



STANDARDIZATION AND QUALITY ANALYSIS OF HERBAL/AYURVEDIC DRUGS

CSIR-Central Institute of Medicinal and Aromatic Plants BROCHURE

CSIR-CIMAP is a national R&D Laboratory of CSIR having a unique research mandate on medicinal and aromatic plants (MAPs) for the industry and society. CIMAP is steering multidisciplinary high quality research in biological and chemical sciences and extending technologies and services to the farmers and entrepreneurs of medicinal and aromatic plants (MAPs) with its research headquarter at Lucknow (Uttar Pradesh) and Research Centres at Bangalore (Karnataka), Hyderabad (Telangana), Pantnagar and Purara (Uttarakhand). CIMAP is equipping the nation with high-tech agriculture linked to industrial processing of MAPs. CIMAP is equipped with state-of-the-art multidisciplinary laboratories, ultra-modern instrumentation facilities and scientific expertise in agriculture, genetics and plant breeding, molecular taxonomy, molecular and structural biology, plant biotechnology, biochemistry, microbiology, and chemical sciences, apart from development of herbal products.

CSIR-CIMAP invites applications for " Workshop & Advanced Training Program on "Standardization and Quality Analysis of Herbal/Ayurvedic Drugs" at its headquarter Lucknow, as per the details given below:

Title of the Course	:	Workshop & Advanced Training Program on "Standardization and Quality Analysis of Herbal/ <i>Ayurvedic</i> Drugs
Duration	:	3 Weeks
No. of Seats	:	15-20
Educational Qualification	:	Graduates /Post-graduates in Pharma/Science/Chemistry
Age group	:	21-45 Years
Date of Commencement	:	7 th -27 th November 2017
Venue of the course	:	CSIR-CIMAP, Lucknow
Course Fee	:	Rs. 21,000/- fir self-sponsored Rs. 30,000/- for Industries/Institution sponsored
Residential/Non-residential	:	Residential
Coordinator	:	Dr.Karuna Shanker (0522-2718580)

OBJECTIVES: The skill development program will cover practical aspects of herbal, classical and Ayurvedic proprietary medicine analysis which include authentication of raw material, samples preparations, selection of analytical method(s) of analysis, raw herbs and finished drug analysis, interpretation of chromatographic data, significance of marker chemicals, application of spectral techniques, etc.

LEARNING OUTCOMES: At the end of the programme the learner would have learnt and have an exposure on the following aspects

- Role of pharmacognostical techniques for ensuring the genuine raw herb
- Recent advances in Standardization of herbal drugs
- Development of in-house Botanical Reference Substance (BRS) of raw medicinal herbs
- Isolation, characterization of marker chemicals for the standardization of herbal drugs
- Role of chromatographic techniques such HPTLC, HPLC and LC-MS in the quality assurance of herbal/*Ayurvedic* drugs.
- Role of HPTLC/HPLC fingerprint in herbals
- Method development and herbal drug analysis.
- Significance of microbial load, toxic metal and aflatoxins analysis
- Current regulatory guidelines and status of herbal, classical and proprietary *Ayurvedic* drugs.

Training for whom: The Advanced training course aims to impart necessary skill-sets to empower turn young graduate in pharma/science/chemistry into herbal/pharma industry-ready professionals, for ready absorption by the industry. In addition to core-subjects, the training offers specialization in a) herbal-pharma product technology b) Fermentation, and c) AYUSH Drug Regulatory issues. This course is designed keeping the requirements of both beginners and intermediate-level trainees. The course curriculum and training program exposure is expected to be useful for-

- Unemployed Science/Pharma graduate and postgraduate looking for better prospect in herbal/Ayurveda drug industry
- *Ayurvedic* researchers
- Researchers in pharmacy (pharmacognosy, phytochemistry and others)
- Ayurvedic/Herbal Drug, Herbal Cosmetics Industry – R & D Managers
- Lab managers and product/policy developers of indigenous medicine/herbal sector
- QA/QC person working in herbal MSMEs,
- Initial level scientists, academicians, and research scholars

Course curriculum: The course curriculum will be practical intensive with minimum 4-5 hours/day of hands on experience. Additionally, sufficient time will be provided to the trainees to understand the basic principles of pharmacognosy, phytochemistry and analytical chemistry with their application in herbal/*Ayurvedic* drugs standardization and quality analysis through lectures and interactive sessions. The trainees will have access to modern analytical tools like HPTLC.HPLC, UPLC and LC-MS and LC-MS/MS and ICP-AES etc.

Management and Faculty: The faculty/trainers will be drawn predominantly from experienced, competent and highly skilled S&T personnel from CSIR-CIMAP. They are adequately trained to face the challenges of inter-disciplinary and trans-disciplinary approaches used in the QA/QC of herbal drugs. A few experts will be called for specialized topics.

Selection Procedure: Open to all eligible applicant. The merit basis application will be scrutinised and followed by interview for selection. The selection for direct and sponsored candidates will be done separately depending on the number of applicants.

Methods of Instruction: Instruction methods involve lectures, demonstrations and hands on training of operation and trouble shooting. LCD projection facilities will be available for theory classes. Practical classes will be done in the respective laboratories. Medium of instruction will be English

Accommodation Facility: CSIR-CIMAP will provide the hostel accommodation to each students on twin sharing basis. The access of internet facilities in the hostel will be available.

Salient Features of the Training: The candidates will be exposed to hands on experience on plant collection and storage, organoleptic, pharmacognostic (macro-& microscopic), chromatographic, microbial load and toxic metal analysis etc. Additionally, trainees will be benefitted by following features of the program-

- Integrated course curriculum-more practical (70%) than theory (30%) session
- Hands-on practical exposure advanced analytical instrumentation used for herbal drug standardization
- Real-time solution and troubleshooting
- Model SOP development for herbal product analysis
- Smart teaching methodology- lectures, assisted with models and multimedia aids.
- Additional inputs on research methodology of herbal drug development
- Interactive session.
- Guest lectures by experts

Evaluation of Students: Trainees would be allowed to perform analysis of selected medicinal plant and herbal/*Ayurvedic* product after undertaking ten days training. Evaluation will consist of the following components:

- Theory Courses
 - Continuous assessment through class assignments (10%)
 - Quiz & Q/A (30%)
- Hands-on Courses
 - Advanced analytical instrumentation (30%)
 - Project assignment (30%)

Certification: Advanced Training Certificate to the successful candidates will be awarded by CSIR-CIMAP.



For further information please contact :

Director,

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