



BULLETIN

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UTILIZATION OF GARMENT FACTORY WASTE AS FUEL

The Materials Technology Section (MTS), with the support of the Environment Technology Section and the Marketing and Business Development Department of the ITI has designed and installed a boiler which can use waste polyester material from the garment factories processed into briquettes, as the fuel source for the boilers.

Polyester waste from the garment factories cause a huge environmental problem by ending up in land fill sites and remaining in the soil for a long period of time. Burning these is also not an acceptable solution as it produces harmful smoke and residues. Further, unlike cotton waste, polyester waste cannot be used for cleaning purposes due to its non-absorbent nature. Discussions with the Garment Industry led scientists at the MTS to identify this problem and formulate a method to produce a burnable material from the waste polyester which could be used as a source of energy. When a garment factory, Sanchia (Pvt.) Ltd. was approached with this concept and proposal, ITI was given the contract to devise a method to recycle the polyester waste generated in their factory into a fuel source, and to use this as a substitute for the electrical power presently operating the boilers used in the pressing operation.

This led to the signing of an MOU between ITI and Sanchia (Pvt) Ltd. whereby the MTS undertook to study the factory process, develop a fuel briquette, carry out the technical and financial feasibility study, and then proceed with the design and installation of a special boiler that could generate the steam required for ironing and pressing processes. The fuel briquette was developed after a detailed study of the properties of Polyester waste, including analysis of combustion products and examination of its thermal properties. Polyester waste compacting studies were then carried out and a process devised to formulate a high calorific value briquette which leaves minimum residue on combustion. The boiler was specially designed to

minimize emissions hazardous to human health, especially Suspended Particulate Matter (SPM). The construction of the ITI designed boiler was sub contracted and installed at the client's site. The steam lines were connected to the existing presses in the ironing department. Several trials were run in the factory premises, and it was demonstrated that the emissions were within the limits stipulated by the draft standard for boiler (steam generating units) emissions in Sri Lanka.

It is gratifying to note that Sanchia (Pvt.) Ltd has begun to use these polyester briquettes in the specially designed boiler for the pressing and ironing of garments. Recognizing the environmental friendly approach of Sanchia (Pvt.) Ltd., the company has been awarded a grant of 50 % of the cost of this project by the Promotion of Eco-efficient Productivity (PEP) Project of the Ceylon Chamber of Commerce. The PEP project was started in 2006 with the financial support from the Royal Netherlands Embassy.

The process for the briquette manufacture and the design of the boiler await technology transfer to other Garment industries interested in this technology. The Materials Technology Section of the ITI is also ready to undertake contract projects from industry to convert solid waste to fuel and/or other value added applications.

For further details please contact Mr. Lal Motha, Materials Technology Section, T.P. 2693807 - 09



Our Mission

To provide demand driven scientific industrial R&D and internationally competitive technical services to catalyse rapid industrialisation for the benefit of the people of Sri Lanka

ITI ASSISTS MEDICAL LABORATORY IN OBTAINING ACCREDITATION

Confidence Medical Centre Pvt (Ltd), which offers fully automated laboratory services to its clients, has been accredited as per ISO 15189:2007 Standard for Medical Laboratories-Particular requirements for quality and competence by the Sri Lanka Accreditation Board for Conformity Assessment (SLAB). The certificate of Accreditation was awarded at a recent ceremony held at the Trans Asia Hotel, organized by the SLAB. The accreditation was awarded after assessing the laboratory for quality and competency, and the Confidence Medical Centre (Pvt) Ltd becomes the first Medical laboratory in Sri Lanka to hold the Accreditation status.

Confidence Medical Centre launched its operations with basic health care facilities in 1989, and it focuses primarily on screening of migrant labour. It is ranked as one of the top ten Gulf Corporation Council States approved medical centres in Sri Lanka.

The Industrial Technology Institute (ITI) having proven experience in establishing Laboratory Quality Management Systems, embarked on this venture in providing consultancy to the Confidence Medical Centre. The consultancy

involved assistance in preparation of Manuals and other related documents, implementation of the Quality Management System (QMS), training of staff in QMS and calculation of uncertainty of measurements.

The Chairman of the Laboratory has acknowledged the outstanding contribution made by the Quality Assurance Department of the ITI headed by Mrs Subadra Jayasinghe towards acquiring the accreditation status for the laboratory. To quote from his letter, *"the team was friendly, efficient and responsive to the queries and clarifications whenever it became necessary to seek assistance to clear the doubts. They are the finest professionals whom our staff ever had the pleasure of working with."*

This is indeed a very gratifying accolade received from a private sector organization, and the ITI is happy that it was able to assist in improving the quality of the services offered in the country. They are also proud of the officers receiving such accolades on behalf of the ITI.

The team which provided these services were, Mrs. Subadra Jayasinghe, Head of the Quality Assurance Department, Mrs. Shanthi Perera, Mrs. Disney Dayaratne and Ms Champika Thirimanna.

QUALITY MANAGEMENT IN LIBRARIES AND INFORMATION CENTRES: WITH SPECIAL REFERENCE TO ISO 9001:2000



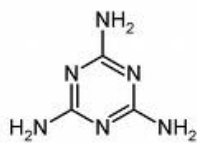
Quality Assurance in the library and information field is a new concept which has been slowly gaining ground. As the first library to obtain ISO 9001:2000 Quality Management System (QMS) in the country, (*the SLSI having obtained certification to the previous standard*), the Information Services Centre of the ITI organized a workshop on "Quality Management in Libraries and Information Centres: with Special Reference to ISO 9001:2000" from 5th to 9th May 2008. The main objective of the workshop was to share the knowledge and experience gained during the process of obtaining certification with colleagues in the library field in order to help them to work towards implementing a quality system in their own libraries.

Library staff from various institutions, both private and government, participated in the workshop. With a view to providing personalized attention to all participants, the number of participants was limited to twenty five. All the participants were exposed to practical sessions whereby they were made to formulate their own documents in keeping with policies and working of their individual institutions. A keen interest was shown during these sessions and active participation was displayed. The programme was carried out by the officers of the Information Services Centre with contributions from Mrs. Subadra Jayasinghe, Head Quality Assurance Department, Mrs. Shanthi Perera, Senior Quality Assurance Officer, and Mrs. Harshani Dissanayake, a former member of the ISC. The programme was arranged in such a manner that the whole spectrum of the standard ISO 9001:2000 QMS, was comprehensively covered during these 5 days, with special reference being made to libraries.

From the feedback received by the participants, the workshop was said to be an unmitigated success. As a consequence of the workshop, a few libraries are already working towards obtaining ISO certification.

ARE LABORATORIES ACCREDITED FOR TESTING MELAMINE?

A great cataclysm was experienced around the world by the milk and other milk related industries, with the revelation of Chinese milk powder being adulterated with melamine. Unlike the nitrogen atom in amino acid, the basic unit of protein, six nitrogen atoms in melamine give a misleading higher value for the protein test.



Melamine

Health officials and manufacturers in milk powder importing countries rushed their samples to laboratories for testing. The availability of accurate testing facilities in such a situation is a crucial factor which will affect the health of a nation and the economy of a country.

The testing and analysis of such samples should be carried out by laboratories accredited as per the requirements stated in the ISO 17025:2005 standard to perform the required test. The concept of an accredited laboratory itself is often misunderstood. According to the standard accreditation always refers to the specific test for a compound in a specified matrix conducted in the particular laboratory. As an example a laboratory accredited to test heavy metals in water is not accredited to test heavy metals in tea, although the testing procedure for heavy metals is the same, these tests in two matrices (water and tea) should be accredited separately.

Laboratory accreditation of specific tests is not something that could be achieved overnight. To be accredited, competency in testing for a considerable period has to be proven. Accreditation status of a laboratory assures that the laboratory has an established Quality Management System (QMS). A report from an accredited lab always bears the logo of the accreditation body on their report.

At present, laboratories not only in Sri Lanka, but in most countries are not accredited for testing melamine. As this is a new issue, none of the laboratories which were not previously accredited to test melamine can not get the accreditation immediately.

In the absence of a lab accredited in Sri Lanka for

melamine testing we have to rely on the next best option, and that is to rely on a lab having an established QMS, which is accredited to carry out various other tests. They should be in a position to prove the competence if & when questioned by their customers.

The Industrial Technology Institute (ITI) has laboratories, in which they carry out the accredited testing in all three areas of chemical, microbiological & mechanical along with an accredited Calibration laboratory. Having accredited services in all four fields is a rare achievement that most laboratories do not possess. ITI laboratories have been accredited by Swedish Accreditation Board, which is internationally recognized and Sri Lanka Accreditation Board. To maintain this status ITI laboratories regularly participate in proficiency testing rounds together with the leading laboratories in the world.

Scope of Accreditation of Laboratories of ITI (SWEDAC & SLAB)

Chemical Testing

- Fish – Histamine, Heavy metals
- Milk – Vitamin A
- Margarine – Vitamin E
- Urea* – Biuret, Nitrogen
- All fertilizers* – Nitrogen, Phosphorus, Potassium
- Black tea* - All parameters in ISO 3720, Moisture content
- Cashew* - Moisture content, Grading
- Potable water – Physical & Chemical parameter, Heavy metals
- Waste water – BOD, COD, Heavy metals, Anions, Other physical parameters
- Pesticide residues in water
- Lead & Cadmium Leaching in ceramic & porcelain ware*

Microbiological Testing

- Microbiology tests of water & Fish

Mechanical Testing

- Rubber product testing

Calibration

- Mass, Temperature, Dimensions, Electrical, Volumetric

* **Only SLAB Accreditation**

ITI TAKES THE FIRST STEPS TOWARDS A PAPERLESS OFFICE

ITI has now launched an internal website for its staff with easy access to information relating to the Institute. The website gives access to all circulars issued by the Administration, internal policy, publications, reports and all other employee related information. Events organized by the Institute, including those organized by the different societies, photographs of such events are also included, with a calendar incorporating the day to day happenings. This internal website can be visited at <http://inet> by all employees of the ITI. The contents of the website obviates the necessity of large scale printing of internal documents. This is in keeping with the recent circular sent by the Presidential Secretariat which emphasises the reduction of printed documents, with the ultimate aim of having a paperless office in the public domain. ITI is proud to announce that it has been able to respond to this request within a relatively short period of time.

The key to the success of this website is the speedy updating of information, giving the users the latest information available. This has been made possible by a dynamic and versatile team of officers from different sections of the Institute, who undertook the uploading of the different categories of information.

The concept of having this internal website was the brainchild of Mr. Ananda Pannila, Head/ETL who came up with the novel idea of an ITI Intranet. The concept has now come to realization with the very able effort of Mr. M. S. M. Aroos, Research Officer ETL who developed the website. ITI is deeply appreciative of both Mr. Pannila and to Mr. Aroos for their very valued contribution.

NON-ALCOHOLIC BEVERAGE FROM KITHUL SAP



Kithul or *Caryota urens* sap is widely known among the Asians from historic times for its products such as treacle, jaggery and toddy which are made from it. Kithul sap contains 5 – 18 % natural sugars or sucrose, glucose, fructose etc and is highly perishable. It starts deteriorating from the moment it flows out from the flower due to fermentation by the yeast in the environment.

Ms. Damitha Rajapakse and Ms. Agnes Fernando of the Food Technology Section of the ITI have formulated a method to process kithul sap into a refreshing, natural, non-fermented drink and obtained the patent rights for the process.

This novel drink could be stored in sealed bottle at room temperature for more than six months. In this process they have been able to arrest the fermentation soon after tapping, and this helps the processing of the sap to make the non-alcoholic beverage.

For further details please contact Ms. Damitha Rajapakse, Food Technology Section, ITI. T.P. 2693807 - 09

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