

DOST-ITDI to open first Metrology in Chemistry Laboratory in the Philippines

The Philippines' first Metrology in Chemistry Laboratory will be inaugurated on November 9, 2021. Science Secretary Fortunato T. De La Peña will lead the event together with the Director of DOST-ITDI, Dr. Annabelle V. Briones. Trade and Industry Secretary Ramon M. Lopez will be the keynote speaker.

Established by the Industrial Technology Development Institute (DOST-ITDI), the 1900 m², 4-story MiC Laboratory is located on Saliksik Street in the Science Complex in Bicutan, Taguig City. It will gather in hundreds from the food and water industry sectors and science communities as it officially opens its services to the public on Tuesday.

DOST-ITDI Director, Dr. Annabelle V. Briones, admitted that "It took us quite a while, a decade actually, to establish our chemical testing services and house it in one of the most economically vital and heavily invested infrastructures in metrology."

DOST-ITDI created the MiC Laboratory to help local testing laboratories comply with traceable chemical measurements by producing reference materials (RMs) and conducting accuracy-based Proficiency Testing (PT) schemes.

What makes RMs valuable is how it supports the results of measurement laboratories to ensure that commodities can pass stringent international trade standards on food quality and control. MiC thus aims to reduce the detention and recall of Philippine products for export.

But, while highly characterized, authenticated control materials, such as RMs, are vital in food testing, the Philippines took time to develop these. Finally, through the MiC Laboratory of DOST-ITDI, these are readily available.

Dr. Benilda S. Ebarvia, the former project leader of the MiC Team who conceptualized the establishment of the laboratory, explained that chemical testing and production of RMs or referencing is time-consuming.

She added that the referencing process requires skills that need to be learned and honed through the years adding that, "RM development has to be matched with appropriate, state of the art – that means very expensive - equipment. Staff who will be using the equipment and devices have to be trained to use, maintain, and troubleshoot the same."

Currently, most Philippine food manufacturers rely on RMs purchased overseas like the US, UK, Japan, China, and Thailand. RMs are pretty pricey; one material per food product may cost from Php15,000 to Php30,000. Further, these are updated continually.

To date, DOST-ITDI has developed RMs on trace presence of toxic metals in drinking water (manganese, nickel, cobalt, and iron), benzoic acid in banana catsup, sulfite as a preservative in dried mango, and histamine (a chemical indication of food spoilage) in dried salinas fish.

This year, it hopes to complete the development of 15 RMs on trace presence of pesticides in fresh mango, and other fruits and vegetables; and presence of veterinary drug residues such as salbutamol in pork meat; and 3-Amino-5-morpholino ethyl-2-oxazolidone or AMOZ in fish, among others.

Early works include RMs on the presence of trace heavy metals in water, such as lead, cadmium, copper, iron, manganese, nickel, zinc, cobalt, and magnesium. As well, an RM on calcium, a reactive metal in water, was developed. These metals are toxic and noted for their potential toxicity in the environment.

Through referencing, the MiC Laboratory stands to cut costs on purchasing RMs abroad by our local food and water industries. Further, it aims to ensure that local products pass international trade standards to avoid product recall or detention, a scenario that is too costly and damaging for our economy.

The MiC Laboratory is monitored by the Philippine Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) under a five-year program on capabilities enhancement of the National Metrology Laboratory of the Philippines. (AMGuevarra\ DOST-ITDI S&T Media Service)

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