

5. Ongoing and completed research projects

S. No.	Allocated programme/project	Annual target	Target achieved	Remarks
CLINICAL RESEARCH PROGRAMMES UNDER IMR/ANNUAL ACTION PLAN				
1.	Clinical Evaluation of Lashunadi vati and Pippalyadyasava in the management of Agnimandya - A Randomized parallel group study	110 cases	Target Achieved with in stipulated time.	Final report and U.C. is in process.
2.	Clinical Evaluation of Gokshuradi Guggulu and Nimbadi Churna in Vaatrakta (Gout).	55 cases	Target Achieved with in stipulated time.	Final report and U.C. has submitted.
PHARMACOVIGILANCE RESEARCH PROJECTS UNDER IMR				
3	Knowledge, Attitude and Practice towards Pharmacovigilance of Ayurvedic Medicines among Registered Ayurvedic Medical Practitioners of the Respective States - A Multicentre Study.	410 Participants	220 Participants Enrolled.	Project is ongoing
4	“Health seeking behaviour of the patients attending the Out-Patient Department of selected CCRAS Institutes with history of consuming OTC Medicines: A Cross - Sectional study.”	410 Participants	10 Pretest Data Completed.	Project is ongoing
COLLABORATIVE RESEARCH PROGRAMMES				
5	Prospective, randomized, open label, blinded end points exploratory clinical study to evaluate the efficacy and safety of Ayurvedic regimen as an adjunct to hydroxyurea in the management of sickle cell disease.	100 cases	Target achieved but project is ongoing	RARI,Gwalior & AIIMS,Bhopal
6	Clinical Study on treatment tolerability, medication adherence and safety of Ayurvedic formulations in the management of Dyslipidemia	480 Participants	Target achieved and follow up will be completed on 20 April 2025, hence project is ongoing	SDACH, Chandigarh, DBACH, Mandi Gobindgarh, GAACH, Rewa, DDYPCARC, Pune & RARI Gwalior
7	General health screening with special focus on selected disease conditions (Tuberculosis, Anemia, Sickle Cell Disease & Malnutrition)	Screening of all Students of EMRS, Bhopal & EMRS, Guna	Yes. Screened 319 students at EMRS, Bhopal and enrolled 97 patients in the Project. Screened 252	Study sites are EMRS, Bhopal & EMRS, Guna

	and Ayurveda management of Anemia & Malnutrition in students of Ekalavya Model Residential Schools (EMRS)		students at EMRS, Guna and enrolled 86 students.	
LITERARY RESEARCH				
1	"Bibliometric analysis of the publications on Research in Ayurveda for prevention and management of Covid-19"	to bibliometrically analyze all the publications related to ayurveda research for the prevention and management of covid 19	project completed	
OUTREACH ACTIVITY PROGRAMS				
1	AMHCP(SCSP)	200 Tours, 480 population survey, 3000-3215 OPD patients ,28 Focus Camps	Target achieved. 201 Tours conducted, 490 population survey done, 5106 Total patients (4196 new patients) treated and total 8493 Investigations done. Total 39 Focus camps and 78 Awareness lectures delivered.	Annual report under preparation and final SoE to be sent to the Headquarter office
	Acceptability of the comprehensive Ayurveda-based health care approach in the community and effectiveness of individualized health care - Cluster randomized study. Under AMHCP(SCSP)	480 Participants under CABHA and 30 Families under IAHA	Target achieved. 490 participants enrolled and 487 participants completed the study under CABHA and 30 families (with 101 participants) enrolled under IAHA out of them 29 families (with 99 participants) completed the study.	Final report under preparation.
2	THCRP-TSP	200 Tours, 520 population survey, 3000-3215 patients, 28 Focused Camps and 8 LHT collection	200 Tours conducted, 520 population surveyed, 8059 patients (5869 new patients) treated, total 7224 Investigations done, 36 focused Camps organized and 11 LHT collected.	Annual report under preparation, LHT format and SoE sent to the Headquarter office
	Assessment of acceptability of the comprehensive Ayurveda-based health	520 Participants under CABHA and 30 Families under IAHA	Target achieved. 520 participants enrolled and 511 participants	Final report under preparation.

	care approach in the tribal community and effectiveness of individualized health care - Cluster randomized study under THCRP-TSP		completed the study under CABHA and 30 families (with 100 participants) enrolled under IAHA out of them 29 families (with 95 participants) completed the study	
ETHNO MEDICO BOTANICAL SURVEY & PHARMACOGNOSY				
S. No	Allocated program/projects	Annual Target	Target achieved	Remarks
1	Macroscopic and microscopic atlas preparation of selected plants of Ayurvedic importance	Atlas preparation for 68 plants in 1/2 batches in 3 years	Achieved	Ongoing
2	Development of Quality Standards for Useful Parts of Selected Medicinal Plants of Ayurveda	Monograph preparation for 10 plants in 3/4 batches in 2 years	Achieved	Ongoing
3	Development of Quality Standards of Selected Extra Pharmacopoeial (Anukta Dravya) Drugs used in Local Health Traditions collected from different regions of India	Monograph preparation for 10 plants in 3/4 batches in 2 years	Technical work is complete for received samples	Tenure completed.
PHARMACOLOGY				
S. No	Allocated program/projects	Annual Target	Target achieved	Remarks
1	Effect of Gokshuradi Guggulu on Experimental Diabetic Nephropathy: In vitro and In vivo Studies	Submission of final report	The data has been forwarded to the PI for drafting of the final report	Final report is awaited from the PI
2	Formulation of Drug Master File and Dossier for Picrorhiza kurroa, an important promising medicinal plant from Ayurveda and Contemporary Research	Safety pharmacology studies	All the studies have been completed. Data analysis, compilation, and report preparation are in progress.	Sanctioned under the Chemistry section of CARI, Jhansi
4	Formulation of drug master file and dossier for Withania somnifera Dunal, a promising medicinal plant from Ayurveda and contemporary research	Anti-insomnia activity, chemotherapy-induced anorexia, Aβ25-35-induced memory impairment	Pharmacology studies are completed. Histopathology examination, data analysis, and report preparation are in progress	Sanctioned under the Chemistry section of RARI, Gwalior
5	Comparative phytochemical and pharmacological evaluation of small branches with root/stem	Comparative chronic anti-inflammatory activity, analgesic activity, effect on loperamide-induced	Effect on loperamide-induced constipation is in progress;	Sanctioned under the Chemistry section of RARI, Gwalior

	bark of selected Ayurvedic plants	constipation, AlCl ₃ -induced memory impairment	remaining studies are completed, and histopathology examination, and data analysis are in progress	
6	Acute and 90-day oral toxicity study of AYUSH Bal Ghutti granules in experimental animals	Acute and sub-acute oral toxicity studies	In life phase has been completed.	Histopathology is about to be initiated
7	Acute and 180-day oral toxicity study of AYUSH Bal Rasayan in experimental animals	Acute and sub-acute oral toxicity studies	In life phase has been completed.	Histopathology is about to be initiated
8	Toxicity profiling of Mrityunjaya Rasa in experimental animals	GLP studies will be conducted at IITR, Lucknow	Acute oral, acute dermal, sub-acute, oral, and genotoxicity by Ames test has been completed. Chronic toxicity is in progress	Collaboration with IITR, Lucknow
9	Assessment of AYUSH-64 and Ayush Kwath to SARS-CoV-2 mutants on lung, liver and brain cells	Studies will be conducted at IIT, Indore	Studies are in progress at IIT, Indore	Collaboration with IIT, Indore
10	Evaluation of Intranasal Vacha (Rhizomes of Acorus calamus) in rodent model of stroke” – Approved by ICMR under ICMR Adhoc scheme	Safety pharmacology, pharmacology, and molecular mechanistic studies	Safety pharmacology and pharmacology studies are completed. Protein expression studies and histopathology examination are in progress	Sanctioned under ICMR Adhoc scheme. Extensions requested for 6 months
11	Assessment on the role of Coded Drug AYUSH PJ-7 and other Plants-Based Molecules/Drugs against matrix metalloproteinases-mediated immunopathogenesis of Dengue viral disease and establishment of their mechanisms of actions	Invitro studies	standardization of protocols completed	Collaboration with ICMR-NIRTH, Jabalpur

CHEMISTRY SECTION

S. No	Allocated program/projects	Annual Target	Target achieved	Remarks
1	IMR project entitled “Development of drug master file and dossier on roots of Withania somnifera, an important promising medical plant based on leads from	Procurement of Stereotaxic apparatus, consumables, raw drugs, phytochemical marker and chemicals. Physiochemical analysis HPLC method	Target Achieved	Project Ongoing

	Ayurveda and contemporary research”.	developments Histopathology study		
2	IMR project entitled “Comparative phytochemical and pharmacological evaluation of small branches with root stem bark of selective Ayurvedic plants”.	Procurement of phytochemical markers and animals is completed. HPTLC & HPLC analysis is completed. Chronic anti-inflammatory activity is completed. A loperamide-induced constipation study is completed AlCl ₃ induced memory impairment study is completed	Target Achieved	Project Ongoing
3	IMR project entitled “Development of SOP & Quality Control Parameters and Shelf-life studies of AYUSH-RP, AYUSH-AG, and AYUSH-GG Formulations”.	Physico-chemical analysis upto Q5 Microbial contamination test upto Q5 Heavy metal analysis and aflatoxin analysis upto Q5 HPTLC analysis of formulation and its ingredients for Q1 to Q4 HPLC Quantification of formulation and its ingredients has been completed	Target Achieved	Project Ongoing
4	IMR project entitled “In-Silico study of Botanicals (Rudraksha, Gorakhamundi, Jyotishmati, Petha, Vacha, Gambhari and Shatavari) used in Ayurveda for Neurocognitive enhancement”.	Phytochemical, physicochemical, ADMET, network pharmacological, molecular docking, MD simulation studies of 04 plants	Target Achieved	Project Ongoing
5	IMR project entitled “Comprehensive QC analysis, Estimation of Marker, Nutritional profiling and Shelf-life studies of AYUSH POSHAK YOG.”.	Procurement of raw drug, chemicals & solvents, drug formulation Physico-chemical parameters for Q2-Q4 Microbial contamination test and aflatoxin analysis for Q2-Q4 Pesticide contamination test for Q2-Q4 Heavy metal analysis and Nutritional	Target Achieved	Project Completed (Data compilation under process)

		parameter has been done. HPLC Quantification has been completed. HPTLC analysis has been done. GC-MS analysis has been completed		
6	IMR project entitled “Pharmaceutical standardization SOP Development and comprehensive phytochemical profiling of selected Ayolepa Rasayana Kalpana”.	Procurement of raw samples from different Locations Physicochemical analysis of Raw Sample and 14 Formulation. Pharmacognostic evaluation of raw samples. Analysis of Microbial and Pathogen Contamination of raw samples and 14 formulations. Quantification of Iron content using AAS in raw samples and formulations Preparation of 4 Formulation is under progress.	Target Achieved	Project Ongoing
7	Collaborative project with IIT Indore entitled "Assessment of AYUSH-64 and Ayush Kwath to SARS-CoV-2 mutants on lung, liver and brain cells”.	Quality standardization and chemical profiling of the formulations Ayush 64 and Ayush Kwath ingredients using HPTLC , HPLC ,GCMS. Identification and quantification of biomarker compounds (PRS/Markers) in Ayush 64 and Ayush Kwath ingredients. Insilco analysis of Ayush 64 and Ayush Kwath and their ingredients with SARS-CoV-2 proteins host factor.	Target Achieved	Project Ongoing
BIO-CHEMISTRY				
S. No	Allocated program/projects	Annual Target	Target achieved	Remarks
1	Study of coded drugs intended for antenatal care i.e., AYUSH GG and AYUSH AG for their developmental toxicity and	Evaluation of developmental toxicity and teratogenicity of the study drugs	All the experiments have been completed. Draft of final report is under preparation.	Project tenure ended on 30th September 2024.

	teratogenicity profiles in zebrafish embryo model			
2	Study of selected Ayurvedic herbs for their anti-angiogenic potential and toxicity profile in zebrafish embryo model for cancer management	Procurement of consumables and instruments, recruitment of SRF, Procurement of study drugs and Zebrafish maintenance.	Procurement of zebrafish housing system, procurement of plant extracts, acute toxicity of Deodar, Berberis, Picorrhiza, etc. and optimization of EAP staining protocol using NBT/BCIP method.	Project started on 23.10.2024.

Projects Ongoing during 2024-25:		
Sl no.	Title	Summary
CLINICAL		
1.	"General health screening with special focus on Tuberculosis, Anemia, Haemoglobinopathies & Malnutrition and Ayurvedic Interventions for better health outcomes in Students of Ekalavya Residential Model Schools (EMRS) functioning under M/o Tribal Affairs"	Monthly health check-ups and medical support were provided at both schools. In EMRS Bhopal, 319 students were screened from 13th–19th Feb 2025, with 97 enrolled. In EMRS Guna, 252 students were screened from 4th–9th Mar 2025, with 86 enrolled. First follow-up visits were completed in March 2025. Screening targets were met, and the project is ongoing.
2.	Clinical Evaluation of Lashunadi vati and Pippalyadyasava in the management of Agnimandya - A Randomized parallel group study	Target of 110 patients, all patients have completed. Target achieved with in stipulated time.
3.	Prospective, randomized, open label, blinded end points exploratory clinical study to evaluate the efficacy and safety of Ayurvedic regimen as an adjunct to hydroxyurea in the management of sickle cell disease.	Target achieved. 100 patients enrolled at trial site AIIMS, Bhopal. Project is ongoing.
4.	Clinical Study on treatment tolerability, medication adherence and safety of Ayurvedic formulations in the management of Dyslipidemia- SMART Collaborative Research Program	Target: 480 participants (120 at each 4 Collaborative centre) in two years. Target achieved. 786 participants screened, 480 enrolled, 387 completed, 49 drop out and 44 continuing the study.
PHARMACOLOGY		
1.	Effect of Gokshuradi Guggulu on Experimental Diabetic Nephropathy	The study was completed in 2022 and the data has been forwarded to the Principal Investigator (PI) for drafting the final report, which is currently awaited.
2.	Formulation of Drug Master File and Dossier for Picrorhiza kurroa, an important promising medicinal plant from Ayurveda and Contemporary Research	Safety pharmacology and anti-obesity studies have been completed, and preparation of the final report is in progress. This project is sanctioned under the Chemistry section of CARI, Jhansi.
3.	Formulation of Drug Master File and Dossier for Withania somnifera Dunal, an important promising medicinal plant from Ayurveda and Contemporary Research	Alzheimer's and insomnia studies have been completed, while histopathological examination, data analysis, and report preparation are ongoing. This study is sanctioned under the Chemistry section of RARI, Gwalior.

4.	Comparative Phytochemical and Pharmacological Evaluation of Small Branches with Root/Stem Bark of Selected Ayurvedic Plants	Memory impairment, Alzheimer's studies have been completed, except for the constipation model, which is still in progress. Histopathological analysis and data processing are currently underway. This project is sanctioned under the Chemistry section of RARI, Gwalior.
5.	Acute and 90-day Oral Toxicity Study of AYUSH Bal Ghutti Granules in Experimental Animals	In-life phase of both acute and sub-acute toxicity evaluations has been completed. The histopathological examination phase is about to begin.
6.	Acute and 180-day Oral Toxicity Study of AYUSH Bal Rasayan in Experimental Animals	The in-life phase has been completed, and the histopathology assessment is scheduled to commence shortly.
7.	Toxicity Profiling of Mrityunjaya Rasa in Experimental Animal	Acute oral, acute dermal, sub-acute oral toxicity and genotoxicity evaluation through the Ames test have been completed, while chronic toxicity study is still ongoing. This study is being conducted in collaboration with IITR, Lucknow under GLP conditions.
8.	Assessment of AYUSH-64 and Ayush Kwath on SARS-CoV-2 Mutants in Lung, Liver, and Brain Cells	The pharmacological and mechanistic evaluation studies are currently in progress under this collaborative study conducted at IIT, Indore.
9.	Evaluation of Intranasal Vacha (Rhizomes of Acorus calamus) in a Rodent Model of Stroke	Safety pharmacology and pharmacology studies have been completed. Protein expression studies and histopathological evaluations are in progress, and an extension of six months has been requested for project completion.
10.	Assessment on the role of Coded Drug AYUSH PJ-7 and other Plants-Based Molecules/Drugs against matrix metalloproteinases-mediated immunopathogenesis of Dengue viral disease and establishment of their mechanisms of actions	The standardisation of protocols is completed. This study is being conducted in collaboration with ICMR-NIRTH, Jabalpur
11.	Study of selected Ayurvedic herbs for their anti-angiogenic potential and toxicity profile in zebrafish embryo model for cancer management	Procurement of zebrafish housing system, procurement of plant extracts, acute toxicity of some of the extracts and optimization of EAP staining protocol using NBT/BCIP method.

PHARMACOGNOSY		
1.	Macroscopic and microscopic atlas preparation of selected plants of Ayurvedic importance.	A total of 68 plants were proposed to be studied in two batches in the project. Out of 68, samples of 16 plants were received/collected this year. The remaining work of the project is in progress.
2.	Development of Quality Standards for Useful Parts of Selected Medicinal Plants of Ayurveda.	The project was initiated this year and a total of ten plants were proposed to be studied in three batches collected from different geographical locations. Out of ten plants (30 samples), 11 samples of 06 plants were studied for botanical, pharmacognostical and chemical parameters. The remaining work of the project is in progress.
3.	Development and digitization of authentic ayurvedic raw drugs and herbarium for the medicinal plants appearing in AFI in mandatory drug testing laboratories of CCRAS with CSMCARI, Chennai. (Co-I)	The work is in progress as per the project objectives. Few raw drugs were supplied to the institute and received samples along with the passport data are being maintained in the Museum.
4.	Evaluation of Seasonal and Geographical Variation on Phytoconstituents/Marker Compounds in Selected Ayurvedic Medicinal Plants with CSMCARI, Chennai. (Co-I)	The work is in progress as per the project objectives. Raw drugs and soil samples are being supplied in different seasons.
5.	Process validation and standardization of Pippalyadi taila, Vachadi taila and Bhringamalakadi taila formulation in AFI with CARI, Patiala. (Co-I)	The work is in progress as per the project objectives. Pharmacognostic work is in progress for supplied samples.
6.	Development of Quality Standards of Botanicals used in Ayurveda grown in Mauritius. (Project Team)	The project is being carried out at CCRAS Headquarters and pharmacognostic work has been allotted to the laboratory. Technical work was carried out as per instructions and draft monographs were submitted to Headquarters. Revisions as per comments are in progress.
7.	Development of quality standards, estimation of markers and accelerated shelf life studies of Guducyadi Caturbhadra and Amrtottara kvatha churna formulations with CSMCARI, Chennai. (Co-I)	The work is in progress as per the project objectives. Pharmacognostic work was done for 06 supplied samples and report has been sent, while the same is in progress for next 06 samples.

PHYTOCHEMISTRY & DRUG STANDARDISATION		
1.	Formulation of Drug master file and dossier for roots of Withania somnifera an important promising medicinal plant from Ayurveda and contemporary research.	Physicochemical analysis and HPLC analysis for alcohol and water soluble extractives have been completed. In-life phase of 90-day oral toxicity and histopathology study has been completed. Insomnia and Alzheimer's studies are under progress.
2.	Comparative phytochemical and pharmacological evaluation of small branches with root or stem barks of selective ayurvedic plants	HPTLC of phytochemical markers and quantification by HPLC have been completed. In-life phase of Anti-inflammatory and anti-obesity activities been completed. A loperamide-induced constipation and AlCl ₃ -induced memory impairment study is completed. Insomnia, Alzheimer's, Histopathology and biochemical assay are under progress.
3.	Assessment of AYUSH-64 and Ayush Kwath to SARS-CoV-2 mutants on lung, liver and brain cells	HPLC, HPTLC, LC-MS/MS and In-silico study was completed for AYUSH-64 and Ayush Kwath, along with its ingredients. Protein level analysis and Transcript level analysis completed.
4.	Development of SOP & Quality Control Parameters and Shelf-life studies of AYUSH-RP, AYUSH-AG, and AYUSH-GG Formulations	Physicochemical Analysis, Biological contamination, Pesticide, heavy metal testing & Aflatoxin contaminations have been completed for 04 quarters. Quantification of markers by HPLC and HPTLC is in progress.
5.	In-Silico study of Botanicals (Rudraksha, Gorakhamundi, Jyotishmati, Petha, Vacha, Gambhari and Shatavari) used in Ayurveda for Neurocognitive enhancement.	Phytochemical and physicochemical analysis of 04 plants completed. ADMET, Network pharmacology and molecular docking study on 04 plants completed. Molecular Dynamic simulation study on 02 plants completed.
6.	Pharmaceutical Standardization, SOP Development and Comprehensive Phytochemical Profiling of selected Ayolepa Rasayana Kalpana.	Phytochemical and physicochemical analysis of 24 raw drugs and 14 formulations completed. FTIR, and XRD analysis of 24 raw drugs and 14 formulations completed. AAS analysis of Pb, Hg, As, Cd and Fe of 24 raw drugs and 14 formulations is under process.