

QUALITY IMPROVEMENT

The first Quality Evaluation Laboratory (QEL) of Spices Board was established in 1989 at Cochin. It is certified under the ISO 9002:1994 Quality Management System in 1997 and upgraded to ISO 9001: 2008 in 2009. And ISO 14001: 1996 Environmental Management System in 1999 and upgraded to 14001: 2004 Environmental Management System in 2006 by the British Standards Institution, U.K. It is also accredited under ISO/IEC: 17025 in September 2004 by the National Accreditation Board for Testing & Calibration Laboratories (NABL), Department of Science & Technology, Govt. of India.

As a part of providing speedy analytical services to exporters, Spices Board has established Regional Quality Evaluation laboratories at the major producing / exporting centers Viz. Mumbai, Chennai, Guntur, Tuticorin and New Delhi. The construction work of the Laboratory at Kandla and Kolkata are in progress. The laboratories at Mumbai, Guntur and Chennai are also having NABL (ISO/IEC: 17025) accreditation and the other laboratories are in the process of getting the same.

The Laboratory provides analytical services to the Indian Spice Industry and monitors the quality of spices produced and processed in the country. It also undertakes testing and certification of selected spices for export under the mandatory inspection by Spices Board. It has facilities to analyze various physical, chemical and microbial parameters including pesticide residues, mycotoxins, heavy metals, illegal dyes like Sudan I-IV, Para Red, Rhodamine B, Butter Yellow, Sudan Red 7B, Sudan Orange G etc, and contaminants/ adulterants in spices and spice products.

The laboratories are equipped with the latest sophisticated instruments like LC MS/MS, GC MS/MS, AAS, HPLC etc to undertake the analysis as per the requirements of importing countries. All the activities under the ISO 9001:2008 systems in the laboratory are fully computerized and are constantly upgraded.

To ensure the analytical credibility of the laboratory, the lab regularly participates in check samples/validation programs organized by National/International agencies like

Food Analysis Proficiency Assessment Scheme (FAPAS) and Food Examination Proficiency Assessment Scheme (FEPAS) by the Food and Environment Research Agency (FERA), U.K, American Spice Trade Association (ASTA), USA, International Pepper Community (IPC), Jakarta, Eurofins, Germany etc and the proficiency testing programs (PTP) conducted by the NABL accredited Laboratories in India.

The Laboratories also conduct regular inter-laboratory check sample programs for the major parameters (like Aflatoxin, Sudan dye I-IV and pesticide residues, curcumin, capsaicin etc., with the laboratories in major importing countries and major spice/spice products analyzing Laboratories in India. It also conducts inter laboratory check sample programme (ring test) with all the Regional Spices Board Labs for various parameters.

All the technical staffs in the laboratory are periodically trained in reputed National/International laboratories like Central Science Laboratory, UK, Japan Food Research Laboratory, Japan, Certified Analytical Laboratories Inc; USA, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), USA, CFTRI, Mysore, ICAR - CIFT etc. to update their analytical skill. The Laboratory follows internationally accepted test methods for various analysis and validates new test methods as and when necessary.

Analytical Services under the Mandatory inspection

Spices Board has introduced the mandatory inspection on the consignment of chillies and chilli products exported from India since 2003 against the incidence of Sudan and Aflatoxins and extended to turmeric powder for the clearance of Sudan I – IV since May 2005 and further extended to Nutmeg, Mace and Ginger for the conformance on Aflatoxin regulations for the EU countries.

The export of Chilli and Chilli products and Cumin and Cumin products from India to Japan are tested for the presence of selected pesticides under the mandatory inspection of the Board since September 2012. Dried Curry Leaf consignments to European Union are brought under mandatory testing for selected pesticides since January, 2013.

Also the cumin seeds exported to various countries are examined for the presence of extraneous matter and other seeds content under the mandatory inspection of the Board with effect from March, 2014.

The laboratory performs the analysis of all these samples collected from the export consignments under the mandatory inspection program of Spices Board. About 100,000 spice samples are tested annually in the Board's laboratories for various quality parameters.

Training program.

Quality Evaluation Laboratory of Spices Board conducts training program every year to develop and upgrade the technical skills of the personnel working in Spice Industry. The laboratory organizes training programs in the following modules each with 5 days duration. Based on the request from the beneficiaries, training for additional batches for each of the above program is also conducted in the same year.

1. Microbiological analysis of Spices and Spice products.
2. Analysis of Mycotoxins and Illegal dyes in Spices and Spice products using HPLC and LC-MS/MS.
3. Physical and Chemical analysis of Spices and Spice products.
4. Analysis of Pesticides in Spices and Spice products using GC and LC-MS/MS.

The Laboratory recruits Postgraduates in Chemistry / Microbiology in every alternate year through walk in interview to work as trainee analyst in its labs all over India. They will be given intensive training for a period of three months and their service is utilised for about two years in the labs. After two years of service, these candidates find jobs potential in Spices industries/testing labs/ similar organizations. Lab also provides guidance to graduate and Postgraduate students from academic and research institutions for their project/dissertation work.

Participation in Technical Meetings pertinent to Quality Issues of Spices.

Scientific staff Members from Quality Evaluation Laboratory of the Board, participate regularly in the technical meetings held at National and International levels for the harmonization/formulation of Quality standards for Spices and Spice products, which is being carried out in collaboration with Bureau of Indian standards (BIS), Food Safety and Standards Authority of India (FSSAI), International Organization for Standardization (ISO), Codex Alimentarius Commission (CAC), International Pepper community (IPC), American Spice Trade Associations (ASTA) etc. Comments/suggestions are also provided to BIS, ISO, IPC and National CODEX on various documents related to the specifications/quality issues on Spices as and when called for by the National/ International organizations/agencies.

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