



एपारिचेस बोर्ड
भारत

*Spices Board,
India*

Spices Board

Spices Board is the flagship organisation for the development and world wide promotion of Indian Spices.

It is an autonomous body under the Ministry of Commerce & Industry.



Quality Evaluation Laboratory, Kochi-25



The Board was
established in 1986 under the
Spices Board Act with the merger of
the erstwhile Cardamom Board and Spices
Export Promotion Council.

Spices Board, as an apex body, spearheading
the activities for excellence of Indian Spices,
has made quality and hygiene the corner
stones for its development and
promotional strategies.



Spices Board,
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Vision of the Indian spice industry

“ To become the international processing hub and premier supplier of clean, safe and value added spices and herbs to the industrial, retail, and food service segments of the global spices market by meeting the quality requirements”

Vision of the Quality Lab

The laboratory is in the process of becoming an International Centre of Excellence in the analysis of Spices and spice products.

As a regulatory body, Spices Board aims at analysing all the export consignments of Spices & Spice products as per the international regulations. To achieve this goal, the Laboratory is in the process of incorporating additional parameters and aims at equipping for handling more volume of samples.





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Develop the lab
analysis of spi
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Regional Lab	Accredited in
Mumbai	2011
Guntur	2013
Chennai	2014

Major objectives of the Quality Evaluation Laboratories.

- ◆ Provide Analytical Services
- ◆ Mandatory Quality check on export consignments
- ◆ Conduct Validation/Check Sample Programme on various parameters.
- ◆ Training technical personnel from Spice Industry
- ◆ Support for establishing Lab in spice export units

- ◆ Participation in ISO/IPC (International Pepper Community) /BIS(Bureau of Indian Standards)/ASTA(American Spice Trade Association) /FAPAS(Food Analysis Proficiency Assessment Scheme)/FEPAS(Food Examination Proficiency Assessment Scheme) Harmonization/Establishment of various standards with Codex, ISO, IPC, ASTA, FSSAI(Food Safety & Standards Authority of India) etc.
- ◆ Compilation/validation of Specification/Analytical Method.
- ◆ Setting-up of Regional Labs

Major Equipments/Facilities

Major Equipments/Parameters			
Equipments	Parameters	Test Methods	LOQ
LC-MS/MS Q trap	Illegal Dyes	EU News notification/ASTA	10 µg/kg
LC-MS/MS	Sudan I-IV	EU News notification/ASTA	10 µg/kg
GC-MS ion trap	Pesticides confirmation	PAM/AOAC	10 µg/kg
GC-ECD/FPD, "Q" Trap	Pesticide residues	PAM/AOAC	10 µg/kg
AAS with graphite furnace.	Heavy Metals	AOAC	0.1 mg/kg
HPLC-FD	Aflatoxins /Ochratoxin A	ASTA/AOAC	0.5 µg/kg /5.0 µg/kg
HPLC-UV/FD/DAD	Capsaicin, vanillin etc.	ASTA/AOAC	NA
UV-Vis spectro photometer	Curcumin, piperine, color value	ASTA/AOAC	NA
VIDAS	Salmonella	BAM	NA



Mycotoxins [Aflatoxins and]
High Performance Liquid Chromatography with Fluorescent Detector
and post column derivatisation is used for the



HPLC with fluorescent d



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Pesticide Residues. [organochlorines, organophosphorous & pyrethroids]. Organochlorines(BHC,DDT,Endosulfan etc) and Pyrethroids (Cypermethrin and fenvalerate) are analysed by Gas Chromatograph with Electron Capture Detector.

Organophosphorous compounds such as Ethion, Chlorpyrifos, Quinalphos,



GC with ECD
Disulfoton etc are analysed by Gas Chromatograph with FPD.(Flame Photometric Detector)



GC with FPD

Capsaicin, Vanillin, Gingerol and Shogaols.

(Analysed by HPLC with UV-Vis Detector / Diode Array Detector)

Curcumin in Turmeric, Piperine in Pepper and Color value of chillies

(Analysed by UV- Visible Spectrophotometer)

Volatile oil (by hydro distillation method using Clevenger Apparatus)

Moisture (Toluene distillation method using Dean and Stark apparatus)

Total Ash (gravimetric method) oleoresin(Soxhlet method) etc.



Automated soxhlet extraction system

Total Plate Count, Yeast & Mould, Pathogens viz. *Salmonella*, *E.coli*, *B.cereus*, *S.aureus*, *C.Perfringens* etc
(Analysed as per the methods specified in Bacteriological Analytical Manual, BAM).



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Bio-safety Cabinet



Immuno Diagnostic Assay System





Annual Training Programme conducted at QEL, Kochi.

Following training programmes will be conducted during November-December in every year and the details will be published in the website www.indianspices.com.

All the training programmes are practical oriented and hands on training will be provided for the participants.

1. Physical and Chemical Analysis of spices and spice products. Determination of intrinsic qualities of spices such as capsaicin (in chillies), Piperine (in pepper), Curcumin (in Turmeric) etc are covered. An analysis of Macro contaminants (extraneous matter, physical mould, insect defiled, Excreta mammalian etc) are included in the training programmes.
2. GC analysis of pesticide residues (organochlorines, organophosphorous & pyrethroids). The training includes sample preparation techniques, extraction methods, clean-up techniques and instrumentation part.
3. Microbial parameters such as *E. Coli*, *Salmonella*, Coliforms, Total Plate Count, Yeast & Mould etc.
4. HPLC analysis of Aflatoxins and analysis of illegal dyes (Sudan, Rhodamine, Parared, Sudan orange G etc.). The training emphasises on sample homogenisation techniques, extraction methods and instrumentation.



Cleanup by Immuno Affinity Column



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