain moisture measurements (Rice, Tapioca etc.)

Project 2. Grain protein measurements (Wheat etc.)

Project 3. Starch measurements (Cassava etc.)

Project 4. Coffee measurements

Project 5. Milk measurements

These projects would develop calibration infrastructures appropriate to the APLMF region and exert influence on the global level activities such as ISO and OIML that would develop requirements for measuring instruments.

** Full names of acronyms are given at the end of this summary.*

1.2. Summary of Topic 2: Measurements for Food Safety and Health

- A multitude of quality systems were mentioned, i.e., ISO/IEC 17025^{*}, GMP^{*}, GPL^{*}, HACCP^{*}, GAP^{*}, Thai-GAP and Euro-GAP.
- Many quality terms were mentioned: traceability, uncertainty, verification, calibration, proficiency testing, standard and harmonization.
- Problems identified were: the number of regulations involved; lack of RM^{*}/CRM^{*} and inter-laboratory proficiency testing in the region; consideration of standard packaging; advanced technology – instrumentation & technical use.
- It was suggested from the speakers to provide a workshop on traceability in food

safety and metrology from the market to primary production of farm that shows how to trace back and identify the necessary tools.

- The chairpersons and speakers insisted a need for: a workshop on CRM or RM production; appropriate proficiency test and/or comparison laboratory tests, a workshop on the quality and safety of packaging required for food products, and development of closer communication between APLMF and APMP* to discuss matters related to TBT* and current regulations.

1.3. Summary of Topic 3: Quality Control of Agricultural Products

- It was pointed out that there were many problems and requisitions in some developing economies related to quality control with respect to agricultural products, i.e., yield of products might be high but their quality was low.
- It was suggested that CRM and calibration standards for atomic absorption spectroscopy instruments would be urgently provided by the NMIs* within the region to produce suitable CRM in good quality according to the ISO Guide 34*.
- The party remarked the importance of the role of NMIs in providing CRM, metrology standards, and traceability system for analysis results on agricultural products.
- Many agreed that it is necessary to provide training for quality measurement of agricultural products including how to use the metrology standards, how to improve the CRM, and how to evaluate the validation methods.
- Another proposal raised was to organize regional comparison and proficiency testing to improve the level and quality of measurement at the laboratories in the Asia-Pacific region.

1.4. Summary of Topic 4: Measurement Infrastructure

The participants agreed that we should:

- develop the following documents:
 - Project 1. A Guide to Metrological Control Systems (similar to the guidelines developed by APMP)
 - Project 2. A Guide to Legal Metrology (for external stakeholders)
 - Project 3. A Guide to the Preparation and Use of certified reference materials

It was suggested this task could be managed by the APLMF Working Group on Metrological Control Systems. Future workshops could bring together groups willing to develop these documents during the workshop.

- identify collaborative activities to support regional activities related to food measurements,
- provide links from APLMF website to database of available CRMs or develop a list of CRMs for activities relevant to the region and place it on the APLMF website,
- invite a broader range of stakeholders to the next workshop (lawyers, industry),
- consider progress of OIML R59 with special application to rice moisture measurements and give further consideration to metrological control systems for specific agricultural products (e.g. rice and other grain, tapioca, others to be decided as a result of APLMF survey).

2. Summary of Evaluation Results Submitted by the Participants:

Many participants agreed the objectives of this workshop were achieved and the workshop was successful. However, the following feedback should be considered in preparing for the next two workshops planned for this topic:

- Too many topics should have focused on 'agricultural products and foods' for economies, for example, moisture content evaluation on agricultural products and foods.
- The topics of the workshop were not clear, so it was not quite useful to the local participants especially those from the industries. The audience was expected to have some knowledge on metrology on agricultural products and foods, i.e., calibration on moisture content.
- Because of the limit of time and the broad range of topics to be discussed, more workshops should be organized, maybe each covering a specific topic for more focused discussion. The impacts of such workshop are cumulative and far reaching as well as beneficial.
- Some participants were not familiar with some contents such as ISO Guide 34 and 35* about legal metrology. The organizer should review and make clear communication with all speakers before proposing to the workshop so that it will meet the objective of the workshop.
- Follow-up workshops would be required as there are many issues to be addressed especially on those related to technical issues on actual setting up of various assessment means for the quality of food and agricultural products. Training workshops with more technical nature would be beneficial especially for economies that still have problems in carrying out the relevant tests/assessments on the quality of their food products.
- Issues to follow up are traceability and comparability, uncertainty, the document “A guide to creating or improving a national infrastructure for chemical measurement”, and activities progress in this field (new measurements, reference materials, PT*, new documents, etc.).
- Topics of pesticides laboratory measurement and metrology should be added.
- Working groups should be set up in order to draft standard methods of measurements accepted by APLMF members.
- The organizers should communicate and review the topics before proposing to the workshop to all speakers.

3. Additional Information from the Organizers

- A workshop which combined two of the initially planned ones, *Workshop on Product Safety* and a follow-up *Workshop on Metrology of Agricultural Products and Foods*, is scheduled for early 2008 in PR China. This workshop will be jointly presented by APEC and APLMF. The format of this workshop will be discussed during the 14th APLMF Forum held in October 2007. We are looking to organize the workshop based on the outputs of the *Workshop on Metrology of Agricultural Products and Foods* held in Thailand in February 2007. The third workshop is planned for early 2009.

- In the discussion among the organizers, it was proposed that APLMF approach should be within the metrological matters such as calibration and verification technique of instruments, MPE with traceability, proficiency test, as well as regulations and pattern approval of measuring instruments.
- Also it was remarked that liaisons with other specialist bodies are essential for future programs.
APMP: laboratories that provide necessary CRMs or standards.
APLAC and PAC: to assure the quality level of the technical competence.
PASC: to develop regulatory standards that would specifically be demanded in Asia-Pacific region.

APLMF Working Groups on Training Coordination and Quality Measurements of Agricultural Products

*** Acronyms:**

APMP:	Asia Pacific Metrology Programme
CD4:	4th Committee Draft of the OIML recommendation
CRM:	Certified Reference Materials
GAP:	Good Agricultural Practice
GMP:	Good Manufacturing Practice
GPL:	General Public License
HACCP:	Hazard Analysis and Critical Control Point
IEC:	International Electro-technical Commission
ISO:	International Organization for Standards
ISO/IEC 17025:	General requirements for the competence of testing and calibration laboratories proposed by ISO/IEC
ISO Guide 34:	ISO guide on general requirements for the competence of reference material producers
ISO Guide 35:	ISO guide on reference materials - general and statistical principles for certification
MPE(s):	Maximum Permissible Errors(s)
NMI(s):	National Metrology (Measurement) Institute(s)
OIML:	International Organization for Legal Metrology
OIML R59:	OIML Recommendation for moisture meters for cereal grains and oilseeds
OIML TC17/SC8:	OIML Technical Committee 17 / Sub Committee 8 on instruments for quality analysis of agricultural products
PT:	Proficiency Testing
RM:	Reference Materials
TBT:	Technical Barriers to Trade