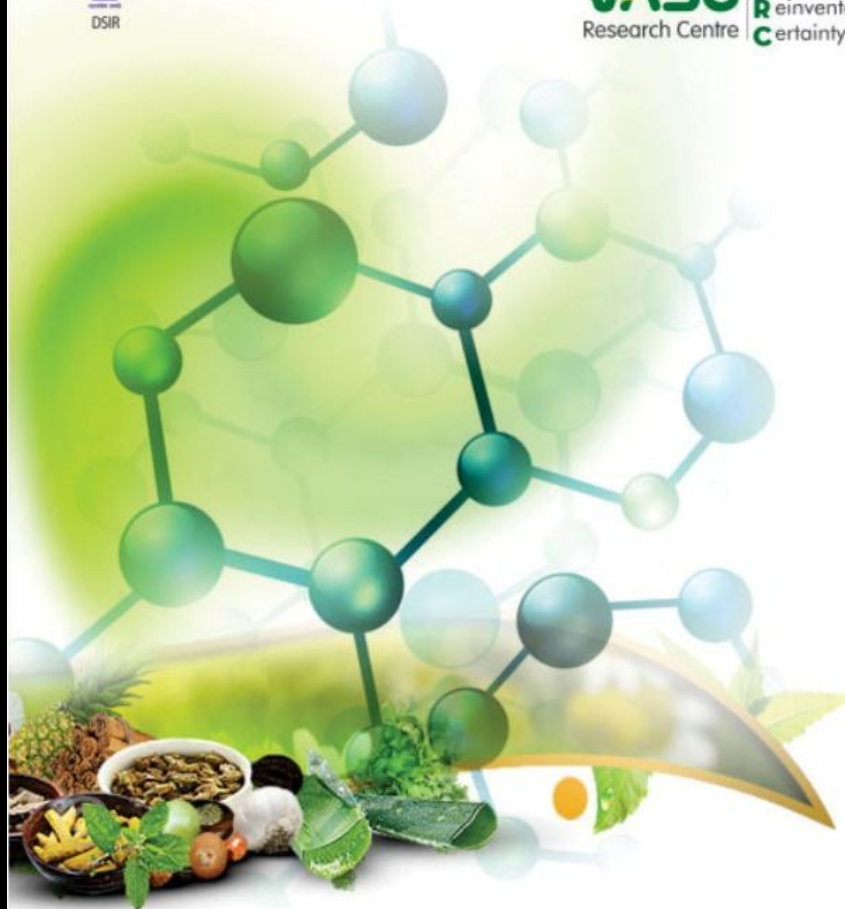




VASU Values
Research Centre Re-invented with
Certainty



**INNOVATING ANCIENT SCIENCE OF
AYURVEDA IN A MODERN & MORE POTENT FORM**

VASU Research Centre

VRC - the R&D division of Vasu Healthcare focuses on various research areas like - Herbal and Ayurvedic Pharmaceutical, Phyto-chemical, Cosmeceutical, Analytical, Clinical, Nutraceutical research and development.

VRC is a **DSIR** recognized Research Centre. The core strength of **VRC** lies in its highly skilled & experienced professionals, proficient in taking various initiatives in Ayurvedic Pharmaceutical Research through modern scientific tools without diluting the principles of Ayurveda. Our team of eminent scientists is continuously striving to satisfy customer needs with respect to delivery and quality reliability and constantly meeting customer expectations through continuous improvement.

At **VRC** our mission is to provide standardized, biologically active and safe natural therapeutics for challenging diseases.

VRC conducts rigorous trials of new products before execution of industrial production. It is also involved in standardizing manufacturing processes. **VRC** is spread across 5616 sq ft area of Vasu Healthcare Pvt. Ltd. and facilitated with fully sophisticated instruments and computerized data management system.

VRC Setup

- ↘ **Formulation & Development Lab**
- ↘ **Pharmacognosy lab**
- ↘ **Phyto-chemical Lab**
- ↘ **Analytical Lab**
- ↘ **Instrumentation Lab**
- ↘ **Microbiology lab**
- ↘ **Stability Room**

The Instrumentation Laboratory possesses the most sophisticated instrumental outfit viz.



HPLC (Shimadzu)



GC (Shimadzu)



AAS (Shimadzu)



HPTLC (CAMAG)

VRC's Basic Steps For Standardization and Evaluation

- ✓ Identification of business segment
- ✓ Project feasibility Study
- ✓ Systematic literature review.
- ✓ Survey of current market trends
- ✓ Preparation of project cost
- ✓ To study business potential – Growth rate
- ✓ Identifying potential active ingredients (Raw materials)
- ✓ Selection of appropriate route & dosage form
- ✓ Optimizing the strength of each active ingredient
- ✓ Development of extraction procedure
- ✓ Development of specifications for Active & Inactive ingredients (Raw materials)
- ✓ Optimizing composition of the formulation through
 - ✓ Toxicity study
 - ✓ Efficacy study
 - ✓ Clinical trial
- ✓ Formulation finalization
- ✓ Process validation
- ✓ Stability and shelf life study
- ✓ Specification development for Finished product
- ✓ Testing process validation
- ✓ Dossier preparation & product registration (Both Domestic & Export)
- ✓ Technology transfer

Quality Control Parameters

All raw materials at Vasu are checked for quality and authenticity by using macroscopic, microscopic, physico-chemical and active constituent analysis.

For Raw Materials:

To check the quality of the raw materials following parameters are essential,

- ✓ Moisture content
- ✓ Ash value
- ✓ Water soluble extractive value
- ✓ pH
- ✓ Assay for major active constituent
- ✓ Microbial analysis
- ✓ Heavy metal analysis and many more...

For Finished Product:

To check the quality of the finished product (Selection of parameters depends on dosage form).

Example:

For Herbal oil we carry out viscosity, specific gravity, acid value, rancidity test, peroxide value and optical rotation, etc...

For Capsule: Moisture content, Weight variation, Disintegration time, Dissolution test, pH etc...

Analysis of Active Constituent

- ✓ Qualitative analysis by TLC/UV/HPTLC
- ✓ Quantitative Analysis by Gravimetric, Titrimetric, UV Spectroscopic, HPTLC, HPLC, GC

Thin Layer Chromatography (TLC)

Thin layer chromatography (TLC) is a chromatographic technique used to separate the components of a mixture using a thin stationary phase supported by an inert backing. TLC is an analytical tool widely used because of its simplicity, relative low cost, high sensitivity and speed of separation. It can be useful for qualitative evaluation of raw materials and finished product.

High Performance Thin Layer Chromatography (HPTLC)

It is a highly sophisticated technique of TLC. HPTLC has emerged as an important tool for the qualitative and quantitative phyto-chemical analysis of herbal raw materials and formulations.

High performance Liquid Chromatography (HPLC)

This chromatography technique also helps us to quantify the active components like HPTLC but it is the close system. It can be useful for quantification of active phyto-constituents from raw materials and finished products.

Gas Chromatography (GC)

GC is used to quantify oil compounds using inert carrier gas as a stationary phase. Some of our Ayurvedic herbs having presence of volatile compounds which cannot be evaluated by another means can be analyzed by GC.

Example: Quantification of Menthol in Pudina extract

Efficacy Study

Standardization of Ayurvedic / herbal products cannot be adequately done by only chemical or physical analysis, efficacy aspect of the drug is also very important. It can be done through following means with collaboration of different institute / university / CRO's.

- ✓ Anti-microbial activity (In-vitro)
- ✓ Pre-clinical study (In-vitro & In-vivo)
- ✓ Clinical study

Major achievements of VRC

- ✓ Recognized by DSIR (Department of Science & Industrial Research)
- ✓ Received MSME National Award – 2008 for outstanding Research & Development
- ✓ Received MSME National Award – 2010 for Innovation in technology for new product and process
- ✓ Filed product and process patent for proprietary Ayurvedic drugs
- ✓ Published various research papers in national & international journals
- ✓ Industrial – academic collaboration with reputed universities / institutes in India

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