SHREE RAMCHANDRA VAIDYA AYURVEDIC MEDICAL COLLEGE & HOSPITAL

Department of Rasashastra & Bhaishajya Kalpana

Quality Control Laboratory Documentation

---

1. INTRODUCTION AND OVERVIEW

The Department of Rasashastra & Bhaishajya Kalpana (RSBK) is a specialized pharmaceutical branch of Ayurveda dedicated to the processing and transformation of raw, natural elements into safe, standardized, and potent therapeutic formulations.

The Quality Control Laboratory forms an integral part of the department, specializing in the scientific standardization of both raw materials and finished products across **Herbal, Herbo-mineral, and Metallic** categories. The facility conducts rigorous research and analytical testing to ensure optimal safety, therapeutic efficacy, and reproducibility of traditional Ayurvedic formulations.

The laboratory is fully equipped to support academic instruction, hands-on practical training, and research exposure for undergraduate (UG) students as well as faculty members. It enables scholars to master core concepts including:

- Standardization protocols for traditional formulations
- In-house Quality Control (QC) methodologies and parameters
- Good Manufacturing Practices (GMP) adherence
- Shelf-life estimation and stability studies of Ayurvedic drugs

In addition, the laboratory extends auxiliary standardization services for raw materials and finished products in close conjunction with the Department of Dravyaguna (Pharmacognosy Laboratory) utilizing extensive physicochemical analysis and organoleptic testing profiles.

2. INFRASTRUCTURE & FACILITIES

The institution boasts a well-structured Quality Control layout carefully segmented for practical training, academic teaching, and research. The facility features:

1. A spacious, well-ventilated laboratory room designed for safety and procedural flow.
2. Advanced teaching and clinical demonstration apparatus.
3. A dedicated departmental museum maintaining extensive reference specimens:
    - Authentic herbal raw materials
    - Metals, minerals, and marine source specimens

- **Finished product models manufactured during class practicals**

4. A secure Pharmacy Raw Material and Finished Product Store.
5. A structured Department Office for administrative records.
6. A departmental library stocked with classical texts, contemporary books on standardization, analytical chemistry, Quality Control, and pharmaceutics.
7. Computing systems equipped with high-speed internet connectivity.
8. Designated storage facilities for large-scale manufacturing equipment within the main pharmacy section.
9. A specialized, separate Analytical Instrument Storage area located within the QC Lab enclosure.
10. An expansive institutional Herbal Garden utilized for live teaching, field training, and botanical identification of medicinal plants.

3. INSTRUMENTS & APPARATUS FOR QUALITY CONTROL

The laboratory houses a robust inventory of instruments and specialized hardware essential for verifying the pharmaceutical benchmarks of raw inputs and finished batches:

S.No. & Equipment / Instrument	S.No. & Equipment / Instrument
1. Simple Microscope	**9.** Pestle & Mortar (Various Sizes)
2. Digital pH Meter	**10.** Electric Muffle Furnace
3. Heating Plate & Heating Mantle	**11.** Extraction Apparatus (Soxhlet assembly)
4. Desiccator	**12.** Hot Air Oven
5. Measuring Equipment (Volumetric/Graduated)	**13.** Incubator
6. Friability Test Apparatus	**14.** Centrifuge
7. Ball Mill	**15.** Refractometer
8. Digital Weighing Machine	

4. PRACTICAL RESEARCH & TRAINING FACILITY

1. **Practical Training:** Delivery of rigorous, hands-on student execution of manufacturing protocols and processing of raw inputs in perfect alignment with the Standard Operative Procedures (SOPs) detailed in the Ayurvedic Pharmacopoeia of India (API).
2. **Physicochemical Analysis:** Scientific evaluation of sample batches covering critical identity, purity, and strength parameters.

3. **Stability Studies:** Methodical tracking, documentation, and evaluation of shelf-life parameters under varied atmospheric baselines.
4. **Record Keeping:** Structured training on industrial regulatory compliance through meticulous compilation of Raw Material and Finished Product logs.
5. **Educational Charts:** Continuous synthesis of educational charts, diagnostic diagrams, and reference specimen archives.
6. **Research Guidance:** Technical mentorship and infrastructural support for undergraduate research projects, independent studies, and dissertation works.
7. **Interdisciplinary Research:** Active institutional participation in joint analytical studies across allied medical, botanical, and chemical streams.

5. ACADEMIC ACTIVITIES CONDUCTED IN THE LABORATORY

1. Execution of scheduled departmental practical classes and specialized laboratory demonstrations.
2. Interactive specimen identification counters and macroscopic/microscopic spotters.
3. Periodic internal performance assessments, practical class tests, and official Viva-Voce examinations.
4. Coordinated academic field excursions to:
    - Regional and national Herbal Gardens / Arks
    - GMP-certified Industrial Pharmacies and production units
    - Government-approved Scientific Drug Testing Laboratories


फार्मेसी