

CERTIFIED REFERENCE MATERIALS FROM PALM OIL PRODUCTS

by: ELINA HISHAMUDDIN



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Palm oil is the second largest vegetable oil produced worldwide. In terms of export, in the year 2003 alone, palm oil exported from Malaysia accounted for more than 47%, being the most traded oil in the world oils and fats market. As the leading country in palm oil trade, it is a necessity for Malaysia to ensure that the palm oil exported is of excellent quality. Hence, in ensuring that this requirement is met, harmonization of the test methods utilized throughout the trading of palm oil is required to avoid dispute arising in the quality and specifications which vary between countries. This accounts for the use of PORIM/MPOB Test Methods.

According to Palm Oil Refiners Association Malaysia (PORAM), the properties of RBD palm oil products produced from the palm oil refineries and shipped therefrom are to adhere strictly to the stipulated values in the specifications. Therefore, in order to assure the trueness and reliability of the tests performed to meet these specifications, a comparison of the measurement results must be made with the certified value of a certified reference material (CRM) of the same type. However, the limited amount of palm oil CRMs available in the market prevents this from being practiced.

Thus, this programme was initiated with the intention of producing palm oil CRMs (*Figure 1*) for the purpose of providing the Malaysian palm oil industry and laboratories worldwide with a good source of reliable CRMs for assessing trueness and precision of test methods performed on palm oil products for trading purposes. It is hoped that this will promote competence among palm oil testing laboratories in assuring the quality of their test results as a basic requirement for the accreditation of the



Figure 1. A batch of palm oil certified reference materials.

ISO/IEC 17025:1999 and also to promote the Malaysian Palm Oil Board (MPOB) as a centre for the certification of palm oil reference materials.

SPECIFICATIONS

The CRMs produced have been highly characterized and certified employing PORIM/MPOB Test Methods which exhibit high repeatability and reproducibility through various interlaboratory crosscheck programmes involving numerous accredited laboratories nationwide. These CRMs represent parameters such as slip melting point (SMP), iodine value (IV), fatty acid profile (FAC) and triacylglycerol (TAG) profile of the respective oils. Each individual CRM is supplemented with a certificate of analysis containing the certified parameter accompanied by a statement of uncertainty denoted by the 95% confidence interval (*Figure 2*). The certified values and their uncertainties are generated using state-of-the-art certification software, SoftCRM 1.2.0 which was developed by the European Commission of Standards, Measurement and Testing

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Malaysian Palm Oil Board, Ministry of Plantation Industries and Commodities, Malaysia

P. O. Box 10620, 50720 Kuala Lumpur, Malaysia. Tel: 03-89259155, 89259775, Website: <http://mpob.gov.my> Telefax: 03-89259446





Figure 2. A single unit of palm oil certified reference material with packaging.

Programmes. This eliminates the need for manual calculation thus generating certified values which are absolutely precise, accurate and error-free. Every value certified is endorsed by a member of the Malaysian Institute of Chemistry.

BENEFITS

The CRMs are available for use in a wide range of applications including assessing the trueness and precision of a measurement method when employing PORIM/MPOB Test Methods in the

analysis of palm products. Besides offering the industry with an inexpensive alternative to international standards, they also provide the industry as a means for improving the standard in palm oil testing and also encourage quality analysis in laboratories associated with the testing of palm oil products. This ensures Malaysia as the leading exporter of palm oil to be up-to-date with the latest activities where palm oil analysis is concerned.

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For more information kindly contact:

Director-General
MPOB
P. O. Box 10620
50720 Kuala Lumpur, Malaysia.
Tel: 03-89259155, 89259775
Website: <http://mpob.gov.my>
Telefax: 03-89259446