

Working Group Report of 2017 Quality Measurement of Agricultural Products (QMAP)

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at

**25th APLMF WG Meetings and Forum Meeting
7 - 9 November 2018, Christchurch, New Zealand**

SECTION 1 – Details of the membership of WG

1.1. Brief history

1.2. Membership



- 1996: A study on rice moisture meters was initiated with a coordinator of Australia.
- 1997: WG on Rice Moisture Meters was established.
- 2001: Mr. Issei Akamastu of NMIJ took the chair. Mr. Hiroshi Kitano (2005) and Dr. Tsuyoshi Matsumoto (2007) took over the chair.
- 2007: WG was renamed as present to cover a wide range of grains.
- WG conducted 13 training courses and workshops since 2001.
- WG members may be the economies participated in the training courses; Cambodia, PR China, Chinese Taipei, Indonesia, Rep. Korea, Malaysia, Mongolia, Philippines, Thailand and Viet Nam.



APLMF Training Courses / Workshops on Rice Moisture Measurement and Quality of Agricultural Products

Course Title	Date (d/m/y)	Place (Host)	Trainers / Speakers	Trainees
Study tour for rice moisture meas.	30/9-5/10/2001	Several places in Japan (NMIJ)	I. Akamatsu (NMIJ) and others (JP)	9 from 7 econ.
Training courses on traceability of rice moisture meters (partly supported by APEC)	19-30/8/2002	Khon Kaen, Thailand (CBWM)	Akamatsu, H. Tanaka (NMIJ), T. Watanabe & N. Yoshida (Kett Co.)	23 from 7 econ.
	30/8-10/9/2004	Bien-hoa, Vietnam (STAMEQ)	Akamatsu (NMIJ), Watanabe, Yoshida & T. Suzuki (Kett Co.)	About 20
	11-29/11/2004	Chiang Mai, Thailand (CBWM)	Akamatsu, Tanaka (NMIJ), Watanabe, Yoshida & M. Yabe (Kett)	About 23 from ASEAN
	15-26/8/2005	Manila, Philippines (ITDI)	Akamatsu, Tanaka (NMIJ), Watanabe & Yoshida (Kett)	From ASEAN
Workshops on metrology of agricultural products and food safety (supported by APEC)	7-9/2/2007	Chiang Mai, Thailand (CBWM)	24 from 11 econ. including JP	About 80 incl. speakers
	4-6/6/2008	Hangzhou, PR China (AQSIQ)	24 from 14 econ. including JP	About 70 including speakers
	23-25/9/2009	Ho Chi Minh City, Vietnam (STAMEQ)	18 from 10 econ. including JP	20 from 11 economies
Training courses on traceability on rice moisture measurement (supported by MEDEA since 2017)	28/5-1/6/2012	Bandung, Indonesia (DoM)	T. Matsumoto (NMIJ), Yoshida & Yabe (Kett)	36 from 3 economies
	25-29/11/2013	Chiang Mai, Thailand (CBWM)	Matsumoto, Yoshida, Yabe, K. Emori & H. Noji (Kett).	33 from 8 economies
	16-20/11/2015	Phnom Penh, Cambodia (NMC)	Matsumoto, Yoshida, Yabe, Emori & R. Takahashi (Kett).	20 (+10 obs.) from 8 economies
	17-21/7/2017	Selangor, Malaysia (NMIM/SIRIM)	Matsumoto (NMIJ), Haslina bte Abdul Kadir (NMIM), Yoshida, Yabe & Takahashi (Kett).	18 (+8 obs.) from 10 economies

APLMF Training Courses / Workshops on Rice Moisture Measurement and Quality of Agricultural Products (Cont.)

Course Title	Date (d/m/y)	Place (Host)	Trainers / Speakers	Trainees
Small Training Course for WG on QMAP	3–6 July 2018	CBWM (Central Bureau of Weights and Measures), DIT in Nonthaburi, Thailand	<ol style="list-style-type: none"> 1. Akamatsu (NMIJ) and others (JP) 2. Mr. Surachai Sunzikaw, CBWM / WG Chair, Thailand 3. Mrs. Haslina bte Abdul Kadir, NMIM (National Metrology Institute of Malaysia), SIRIM Berhad / WG Co-Chair 4. Mr. Norihiro Yoshida, Kett Electric Laboratory Co. Ltd., Japan / Technical expert 	13 from 6 econ.

SECTION 2 – Key activities of 2017/18

2.1. Training courses on grain / rice moisture measurement The last course in Malaysia



- Conducted between 17-21 July, 2017 hosted by NMIM (National Metrology Institute of Malaysia), SIRIM Bhd. and supported by MEDEA
- 18 trainees + 8 observers from 10 economies; Bhutan, Cambodia, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, Philippines, Thailand and Viet Nam.

Training course on rice moisture in Malaysia in 2017



SECTION 2 – Key activities of 2017/18

2.1. Small Training Course for WG on QMAP



- After transferred the WG chair small the training course for WG on QMAP was held and hosted by CBWM (Central Bureau of Weights and Measures) in Thailand from 3 to 6 July 2018 and support by MEDEA
- Total 13 trainees plus 13 observers attended in this training course from the following four economies; Cambodia, Indonesia, Thailand and Vietnam.
- CBWM, NMIM (National Metrology Institute of Malaysia), NMII and Kett Electric Laboratory Co. Ltd. provided five trainers.
- Dedicated for transferring of the former chair knowledge and experience to the new chair the new WG members.
- Lectures components ; economy report, history/roles of WG, basic understanding of moisture measurement, discussion on future directions and visit to the laboratories in CBWM.

Small Training Course for WG on QMAP in July 2018



SECTION 2 – Key activities of 2017/18

2.1. Small meeting at CBWM in October 2018



- Hosted by CBWM) in Thailand On 23 and 24 October 2018, also support by MEDEA
- WG chair of Thailand, the co-chair of Malaysia, the former chair of Japan, two experts of Kett Electric Laboratory Co. Ltd.



SECTION 2 – Key activities of 2017/18

2.1. Small meeting at CBWM in October 2018

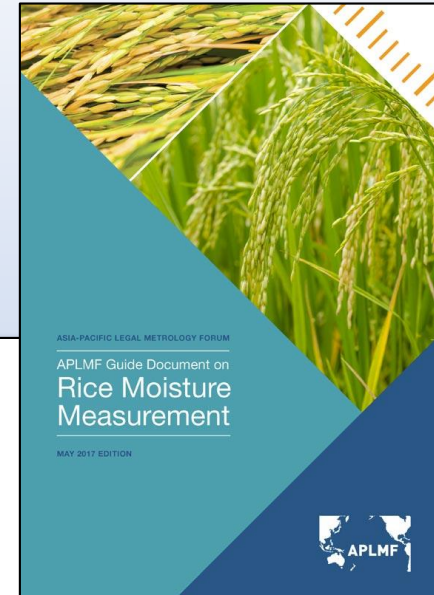


- Discussed on; (1) preparation of the large training course in Pattaya in December including confirmation of the schedule, (2) future training courses in 2019-2020 including target samples/properties, (3) future directions of WG including transfer to regional levels including ASEAN-ACCSQ and (4) WG report for the 25th APLMF Forum Meetings in November.

SECTION 2 – Key activities of 2017/18

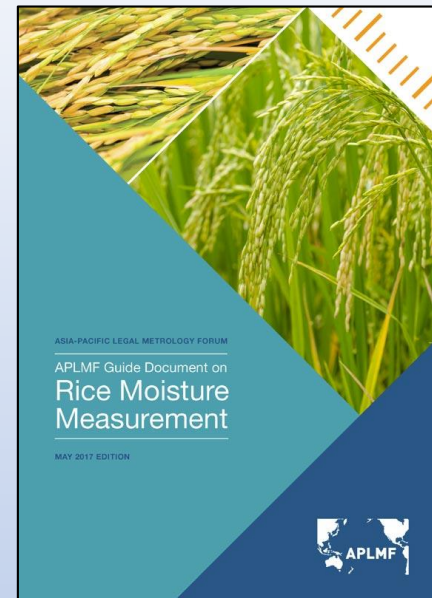
2.2. APLMF guide document on rice moisture measurement

- In Nov. 2016, the second draft of a new APLMF Guide Document on Rice Moisture Measurement was provided and comments were requested.
- In May 2017, the new APLMF Guide Document on Rice Moisture Measurement was published on the APLMF Website.
- This document aims to provide **practical procedures** to establish a regional **traceability** system and to **calibrate** grain moisture meters, which are **not covered** by OIML Recommendations or ISO documents.



SECTION 2 – Key activities of 2017/18

2.2. APLMF guide document on rice moisture measurement (Cont.)



- **Materials** used in the previous training courses on rice moisture measurement are used as the basis of this guide document.
- **Other economies** outside APLMF are also interested in this guide.



SECTION 2 – Key activities of 2017/18

2.3. Contributed to OIML

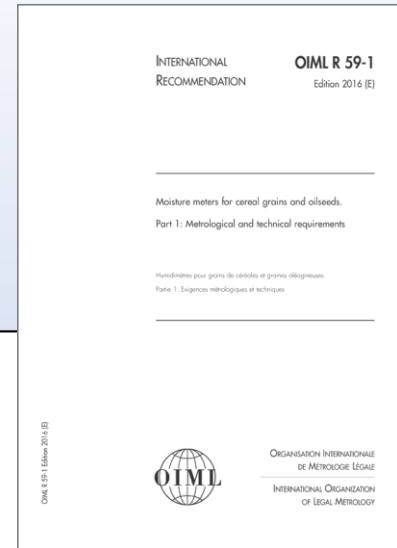
- WG is monitoring the activities of OIML **TC 17/SC 1** (humidity) and **TC 17/SC 8** (inst. for quality analysis of agri. products).

(1) TC 17/SC 1 on **R 59** *Moisture Meters for Cereal Grains and Oilseeds* (2016)

A new version of R 59 was **published** in March, 2017 after a long effort by the joint secretariat of USA and PR China.

(2) TC 17/SC 8 on **R 146** *Protein Measuring Instruments for Cereal Grains and Oilseeds* (2016: new)

A new R 146 was **published** in February 2017, after a long effort by the secretariat in Australia





SECTION 2 – Key activities of 2017/18

2.3. Contributed to OIML (Cont.)

- The former WG chair and experts in Japan attended the meetings of TC 17/SC 1 and TC 17/SC 8 and provided many comments from the viewpoint of the Asian economies.



OIML Meeting in 2013

SECTION 2 – Key activities of 2016/17

2.4. Cooperation with BIPM and APMP



The former WG chair exchanged information regarding the grain moisture measurement with the experts in metrology in NMIJ and APMP (Asia-Pacific Metrology Programme). The chairperson realized that grain moisture is one of the common topics of concern for both scientific metrology and legal metrology.

SECTION 3 – Future focus – Recommendations

3.1. Transfer of training programs to a regional level (key change 1)



- NMIJ determined to finish the WG chair.
As a background, NMIJ is not responsible for the quality of agricultural products. Another ministry (Ministry of Agriculture, Forestry and Fisheries, MAFF) supervises it in Japan.
- In July 2017, Dr. Matsumoto stepped down from WG Chair.
- At the 24th forum meeting, it was finally agreed that the WG chair was transferred to Thailand (chair) and Malaysia (co-chair).
- Dr. Matsumoto will support the new chair as a member. This proposal meets a new policy of APLMF (WG should be maintained by a real group of experts).
- This is a transition to the next generation. Competent trainees should be the trainers in the future who support the new chair.

SECTION 3 – Future focus – Recommendations

3.2. Continue of training courses (to be continued / proposed program)

Besides taking over the chair:

- Many economies request **continuing** training on rice moisture measurement.
- Many economies need a **traceability** and more practical **knowledge/skills**.

There are needs for:

- An advanced course at a higher level for the trainers in the future is also requested from several economies.
- WG plans other training courses aiming at a specific target of product other than rice (corn, beans, coffee...) as well as a longer course for two weeks for the experienced experts



SECTION 3 – Future focus – Recommendations

3.2. Continue of training courses (to be continued / proposed program)

The incoming training course for rice moisture measurement :

- Hosted by CBWM (Central Bureau of Weights and Measures), and be held at EWMC (Eastern Weights and Measures Center) in Pattaya, Thailand during 3-7 December, 2018.
- The objectives of the course is to
 - ✓ 1) provide participants with the knowledge and skills to understand international standards and recommendations.
 - ✓ 2) establish traceability by preparing a reference standard using the drying method, and
 - ✓ 3) verify rice moisture meters.

SECTION 3 – Future focus – Recommendations

3.2. Continue of training courses (to be continued / proposed program)

The incoming training course for rice moisture measurement (Cont.) :

- 22 participants from Bhutan, Cambodia, Indonesia, Kiribati, Laos, Malaysia, Mongolia, Myanmar, Philippines, Srilanka, Thailand and Vietnam, are registered to attend the courses and about 10 observers from Thailand.
- Trainers and assistant trainers consist of experts from Cambodia, Indonesia, Japan, Malaysia, Thailand, and Vietnam.

SECTION 3 – Future focus – Recommendations

3.3. Experts on this topic (for training program on grain moisture)

Among the economies which participated in training courses in the past, the WG recommends individuals from the metrology institutes of Cambodia, Indonesia, Malaysia, Mongolia, Philippines, PR. China, Thailand and Vietnam. Among them, Thailand already established a sound national traceability system and a framework for controlling moisture meters with type evaluation and verification.



SECTION 3 – Future focus – Recommendations

3.4. Revision of the APLMF guide document (to be continued)



- To review and update the present *APLMF Guide Document on Rice Moisture Measurement*;
 - ✓ To improve the contents and to catch up with recent developments in technology and social systems.
 - ✓ To replaced 'rice' with 'grain' to accommodate wider range of products and to make this guide more versatile which will be utilized by all grain-producing economies.

SECTION 3 – Future focus – Recommendations

Other works to be continued

3.4. Revision of the APLMF guide document (to be continued)



- To review and update the present *APLMF Guide Document on Rice Moisture Measurement(Cont.)*;
 - ✓ Planning to add additional information about the moisture adjustment method and uncertainty of grain moisture measurement.
 - ✓ will send an inquiry to the participants of the prior training courses and the incoming training course in December, to seek suggestions and comments about the guide document as well as the targets of future training courses.

SECTION 3 – Future focus – Recommendations

3.5. Contribution to OIML TC 17/SC 1 and TC 17/SC 8 (to be continued)



The WG should continue to contribute to OIML TC 17/SC 1 and TC 17/SC 8 even after the new R 59 and R 146 were published. The WG aims to contribute to harmonize between the activities of OIML and APLMF in agricultural measurements.

SECTION 3 – Future focus – Recommendations

3.6. Monitoring activities of BIPM and APMP (to be continued)



The WG continues to monitor activities in scientific metrology including BIPM and APMP, regarding the traceability and uncertainty in grain moisture measurements. These organizations recognize the importance of grain moisture measurement as an important application of scientific metrology. And some representatives from NIMT (National Institute of Metrology (Thailand)) are going to participate in the incoming training course for rice moisture measurement in Pattaya as observers.

SECTION 4 – Future focus – Emerging issues

4.1. Taking over the **assets** of WG

4.2. Special **remarks** on grain moisture



- The transfer of the chair shall proceed **not to lose** the **valuable assets** of WG (experience and materials).
- **Management with a group** including the former chair could be a good solution.
- Because grain moisture measurement strongly depends on practical skills, **practical component** is a **core item** to be maintained.

SECTION 4 – Future focus – Emerging issues

4.1. Taking over the **assets** of WG

4.2. Special **remarks** on grain moisture



- **Reference samples** of grain is another core item for a training as well as a traceability. There is a **critical difference** between a grain sample and a physical standard (mass, etc.) as its quality is not stable.
- **Preparation phase** of a training plays an important role. The quality of a training depends on the facility, equipment and samples. WG and trainers should **communicate closely** with the host institute in the preparation phase.

SECTION 4 – Future focus – Emerging issues

4.3. Synergy among the **stakeholders**

4.4. Cooperation with the **private** sectors



- A **framework** in an economy for grain moisture measurement is frequently maintained by several **independent ministries** of the government. A synergy among such ministries is **another important issue** to be remembered when we organize a training course.
➔ **Malaysia provided a good coordination in July!**

SECTION 4 – Future focus – Emerging issues

4.3. Synergy among the **stakeholders**

4.4. Cooperation with the **private** sectors



- **Support from private sectors** is another important factor. Such a training program essentially connected closely to the **equipment, instruments** and **knowledge** which are provided **commercially**. In reality, the organizer still needs support from **private sectors**. WG should find a **good compromise** with the private sectors for continuing training.



SECTION 4 – Future focus – Emerging issues

4.5. IT technologies supporting training


- Since 2015, a new system ([Google Drive](#)) realized a **paper-less course** gradually.
- Another online system ([Survey Monkey](#)) provided by PTB facilitated collection of **feedback comments** from the participants.
- Recently, many participants bring their own **PCs/tablets** which enable usage of such IT systems.



SECTION 4 – Future focus – Emerging issues

4.5. IT technologies supporting training

- Such an operation **lessened the workload** of the host as well as the trainers. WG encourages continuing such an operation using IT technologies.
- WG could not provide **e-learning materials** yet. WG recommends such material be provided with a **special session** for demonstration.



Thank you for your kind attention!