Accreditation towards quality products

By Dr Lawrence D. Abbey & Augustine Andoh

GHANA, like many developing countries, faces challenges such as limited market access for exports due to the lack of production capacity and stringent technical, environmental, health and safety requirements set by importing markets.

Organisations such as the World Trade Organisation (WTO), the European Commission and the Asia-Pacific Economic Co-operation forum (APEC), have noted that the lack of acceptance or recognition of foreign test results is one of the most serious impediments to free trade.

It is in the light of problems of trade that the accreditation of testing laboratories of the Food Research Institute (FRI) of the Council for Scientific and Industrial Research (CSIR) and the Ghana Standards Board GSB) is of interest. This is quite an achievement in the sub-region.

In 2007, the CSIR- FRI became the first food testing laboratory in the West Africa Sub-region to be accredited by the South African National Accreditation System (SANAS).

CSIR-FRI has accreditation for eleven microbiological laboratory methods and four chemical methods by the South African National Accreditation System (SANAS), for being in compliance with standards set by the International Standards Organisation (ISO) and the International Electrotechnical Commission, in accordance to ISO/IEC 17025.

This accreditation, for being in compliance with the standards of ISO/IEC 17025, has recently been renewed to 2012.

Ghana chalked another first in West Africa when, in 2009, the microbiology and pesticide residue laboratories of the GSB were accredited by Deutsche Gesellschafe fur Akkreditierung mbH to ISO/IEC 17025:2005. The GSB now has three accredited metrology laboratories and two testing labs. GSB laboratories have nine accredited microbiology methods.

As per its mission, the CSIR- FRI is primarily, to conduct market oriented applied research and provides technical services and products profitably to the private sector and other stakeholders.

ISO/IEC 17025 is an international standard, which defines the requirements that a testing or calibration laboratory has to fulfil to show that it is technically competent and operates an efficient quality management system to ensure that it produces analytical results that should be accepted globally.

Accreditation means that a certified laboratory follows a set of procedures that cover all key processes in the business, monitors processes to ensure they are effective, keeps adequate records, checks output for defects, with appropriate and corrective action where necessary, regularly reviews individual processes and the quality system itself for effectiveness and facilitates continual improvement.

CSIR-FRI, one of the 13 institutes of the Council for Scientific and Industrial Research (CSIR), started operations as an UNDP/FAO project 45 years ago. It has made major contributions to the development of trade and industry, agriculture, health and the education sectors of the national economy.

It is an interesting development if tests conducted in developing countries such as Ghana could be accepted abroad. This sound quality infrastructure is a necessary condition to enable and enhance competitiveness of products of local companies on both the local and international markets.

The purpose of accreditation is to place test data from any accredited laboratory on an equal footing with that produced by any other accredited laboratory in the world. Accreditation seeks to identify laboratories that are competent to perform certain specified tests and does not focus on centres of scientific excellence.

CSIR-FRI wants to play a key role in the transformation of the food processing industry to be internationally competitive with particular reference to product safety, quality and preservation.

Chemical tests conducted by the FRI include protein as total nitrogen, determination of crude fat content, ash and moisture. Other chemical tests conducted by FRI include minerals (calcium , iron and phosphorus), oils and fats (free fatty acids, saponification value, iodine value, impurities and unsaponification value), sugars (total soluble solids), aflatoxin , physical examination and other tests..

The methods that have been recently accredited are those for protein as total nitrogen, the determination of crude fat content and moisture.

Microbiological analyses are conducted for many commodities. These include fish and fish products, chocolate and cocoa products, water, fruit juices and soft drinks, biscuits, toffees, dairy products, flour and flour products, meat and meat products, poultry, spices, flavourings and condiments, and vegetables.

The recently accredited methods include the enumeration of yeasts and moulds, presumptive *Escherichia coli,* detection of Salmonella and coliform bacteria in foods, determination of *Bacillus cereus* in foods, aerobic micro organisms, and thermo-tolerant coliform bacteria after pre-incubation, *Enterococcus* determination in foods, the total number of microbes with the swab method on utensils in contact with food, Canned foods (aerobic and anaerobic) and the enumeration of coagulase positive *Staphylococcus aureus* in foods.

A more credible and acceptable analytical support is therefore, now available for the more than 150 local industries that use FRI's facilities and laboratories, especially for the export products and commodities.

Products are subject to inspection and testing for quality. Testing is the main means of determining whether a product, process or service complies with regulations or other specified requirements. It involves a technical measurement or examination by competent persons to draw conclusions as to whether or not a product or service meets requirements specified by regulatory authorities or buyers. Tests involve the measurement of dimensions, chemical composition, microbiological purity, and the strength or other physical characteristics of materials or structures.

Regulatory authorities and commercial buyers of foreign products frequently require testing at the point of import or delivery by their own designated laboratories even when adequate testing has been performed in the country of manufacture.

Accreditation is not dependent on a laboratory using the most up-to-date equipment; it is concerned with the production of valid data. Perhaps, the most difficult problem for laboratory managers in developing countries is the recruitment and retention of qualified and competent staff. This probably imposes additional burdens with respect to training, but it is a problem that concerns the operation of the laboratory, and not its accreditation.

Hopefully, this accreditation and efforts being made by the CSIR-FRI and GSB to get more laboratory methods accredited would lead to better food control programmes in Ghana. A better food and drug administration in Ghana would require co-operative efforts of all administrative (inspectorial and testing) and research institutes and agencies in Ghana. We need to ensure that the conditions for processing, packaging, labelling, storage and marketing are suitable and further developed.

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