

**GOVERNMENT OF INDIA
MINISTRY OF AYUSH
LOK SABHA
UNSTARRED QUESTION NO. 716
TO BE ANSWERED ON 26.07.2024**

‘Research on Medicinal Plants’

716. Dr. Jayanta Kumar Roy:

Shri Matheswaran V S:

Will the Minister of Ayush be pleased to state:

- (a) whether the Government has established/proposes to establish any research centres to promote research and development on medicinal plants in the country including North West Bengal;
- (b) if so, the details of thereof, State/UT-wise along with the details of ongoing projects pertaining to medicinal plants and if not, the reason therefor;
- (c) whether the Government has conducted any survey regarding availability of medicinal plants in the Kolli Hills region of Namakkal district of Tamil Nadu and if so, the details thereof;
- (d) whether the Government has any plan to set up Herbarium and Museum based on medicinal plants at Kolli Hills region of Namakkal district of Tamil Nadu and if so, the details thereof?

ANSWER

**MINISTER OF STATE (INDEPENDENT CHARGE) MINISTRY OF AYUSH
(SHRI PRATAPRAO JADHAV)**

Ans. (a & b): Yes Sir, Presently, various Research Institutes/Centres/Units of different Research Councils under the Ministry of Ayush, Government of India, viz. Central Council for Research in Ayurvedic Sciences (CCRAS), Central Council for Research in Unani Medicine (CCRUM), Central Council for Research in Homoeopathy (CCRH), Central Council for Research in Siddha (CCRS), North Eastern Institute of Ayurveda & Folk Medicine Research (NEIAFMR) and the National Institute of Sowa Rigpa (NISR), have been established and engaged in the area of medicinal plant research across the country. State/UT-wise details of the Institutes/Centres are appended in **Annexure-I**.

Further, various national institutes under the Ministry of Ayush, viz. All India Institute of Ayurveda (AIIA), New Delhi; National Institute of Ayurveda (NIA), Jaipur; National Institute of Unani Medicine (NIUM), Bangalore; National Institute of Siddha (NIS), Chennai; Institute of Teaching and Research in Ayurveda, (ITRA), Institute of National

Importance (INI), Jamnagar and North Eastern Institute of Ayurveda and Homoeopathy (NEIAH), Shillong are the apex institutes, also involved in academic research activities related to medicinal plants in the concerned systems of medicines across the country.

In addition, the constituent laboratory of the Council of Scientific & Industrial Research (CSIR) is a frontier organization working on medicinal plant research through its various laboratories/centres across the country. State/UT-wise details are placed in **Annexure-II**.

Further, the Indian Council of Medical Research (ICMR), through its National Institute of Traditional Medicine (NITM), Belagavi, Karnataka, conduct research on Traditional Medicine; the Institute is working on documentation and validation (in silico, in vitro, in vivo and clinical evaluation) of various selected medicinal plants.

Besides, the Directorate of Medicinal and Aromatic Plants Research (DMAPR), Anand, Gujarat, under the Indian Council for Agricultural Research (ICAR), conducts basic, applied and adaptive research on medicinal plants.

The details of ongoing projects pertaining to medicinal plants in the different Research Councils of the Ministry of Ayush and other Ministries throughout the country, including North West Bengal, are appended in **Annexure-III**.

In addition, the National Medicinal Plants Board (NMPB), Ministry of Ayush, under its Central Sector Scheme (CSS) on 'Conservation, Development and Sustainable Management of Medicinal Plants' provides project-based financial support to carry out research activities on various aspects of medicinal plants to Government as well as private universities/research institutions/organizations across the country. Details of the ongoing projects supported throughout the country, including North West Bengal, are appended in **Annexure IV**.

Ans. (c): Yes Sir, the Central Council for Research in Unani Medicine (CCRUM) and Central Council for Research in Siddha (CCRS) under the Ministry of Ayush has conducted a series of surveys regarding the availability of medicinal plants in the Kolli Hills region of Namakkal district of Tamil Nadu. The details of the area surveyed in the Kolli Hills region of Namakkal district are appended in **Annexure-V**

Ans. (d): No Sir, however presently, the NMPB, Ministry of Ayush has supported the Regional Raw Drug Repository (RRDR-Southern Plateau Region) in respect of raw drugs being used in the ASU&H systems of medicine under the Central Sector Scheme at National Institute of Siddha (NIS), Chennai as lead institute along with Siddha Central Research Institute (SCRI) of Central Council for Research in Siddha (CCRS) and Regional Research Institute of Unani Medicine (RRIUM), Chennai as other two collaborating Institute. The repository will serve as a one-stop library for raw drugs available in the Southern part of the country and act as an accredited reference library (Herbarium, Raw Drug Museum etc.) to authenticate raw drugs.

Annexure-I**A. State / UT-wise details of Research Institute / Centre / Unit under Central Council for Research in Ayurvedic Sciences (CCRAS) involved in medicinal plant research:**

S.No.	State/UT	Name of Institute/Centre
1.	Andaman & Nicobar Islands	Regional Ayurveda Research Institute, Port Blair.
2.	Arunachal Pradesh	Regional Ayurveda Research Institute, Itanagar.
3.	Assam	Central Ayurveda Research Institute, Guwahati.
4.	Himachal Pradesh	Regional Ayurveda Research Institute, Mandi.
5.	Jammu & Kashmir	Regional Ayurveda Research Institute, Jammu.
6.	Karnataka	Central Ayurveda Research Institute, Bengaluru.
7.	Kerala	National Ayurveda Research Institute for Panchakarma, Cheruthuruthy. Regional Ayurveda Research Institute, Thiruvananthapuram
8.	Madhya Pradesh	Regional Ayurveda Research Institute, Gwalior.
9.	Maharastra	Regional Ayurveda Research Institute, Pune.
10.	Nagaland	Regional Ayurveda Research Centre, Dimapur, Nagaland.
11.	Punjab	Central Ayurveda Research Institute, Patiala.
12.	Rajasthan	M.S. Regional Ayurveda Research Institute, Jaipur.
13.	Sikkim	Regional Ayurveda Research Institute, Gangtok.
14.	Tamil Nadu	Captain Srinivasa Murthy Central Ayurveda Research Institute, Chennai.
15.	Telangana	National Centre of Indian Medical Heritage, Hyderabad.
16.	Uttar Pradesh	Central Ayurveda Research Institute, Jhansi.
17.	Uttarakhand	Regional Ayurveda Research Institute, Ranikhet.
18.	West Bengal	Central Ayurveda Research Institute, Kolkata.

B. State / UT-wise details of Research Institute / Centre / Unit under Central Council for Research in Unani Medicine (CCRUM) involved in medicinal plant research:

S. No.	State/UT	Name and address of the Institute
1.	Jammu & Kashmir (UT)	Regional Research Institute of Unani Medicine, Srinagar.
2.	Odisha	Regional Research Institute of Unani Medicine, Bhadrak.
3.	Tamil Nadu	Regional Research Institute of Unani Medicine, Chennai.
4.	Telangana	National Research Institute of Unani Medicine for Skin Disorders, Hyderabad.
5.	Uttar Pradesh	Regional Research Institute of Unani Medicine, Aligarh.
6.	West Bengal	Regional Research Institute of Unani Medicine, Howrah.

C. State / UT-wise details of Research Institute / Centre / Unit under Central Council for Research in Homoeopathy (CCRH) involved in medicinal plant research:

S. No.	State/UT	Name of the Institute
1.	Tamil Nadu	Centre of Medicinal Plants Research in Homoeopathy, Ooty.
2.	West Bengal	Dr. Anjali Chatterjee Regional Research Institute of Homoeopathy, Kolkata.
3.	Uttar Pradesh	Dr. D.P. Rastogi Central Research Institute of Homoeopathy, Noida.

D. State / UT-wise details of the Research Institute / Centre / Unit under Central Council for Research in Siddha (CCRS) involved in medicinal plant research:

S. No.	State/UT	Name of the Institute
1.	Tamil Nadu	1. Siddha Medicinal Plants Garden (SMPG) at Mettur Dam, Salem.
		2. Siddha Central Research Institute, Chennai.
2.	Kerala	3. Siddha Regional Research Institute, Thiruvananthapuram.

E. State / UT-wise details of the Autonomous National Research Institute under the Ministry of Ayush, Government of India involved in medicinal plant research:

S. No.	State/UT	Name of the Institute
1.	Arunachal Pradesh	North Eastern Institute of Ayurveda & Folk Medicine Research (NEIAFMR), Pasighat.
2.	Ladakh	National Institute of Sowa Rigpa (NISR), Leh.

Annexure-II

A. State / UT-wise details of Research Institute / Centre / Unit under Council of Scientific & Industrial Research (CSIR) involved in medicinal plant research:

Sr. No	State/ UT	Name of the Institute
1.	Assam	Council of Scientific and Industrial Research (CSIR) - North East Institute of Science and Technology (NEIST), Jorhat.
2.	Himachal Pradesh	Council of Scientific and Industrial Research (CSIR)-Institute of Himalayan Bioresource Technology (IHBT), Palampur.
3.	Jammu & Kashmir	Council of Scientific and Industrial Research (CSIR)-Indian Institute Of Integrative Medicine (IIIM), Jammu.
4.	Uttar Pradesh	Council of Scientific and Industrial Research (CSIR)-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow.
5.	Andhra Pradesh	Council of Scientific and Industrial Research (CSIR)-Central Institute of Medicinal and Aromatic Plants (CIMAP) research centres, Hyderabad.
6.	Karnataka	Council of Scientific and Industrial Research (CSIR)-Central Institute of Medicinal and Aromatic Plants (CIMAP) research centres, Bangalore.
7.	Uttrakhand	Council of Scientific and Industrial Research (CSIR)-Central Institute of Medicinal and Aromatic Plants (CIMAP) research centres, Pantnagar & Purara.

Annexure-III

A. Details of ongoing projects pertaining to medicinal plants research conducting at the peripheral Institute under the Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of Ayush, Government of India, throughout the country, including North West Bengal:

S. NO	Name of the State/UT	Name of the Ongoing Project
1.	West Bengal	<ol style="list-style-type: none">1. Optimization of extraction process for the enrichment of extract with selected markers of some important Ayurvedic plants at CARI, Kolkata.2. Pharmacognostical and chemical profiling of selected Indian medicinal flowers at RARI, Jammu & CARI, Kolkata.3. Digitalization and indexing of herbarium sheets at CARI Kolkata collected from 1970-2000, CARI, Kolkata.4. Comparative pharmacognostical and phytochemical standardization of commonly adulterating Ayurvedic drugs and adulterants CARI, Kolkata.5. Development of Quality Standards of Selected Extra-pharmacopoeial Drugs (Anukta Dravyas) Used in Local Health Traditions Collected from Different Regions of India. CARI, Kolkata.
2.	Uttar Pradesh	<ol style="list-style-type: none">1. Anthology of Survey Research Outcome from Medico Ethno Botanical Survey (MEBS), CARI, Jhansi2. Plant Diversity Database of Selected Ayurvedic Medicinal Plant Species from Medicinal Plants Garden of RARI, Pune, JNU, CARI, Jhansi.3. Characterization of important Ayurvedic medicinal plants through DNA barcoding. CARI Jhansi, CARI, New Delhi.4. Identification of adulterants/substitutes for Ayurveda plant raw material in trade using pharmacognostic and phytochemical parameters. CARI, Jhansi and NBRI, Lucknow.5. A comparative study on hydroponic and field cultivated medicinal plants used in Ayurveda. CARI, Jhansi and BHU, Varanasi.
3.	Maharashtra	<ol style="list-style-type: none">1. Development of Quality Standards of Selected Extra-pharmacopoeial Drugs (Anukta Dravyas) Used in Local Health Traditions Collected from Different Regions of India. RARI, Pune.2. Mass Cultivation of Selected Economically Important Medicinal Plants at RARI, Pune.3. Investigating the Effect of Vesicular Arbuscular Mycorrhiza (VAM) on Growth, Yield, Phytochemical Contents and

		<p>Pharmacological Activities of Shalaparni and Prishniparni. RARI Pune.</p> <p>4. Establishment of In vitro propagation protocol for the conservation of Hydnocarpus pentandrus (Buch.-Ham.) Oken, a Vulnerable medicinal plant used in Ayurvedic formulations, RARI, Pune.</p> <p>5. Developing image-based taxonomical database of plants used in the Ayurveda. RARI, Pune.</p>
4.	Tamil Nadu	<p>1. Developing Quality Standards for Selected Extra-pharmacopoeial Drugs Collected from Irula tribes of Thandarai, Kancheepuram District, Tamil Nadu.</p> <p>2. Development and Digitalization of Authentic Ayurvedic Raw Drugs and Herbarium for the Medicinal Plants Appearing in Ayurvedic Formularies of India in Mandatory Drug Testing Laboratories of CCRAS, CSMCARI, Chennai.</p> <p>3. Development of Quality Standards of Selected Extra Pharmacopoeial (<i>Anukta Dravya</i>) Drugs Used in Local Health Traditions collected from different regions of India. CSMCARI, Chennai.</p>
5.	Arunachal Pradesh	<p>1. Documentation of wild edible and medicinal plants commercialized at local market in Papum Pare and lower Lower Subansiri district of Arunachal Pradesh. RARI Itanagar.</p>
6.	Uttarakhand	<p>1. Anthology of Survey Research outcomes from Medico-Ethno Botanical Survey (MEBS), RARI, Ranikhet (Uttarakhand).</p> <p>2. Mass cultivation of the selected economically important medicinal plants at RARI, Ranikhet.</p>
7.	Himachal Pradesh	<p>1. Documentation and Validation of Local Health Traditions and Ethno-Medicinal Practices in Lahul and Spiti district of Himachal Pradesh. RARI, Mandi.</p>
8.	Madhya Pradesh	<p>1. Development Of Quality Standards of Selected Extra-Pharmacopoeial Drugs (<i>AnuktDravyas</i>) Used in Local Health Traditions Collected from Different Regions of India. RARI, Gwalior.</p> <p>2. Macroscopic and microscopic atlas preparation for Ayurvedic Pharmacopeia of India Part -I, Vol-IV. RARI, Gwalior.</p> <p>3. Development of Quality Standards for Useful Parts of Selected Medicinal Plants of Ayurveda. RARI, Gwalior.</p>
9.	Sikkim	<p>1. Medico Ethno Botanical Survey in the forest areas of Darjeeling district of West Bengal". RARI, Gangtok</p>
10.	Telangana	<p>2. Comprehensive inventory of local health traditions (LHTS) & ethno medicinal practices (EMPS) in INDIA - validation through ayurvedic and ethnomedicinal literature to establish uniqueness. NIIMH, Hyderabad.</p>

11.	Jammu	1. Documentation and Validation of Local Health Traditions and Ethno medicinal practices in Sunderbani block of District Rajouri, Jammu and Kashmir. RARI Jammu.
12.	New Delhi	1. Anthology of pharmacognostical research outcomes of CCRAS on selected medicinal plants used in the Ayurveda at CCRAS hqrs, New Delhi.
13.	Karnataka	1. Comparative evaluation of field and hydroponic cultivation of selected Ayurvedic medicinal plants. CARI, Bengaluru and IIHR, Bengaluru. 2. Study of seasonal variation on bioactive compounds of Panchavalkal-05 medicinal plants used in Ayurveda. CARI, Bengaluru and UAS-B, GKVK. 3. Documentation of Traditional Food Recipes of Karnataka and their Validation with Ayurveda and Nutritional Perspective, TDU, University; CARI, Bengaluru. 4. Formulation and product development of Ayurveda recipes and nutritional evaluation of selected products, CSIR-CFTRI, Mysuru; CARI, Bengaluru.
14.	Kerala	1. In vitro propagation and genetic stability studies of Ipomoea mauritiana Jacq. -a Rare medicinal plant. NARIP, Cheruthuruthy and SNGS College, Pattambi.
15.	Andaman & Nicobar Islands	2. Standardization the cultivation and seed germination conditions of Centratherum anthelminticum (L.) Kuntze. RARI, Port Blair; ICAR-CIARI, Port Blair.

B. Details of ongoing projects pertaining to medicinal plants conducting by peripheral institutes / units of Central Council for Research in Siddha (CCRS), Chennai, Tamil Nadu:

Sr No	Name of the State/UT	Project Title
1.	Tamil Nadu	Isolation of chemical marker from selected plants used in Reproductive and Child Health.
2.	-Do-	Analysis of inorganic composition of selected plants used in Siddha system.
3.	-Do-	Metabolomic profiling and Identification of Principle Components from herbals used in Siddha System for Cognitive disorders using multivariate statistical analysis.
4.	-Do-	Development of DNA based markers for some substitute / adulterant / controversial Siddha medicinal plants
5.	-Do-	Pharmacognostic exploration of under explored medicinal plants of Tamilnadu.
6.	-Do-	Preparation of Monographs for some least studied/extra-pharmacopoeial medicinal plants in Siddha system of medicine.
7.	-Do-	Survey on the traditional and common uses of medicinal plants from

		Dharmapuri District, Tamil Nadu.
8.	-Do-	Qualitative and quantitative analysis of Lead in 'Lead containing Plants'- a scientific validation of Siddha Claim.
9.	-Do-	Qualitative and Quantitative Analysis of Chembu (copper) in 'Chembu containing Plants' – A Scientific validation of Siddha claim.

C. Details of ongoing projects pertaining to medicinal plants conducted by peripheral institutes/units of the Department of Biotechnology, Ministry of Science and Technology:

S. No.	Name of the Supported Institutions	Title of the Project
1.	<ul style="list-style-type: none"> ▪ Fragrance and Flavour Development centre (FFDC), Kannauj, U.P ▪ Rama Devi Womens University, Odisha. ▪ Siksha 'O' Anusandhan, Bhubaneswar, Odisha. 	Propagation of Elite Kewda (<i>Pandanus fascicularis</i>) in association with other Aromatic crops to enhance farmer's income through high quality oil production.
2.	<ul style="list-style-type: none"> ▪ National Institute of Pharmaceutical Education and research (NIPER)- Guwahati, Assam. 	Establishment of GMP accredited Pilot Scale extraction facilities for development of Herbal or phytopharmaceutical products from the Medicinal Plants of NE India.
3.	<ul style="list-style-type: none"> ▪ GLA University, Mathura, U.P. 	Development of nutraceutical feed additive using medicinal plants (<i>Moringa oligofera</i> and <i>Chenopodium album</i>) against mycobacterial infections in domestic livestock.
4.	<ul style="list-style-type: none"> ▪ National Institute of Technology, Rourkela, Odisha. 	Screening and identification of canonical mitophagy inducing phytochemicals from <i>Bacopa monnieri</i> to target NLRP3 inflammasome activation for oral cancer therapeutics.
5.	<ul style="list-style-type: none"> ▪ CSIR- Central Drug Research Institute, Lucknow, UP. 	Phytopharmaceutical development of a standardized fraction from the root of <i>Desmodium gangeticum</i> for the treatment of chronic kidney disease-induced skeletal and vascular complications.
6.	<ul style="list-style-type: none"> ▪ National Institute of Animal Biotechnology, Hyderabad, Telangana ▪ Birla Institute of Technology & Science, Pilani, Hyderabad, Telangana. 	Extraction and evaluation of small molecules from medicinal plants with therapeutic potential against theileriosis.

7.	<ul style="list-style-type: none"> ▪ Birla Institute of Technology & Science, Pilani, Hyderabad, Telangana. ▪ Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh. 	Molecular studies on <i>Bacopa monnieri</i> to evaluate the modulation of neuronal receptors for schizophrenia using cell based and mouse models.
8.	<ul style="list-style-type: none"> ▪ CSIR-Central Drug Research Institute, Lucknow, Uttar Pradesh. 	Preclinical Development of a natural molecule (N-012-0006) from <i>Crotalaria juncea</i> for the management of diabetic nephropathy.
9.	<ul style="list-style-type: none"> ▪ Institute of Advanced Virology, Kerala. 	Development of a rapid and reliable in vitro screening platform based on fluorescent reporter knock-in targeting host cell IFITM gene to identify phytochemical immunomodulators against Dengue virus.
10.	<ul style="list-style-type: none"> ▪ Kalinga Institute of Dental Sciences, Kalinga Institute of Industrial Technology, Bhubaneswar ▪ School of Biotechnology, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha. 	Development of first ever Zingibain containing muco-adhesive buccal patch for management of Oral Submucous Fibrosis.
11.	<ul style="list-style-type: none"> ▪ Aligarh Muslim University, Aligarh, Uttar Pradesh. 	Biotechnological interventions for conservation and phytochemical characterization of <i>Saraca asoca</i> : a venerable medicinal tree.
12.	<ul style="list-style-type: none"> ▪ SRM University, Kattankulathur, Chennai, Tamil Nadu. 	Evaluation of antidiabetic nephropathy activity of natural products Withaferin A, limonoids and their analogs from <i>Withania somnifera</i> and <i>Azadirachta indica</i> using in vitro and in vivo models.

Details of ongoing projects supported by the National Medicinal Plants Board (NMPB), Ministry of Ayush, under its Central Sector Scheme on Conservation, Development and Sustainable Management of Medicinal Plants on medicinal plants research throughout the country, including West Bengal:

S.No.	State	Project Title and Organization Details
1.	Assam Arunachal Pradesh Itanagar Nagaland Tripura Sikkim	1. Critical appraisal and validation of Local Health Traditions (LHTs), Oral Health Traditions (OHTs) and Ethno Medicinal Practices (EMPs): An inclusive study among Ethnic communities of Northeast India. Central Ayurveda Research Institute (CARI), Guwahati, Assam Regional Ayurveda Research Institute, Itanagar. Arunachal Pradesh. Regional Ayurveda Research Institute, Gangtok, Sikkim. Regional Ayurveda Research Centre, Dimapur, Nagaland. Regional Ayurveda Research Centre, Agartala, Tripura.
		2. DNA barcoding of select plants of Assam used in Ayurveda and traditional medicine along with adulterant detection in marketed Ayurvedic products. Department of Life Sciences, Dibrugarh University, Assam.
		3. Bio evaluation, identification, quantification of bio active compounds and development of bio-pesticides from ethno-medicinal plant extracts against major insect pest of vegetable crops. Assam Agricultural University, Assam
		4. Development of high yielding varieties, phytochemical analysis and bioactivity of <i>Kaempferia parviflora</i> wall. Ex baker: a high value endangered medicinal plant of North East India. CSIR-North East Institute of Science and Technology , CSIR-NEIST
2.	Chandigarh	5. Evaluation of suitable microclimatic conditions for certain MAP's by qualitative and quantitative chemical analysis with special reference to secondary metabolites. ICAR- Indian Institute of Soil and Water Conservation (IISWC), Chandigarh. Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh.

3.	Delhi	6. Spatial Niche Modelling and Genetic Diversity analysis of <i>Desmodium gangeticum</i> : An Important Medicinal Species of Shivalik Himalayas. The Energy and Resources Institute (TERI), TERI, Delhi Forest Research Institute, Dehradun, Uttarakhand.
		7. Bioassay guided fractionation of <i>Acacia catechu</i> and <i>Rhodiola imbricata</i> for the inhibition of PEPCK gene expression and gluconeogenesis in H4IIE hepatoma cell line. National Forensic Sciences University (An Institute of National Importance under Ministry of Home Affairs) New Delhi.
4.	Gujarat	8. Credentials of region-specific selected medicinal herbs that have a specific geographical origin to ensure sustainable supply of quality raw herbal drugs ICAR – Directorate of Medicinal & Aromatic Plants Research, Anand.
5.	Himachal Pradesh	9. In vivo and In vitro study on synergistic effect of medicinal plants in breast cancer of mice. Central University of Himachal Pradesh, Kangra, Himachal Pradesh .
		10. Development of Chemometric Database: A Futuristic Approach for the Quality Assurance of Commercially Important Himalayan Medicinal Plants CSIR-Institute of Himalayan Bioresource Technology, Palampur.
		11. Collection, Conservation and Characterization of <i>Fritillaria cirrhosa</i> germplasm. CSIR – Institute of Himalayan Bioresource Technology, Palampur.
6.	Jammu & Kashmir	12. “Conservation, Bioprospection and Development of good agricultural practices for <i>Rheum emodi</i> , <i>Sassurea costus</i> , <i>Podophyllum hexandrum</i> and <i>Aconitum heterophyllum</i> for Ex situ cultivation in Jammu and Kashmir. CSIR-Indian Institute of Integrative Medicine, Sanatnagar, Srinagar.
		13. Development of Microbial Consortia for Improving Growth and Active Components in <i>Bacopa monnieri</i> (L.)

		University of Kashmir, Srinagar.
7.	Karnataka	14. Intercropping of medicinal crops in Coffee plantation in high altitude zone of Karnataka. Indian Institute of Horticultural Research, Hesaraghatta, Bangalore.
		15. Genetic enhancement and post-harvest studies in <i>Bacopa monnieri</i> . Indian Institute of Horticultural Research, Hesaraghatta, Bangalore.
		16. Pre and post-harvest enhancement of secondary metabolites in <i>Withania somnifera</i> by adopting patented process and technology transfer. Padmashree Institute of Management and Sciences, Kengeri.
		17. Medicinal plants-based Eco restoration of Coffee Plantations in Hassan and Chickmagalur Districts of Western Ghats. Institute of Wood Science and Technology, Bangalore.
8.	Kerala	18. Exploring the ayurveda concept of controversial drug (Sandigdha Dravya) by pharmacognostical, phytochemical and DNA barcoding of source plants of ayurvedic drug “Murva” Vaidyaratnam Ayurveda College, Ollur, Kerala.
		19. Identification of substitute /sustainable alternative species or plant part for selected rare medicinal plants by phytochemical and pharmacological evaluation Arya Vaidya Sala, Kottakkal, Malappuram
		20. Preparation of a Monograph on Selected Medicinal Plants Used as Substitutes/Adulterants in Ayurveda with Special Reference to <i>Mesua ferrea</i> L.: An Integrated Pharmacognostic, Phytochemical, and Pharmacological Approach Jawaharlal Nehru Tropical Botanic Garden & Research Institute, Palode, Thiruvananthapuram,
9.	Madhya Pradesh	21. Germplasm collection and bio-molecular characterization Black Turmeric (<i>Curcuma caesia</i> Roxb.). Jawaharlal Nehru Krishi Vishwa Vidhalya, Jabalpur.

10.	Maharashtra	22. Substitution of Root/Barks with leaves of Medicinal Plants, a Strategic method for conservation of some medicinal plants from Vidarbha region". Rashtrasant Tukadoji Maharaj Nagpur, University, Nagpur
11.	Odisha	23. Harnessing the potential of endophytes of <i>Piper longum</i> as an alternate source for piperine production: optimization of protocol for laboratory production and exploration of its anticancer properties. Regional Plant Resource Centre, Bhubaneswar
		24. Chemotyping and genotyping of <i>Embelia ribes</i> Brum F. for authentic identification, selection and conservation of elites. Centurion University of Technology and Management, Bhubaneswar.
12.	Rajasthan	25. Exploration and Documentation of Ethno-medicinal Practices of Rural and Tribal Population of Rajasthan. JyotiVidyapeeth Women's University, Jaipur
13.	Tamil Nadu	26. Development of microbial consortia to mitigate the soil-borne pathogens problem in Glorylily. Tamil Nadu Agricultural University, Coimbatore
		27. Quantitative documentation of medicines used in Varmam therapeutics by the non institutionally trained Siddha Practitioners of Southern Tamil Nadu St Xavier's College, Palayamkottai, Tirunelveli
		28. Deciphering the response of <i>Ficus</i> fruit polysaccharides on Major Histocompatibility Complex (MHC) in Inflammatory Bowel Disease (IBD). Bharathiar University, Coimbatore
		29. Green nanoprimering technology based efficient in vitro and in vivo seed germination of <i>Saraca asoca</i> (Roxb.) De Wilde; an endangered medicinal plant . Bharathiar University, Coimbatore
		30. Studies on Reassessment of Population, Reproductive Biology and Restoration of Six Endemic and Endangered Species of <i>Cinnamomum</i> from the Western Ghats. The Gandhigram Rural Institute (Deemed To Be University), Dindigul.

14.	Telangana	31. Isolation and evaluation of Bioactive Components of Young Roots and Leaf Extracts of Bilva for IL-2 Immunotherapy: In Vitro and In Vivo Studies. University of Hyderabad, Gachibowli, Hyderabad.
15.	Uttar Pradesh	32. In vitro regeneration of multipurpose and medicinally important <i>Butea monosperma</i> Lam. and its assessment for mass propagation of genetically uniform quality planting material ICAR-Central Agroforestry Research Institute (CAFRI), Jhansi.
		33. Morpho-anatomical and quality attributes characterization in <i>Sida cordifolia</i> L. For high root biomass yielding genotypes Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow.
		34. Isolation, characterization of herbal plant constituents and their effect on curing Osteoporosis using osteoblastic cell lines. Sharda University, Greater Noida.
		35. Cytotoxic evaluation of the non-polar compound of <i>Valeriana wallichii</i> against MDR <i>Aacinetobacter baumannii</i> . Amity University, Noida
16.	Uttarakhand	36. Phytochemical, morphological and molecular evaluation of RET medicinal plant <i>Trillium govanianum</i> (Nag chhatri) distributed in Northwestern Himalayan Region for its Conservation and Utilization. Forest Research Institute, Dehradun.
		37. Bio prospecting of <i>Lindera pulcherrima</i> by chemoprofiling and analysis of antioxidant potential Forest Research Institute, Dehradun.
		38. Field genebank: a sustainable tool for conservation of some threatened high altitude medicinal plant species. High Altitude Plant Physiology Research Centre (HAPPRC), HNBGU, Srinagar.
17.	West Bengal	39. Chemotyping, quality assessment, in vitro propagation of Indian olibanum (<i>Boswellia serrata</i> Roxb.) from Eastern part of India and their plantation in a new area Ramakrishna Mission Vivekananda Centenary College, Rahara, Kolkata.

Annexure-V

A. Details of survey by the Central Council for Research in Unani Medicine (CCRUM) has been conducted in the Kolli Hills region of Namakkal district of Tamil Nadu:

S.No	Year	Name of the Forest Divisions	Name of the Forest Areas	Number of plant species collected and documented
1.	2012-13	Namakkal	Bailnadu RF, Ariyur RF, Ariyurkusba, Kulivalavu RF, Karumbur RF, Puranikadu RF, Ariyursolai lower slope, Puliyansolai, Vazhavanthinadu RF, Valapurnadu RF, Azhakadu RF, Sellurnadu RF, Veeraganurpatti RF, Semmedu RF, Karavalli RF. Athanur RF, Pazhanthinipatti RF, Puthupatti RF, Mathimaduvu Dam RF, Oathakadai RF, Wayalnadu RF. Palliparai RF, Puthupatti RF, Maval RF, Adukam RF, Perumalmai RF, Velikattupatti RF, Seradi RF, Adukamparai RF. Puliyansolai RF, Erumaipatti RF, Nadukombai RF and Karavalli RF.	201
2.	2015-16	Namakkal	Podimattu, Viripara, Letchmi, Rajamalai, Pattimudi, Eravikulam National Park, Perumalkoil, Naikankombai, Pallaniyappar Koil, Mathimaduvu, Karavalli, Nadukombai, Ariyur, Nadukombai, Vazhavanthinadu, Karuvalli, Bailnadu, Puliyansolai, Karavalli upper slopes and Kollimalai lower slopes.	86
3.	2020-21	Namakkal,	Ariyursholai, Ariyursholai Kasba, Ariyurnadu, Panamarattupatti, Semedu, Karavalli, Nathakkadu. Masi Periyanna Temple hills, Thathan Kombai (MPCA), Kolli hills, Lower slope, Sakkaraiipatti Forest area. Puliyansholai, Periyasami koil, Pasilaikombai, Kullathu kombai. Nadukombai, Palliparai.	156

B. Details of the survey by the Central Council for Research in Siddha (CCRS) has been conducted in the Kolli Hills region of Tamil Nadu:

S. No	Year	Locality	Number of plant species collected and documented
1.	2022	Kollimalai, Cholakkadu (Adivaram)	55