

**GOVERNMENT OF INDIA
MINISTRY OF AYURVEDA, YOGA & NATUROPATHY, UNANI,
SIDDHA AND HOMOEOPATHY (AYUSH)**

**LOK SABHA
STARRED QUESTION No. 400
TO BE ANSWERED ON 20TH MARCH, 2020
RESEARCH ON MEDICINAL PLANTS**

***400. DR. BEESETTI VENKATA SATYAVATHI:**

Will the Minister of **AYURVEDA, YOGA AND NATUROPATHY, UNANI, SIDDHA AND HOMOEOPATHY (AYUSH)** be pleased to state:

(a) the details of research being undertaken on various aspects of medicinal plants in the country; and

(b) the details of institutions involved in such research work?

**THE MINISTER OF STATE(IC) OF THE MINISTRY OF
AYURVEDA, YOGA & NATUROPATHY, UNANI, SIDDHA AND
HOMOEOPATHY (AYUSH)
(SHRI SHRIPAD YESSO NAIK)**

(a) & (b) A Statement is laid on the Table of the House.

**STATEMENT REFERRED TO IN REPLY TO LOK SABHA
STARRED QUESTION NO.400* FOR 20TH MARCH, 2020**

(a) The research on medicinal plants are being supported by different Ministries/Departments of Government of India *viz.* Ministry of AYUSH, Ministry of Agriculture & Farmers' Welfare, Department of Science & Technology (DST), Department of Biotechnology (DBT), Council of Scientific & Industrial Research (CSIR), Indian Council of Medical Research (ICMR) etc. under their concerned schemes/programmes.

Research Councils *viz.* Central Council for Research in Ayurvedic Sciences (CCRAS), Central Council for Research in Homoeopathy (CCRH) Central Council for Research in Unani Medicine (CCRUM) and Central Council for Research in Siddha (CCRS), autonomous organizations under the Ministry of AYUSH are engaged in research & development activities on medicinal plants used in concerned system of medicine. In addition, the National Medicinal Plants Bard (NMPB), Ministry of AYUSH, under its Central Sector Scheme on 'Conservation, Development and Sustainable Management of Medicinal Plants' is also supporting research & development projects on various aspects of medicinal plants to government as well as private universities/research institutions/organizations across the country. The research projects which are being undertaken on various aspects are at Annexure-I.

b) The details of the institutions where research are being carried out are at Annexure-II.

Annexure-I

*DETAILS OF RESEARCH PROJECTS WHICH ARE BEING UNDERTAKEN ON VARIOUS ASPECTS:

1. National Medicinal Plants Board (NMPB).

During last 05 years, NMPB has supported project based major research activities on various aspects such as:

Sr. No.	Research areas	Number of projects
I.	Survey, identification, characterization and conservation of medicinal plants.	11
II.	Post-harvest Management, assessment of heavy metals and integrated pest management	12
III.	Varietal development and prospect of marketing	05
IV.	Genotype Identification, genetic improvement and germplasm collection & conservation	06
V.	Development of agro techniques, standardization of nursery techniques and cultivation practices	14
VI.	In-vitro propagation studies, micro-propagation chemical & molecular profiling and phyto-chemicals evaluation	20
VII.	Bioactivity guided fractionation studies	03
VIII.	Intercropping and sustainable production technology	03
IX.	Documentation and development of geo-tag digital library	02
X.	Finding out substitute and authentication of raw drugs	05

2. Central Council for Research in Ayurvedic Sciences (CCRAS).

- The major Research in the field of Medicinal plant Comprises:

I. Documentation of Ethno Medicinal Information and local health traditions (LHTs):

The Medico Ethno Survey Program (MEBS) is conducted in 6 States besides documentation of Local Health Traditions (LHTs) through Tribal Health Care Research program (THCRP) in 17 states.

The information is documented in structured format and validated for getting leads for further drug development.

- #### II. Development of Agro techniques of Important Medicinal plants and so far agro technique developed on 30 medicinal plants.
- #### III. Development of In-vitro propagation protocol of Important Medicinal plants through which so far protocol for 14 plants has been developed and published for further utility of stakeholders.

IV Developed and validated harvesting technique protocols for selected 10 Medicinal plants through scientific studies and published the same.

V. Development of Botanical reference standards (BRS) for 312 numbers of Medicinal plants focused on pharmacognostical studies.

3. Central Council for Research in Homoeopathy (CCRH).

CCRH is undertaking research studies with homoeopathic drugs of plant origin in its research programmes like Drug Standardisation, Drug Proving, Clinical Verification and Drug validation.

I. Drug Standardization

- Pharmacognostical studies completed on 309 plant drugs
- Physico-chemical studies completed on 285 plant drugs
- Pharmacological studies on 151 plant drugs
- 145 plants drugs have been studied on all three aspects

II. Drug Proving

- Concluded: 90 drugs
- Ongoing: 07 drugs

III. Clinical Verification

- Concluded: 82 drugs
- Ongoing : 08 drugs

IV. Drug validation

- ongoing: 23 drugs on 05 clinical conditions

4. Department of Biotechnology (DBT)

DBT has been implementing a programme on Translational Research for Developing Products and Processes from Medicinal and Aromatic Plants on the aspect of identification of elite material and their multiplication, chemical and molecular characterization, production of secondary metabolites, developing standardized, efficacious and safe herbal products (both in AYUSH mode as well as phytopharmaceutical drugs), isolation and characterization of novel bioactive with therapeutic potential, generating genomic resources and studying biosynthetic pathways in important medicinal and aromatic plants.

5. Council of Scientific & Industrial Research (CSIR)

CSIR is carrying out various R&D activities related to medicinal and aromatic plants (MAPs) on various aspects such as survey, collection and inventorization, conservation, development of improved varieties of economically important MAPs, their agrotechnologies and processing technologies by their laboratories/institutes.

6. Indian Council of Agricultural Research (ICAR)

Presently, ICAR-Directorate of Medicinal and Aromatic Plants Research (ICAR-DMAPR) conducting basic, applied and adaptive research on medicinal and aromatic plants on 11 mandated crops viz. Aloe vera, Guggal, Senna, Isabgol, Aswagandha, Giloe, Safedmusli, Lemongrass, Palmarosa, Salaparni and Satavari. It has undertaken management of Plant Genetic Resources (PGR) as a prioritized activity with the effort for collection, conservation, evaluation and documentation of germplasm of medicinal and aromatic plants.

7. Indian Council of Medical Research (ICMR)

The council promotes research in the area of Traditional Medicinal and Medicinal Plants through its intramural and extramural programmes. The research covers documentation, development of marker compounds, preclinical and clinical studies.

Annexure-II

*DETAILS OF THE INSTITUTIONS WHERE RESEARCH ARE BEING CARRIED OUT

1. National Medicinal Plants Board (NMPB)

S. No.	Project no.	Details of Institutions
i.	Andhra Pradesh	Deptt. Of Biotechnology, Vikrama Simhapuri University, Dargamitta, Nellore, A.P. 524003
ii.	Arunachal Pradesh	CSIR-North East Institute of Science and Technology, Itanagar; CSIR-NEIST Branch Itanagar, Naharlagun, Arunachal Pradesh - 791110,
iii.	Assam	University of Asian Institute of Management and Technology /Guwahati, R.G. Barua Road, Guwahati-781021, Assam. Assam Agricultural University, Jorhat-785013, Assam.
iv.	Delhi	Tissue Culture and Cryopreservation Unit, ICAR- National Bureau of Plant Genetics Resources, New Delhi- 110012,
v.	Gujarat	Gujarat Ayurveda University, Jamnagar-361008, Gujarat. ICAR- Directorate of Medicinal and Aromatic Plants Research, Boriavi, Anand-387310, Gujarat. The Maharaja Soyajirao University of Baroda, Vadodara - 390002. Tamil Nadu Agricultural University- Coimbatore-641003 TNAU.
vi.	Himachal Pradesh	Himalayan Forest Research Institute, Conifer Campus, Panthaghati, Shimla-171009, Himachal Pradesh. ICAR- NBPGR, Regional Station, Phagli, Shimla, H.P., 171004. Department of High Altitude Biology (HAB) Division, Palampur, Himachal Pradesh-176061. Dr. YS Parmar University of Horticulture & Forestry, Nauni, Solan 173230 (HP)
vii.	Jammu & Kashmir	National Research Institute of Sowa-region, Leh, Ladakh. School of Biotechnology, University of Jammu, Jammu-180006.
viii.	Kerala	AryaVaidyaSala, Kottakkal-676503, Kerala. Kerala Forest Research Institute, Peechi-680653, Kerala
ix.	Karnataka	University of Agricultural Sciences, Dharwad-580005, Karnataka. Institute of Wood Science & Technology, Bangalore-560003, Karnataka. Deptt. of R&D, Natural Remedies Pvt. Ltd., Bangalore-560100, Karnataka. Ashoka Trust for Research in Ecology and the Environment Conservation Genetics Lab, Bengaluru 560064 (ATREE). Institute of Horticultural Research (IIHR), Hessarghatta lake (PO), Bangalore-560089,
x.	Madhya Pradesh	ICAR- Central Institute of Agricultural Engineering, Nabi Bagh, Berasia Road, Bhopal, Madhya Pradesh-462038.
xi.	Maharashtra	Poona College of Pharmacy, Bharati Vidyapeeth Deemed University, Pune, Maharashtra. Plant Tissue Culture Division, CSIR-National Chemical Laboratory, Dr. Homi Bhaba Road, Pashan, Pune-411008.

		ICAR-National Research Centre on Pomegranate, NH-65, Solapur-Pune Highway, Kegaon, Solapur-413255, Maharashtra.
		Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola-444104, Maharashtra.
xii.	Manipur	Institute of Bioresources and Sustainable Development (IBSD), Takyelpat Institutional Area, Imphal-795001, Manipur.
xiii.	Orrisha	Plant Pathology and Microbiology Division, Regional Plant Resource Centre, Nayapalli, Bhubaneswar-751015, Odisha.
xiv.	Rajasthan	Arid Forest Research Institute, New-Pali Road, Jodhpur-342005, Rajasthan.
		Department of Botany, Jai Narain Vyas University (JNVU), Jodhpur-342005, Rajasthan.
		Department of Biosciences, Manipal University, Village and Post-Dehmi, Kalan, Jaipur-303007, Rajasthan.
xv.	Puducherry	Department of Botany, Kanchi Mamunivar Centre for postgraduation studies, Puducherry, India PIN-605008
xvi.	Punjab	Department of Pharmaceutical Science & Technology, Maharaja Ranjit Singh Punjab Technical University, Bathinda, Punjab.
xvii.	Telangana	National Institute of Animal Biotechnology (NIAB), Hyderabad, Telangana- 500032
		Agricultural college, Aswaraopet, Khammam (District), Telangana-507301.
		Deptt. of Biotechnology, School of Life Sciences, VELS University, Chennai-600117, Tamil Nadu.
xviii.	Tamil Nadu	Deptt. of Centre for advanced research in Indian system of Medicine School of chemical and Biotechnology, SASTRA University, Thirumalaisamudram, Thanjavur-613401, Tamil Nadu.
		Institute of Forest Genetics and Tree Breeding (IFGTB), Coimbatore – 641 002, Tamil Nadu.
		Department of forestry, land use and climate change division, Coimbatore-641002, Tamil Nadu
xix.	Uttar Pradesh	Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow-226015, Uttar Pradesh.
		Banaras Hindu University, Department of Botany, Institute of Science, B.H. U., Varanasi-221005
xx.	Uttarakhand	Forest Research Institute, P.O., IPE, Kaulagarh Road, Dehradun-248195 Uttarakhand.
		Department of Forestry, Ecology/ Climate Change and Policy Division, Dehradun-248006, Uttarakhand.
		Uttarakhand Ayurved University, Harrawala, Dehradun-248001, Uttarakhand,
		Forest Pathology Division, Forest Research Institute, Dehradun-248006
		G. B. Pant National Institute of Himalayan Environment and Sustainable Development (GBPNIHESD), Srinagar Garhwal - 246174
xxi.	West Bengal	Department of Genetics and Plant Breeding, Uttar Banga Krishi Viswavidyalaya, Pundibari, Coochbehar-736165, West Bengal.
		Department of Centre for Healthcare Science and Technology, Indian Institute of Engineering Science and Technology (Former BESU), Shibpur, Howrah-711103, West Bengal.

		AICRP on Medicinal & Aromatic Plant and Beetvine, AICRP on Medicinal & Aromatic Plant and Betelvine, Directorate of Research, Bidhan Chandra Krishi Viswavidyalaya (BCKV), Kalyani-741235, W.B.
		Department of Instrumentation & Electronics Engg., Jadavpur University, Salt Lake Campus, Block LB, Sector III, Kolkata-700098
		Cancer Biology and Inflammatory Disorder Division CSIR-Indian Institute of Chemical Biology, Kolkata-700032, West Bengal.

2. Central Council for Research in Ayurvedic Sciences (CCRAS).

State-wise peripheral Institutes/Centres of CCRAS-Medicinal Plants Research

State	Name of the Institutes/Centre/Units
Arunachal Pradesh	I. Regional Ayurveda Research Institute, Itanagar -791111
Assam	II. Regional Ayurveda Research Institute for Gastro-Intestinal Disorders, Borsojai, Beltola, Guwahati-781028
Himachal Pradesh	III. Regional Ayurveda Research Institute for Nutritional Disorders, Gandhi Bhawan, Mandi-175001
Jammu & Kashmir	IV. Regional Ayurveda Research Institute for Urinary Disorders, JDA Housing Colony, Ban Talab, Rajender Nagar, Jammu-181123
Laddakh	V. National Research Institute for Sowa-Rigpa, Old Leh Road, Leh- 194101
Karnataka	VI. Regional Ayurveda Research Institute for Metabolic Disorders, Govt. Central Pharmacy Annexe, Ashoka Pillar, Jayanagar, Bangalore-560011
Madhya Pradesh	VII. Regional Ayurveda Research Institute for Drug Development, Amkho, Gwalior-474009
Maharashtra	VIII. Regional Ayurveda Institute for Fundamental Research, Pune- 411038
Punjab	IX. Central Ayurveda Research Institute for Respiratory Disorders, Moti Bagh Road, Patiala-147001
Tamil Nadu	X. Captain Srinivasa Murthy Regional Ayurveda Drug Development Institute, Chennai - 600106.
Uttar Pradesh	XI. Regional Ayurveda Research Institute, Jhansi - 284003
Uttarakhand	XII. Regional Ayurveda Research Institute, Thapla, Ranikhet- 263645
West Bengal	XIII. Central Ayurveda Research Institute for Drug Development, 4 CN Block, Sector V, Bidhan Nagar, Kolkata-700091

3. Central Council for Research in Homoeopathy (CCRH)

- i. Dr. D P Rastogi Central Research Institute for Homoeopathy (DDPRCRI), Noida,
- ii. National Homoeopathy Research Institute in Mental Health(NHRIMH), Kottayam
- iii. Dr. Anjali Chatterjee Regional Research Institute (DACRRI), Kolkata
- iv. Centre of Medicinal Plants Research in Homoeopathy (CMPRH), Emerald, Tamilnadu.

- v. Regional Research Institute (H), Gudivada
- vi. Regional Research Institute (H), Guwahati
- vii. Central Research Institute (H), Jaipur
- viii. Homoeopathic Drug Research Institute (HDRI), Lucknow
- ix. Regional Research Institute (H), Agartala
- x. Regional Research Institute (H), Puri
- xi. Regional Research Institute (H), Shimla
- xii. Regional Research Institute (H), Mumbai
- xiii. Regional Research Institute (H), Imphal
- xiv. Clinical Verification Unit (H), Patna
- xv. Clinical Research Unit (H), Portblair
- xvi. Clinical Research Unit, Gangtok
- xvii. Drug Standardization Unit, Hyderabad
- xviii. Drug Standardization Unit (Extn.), Hyderabad
- xix. CRU(T), Siliguri
- xx. CRU(T), Ranchi
- xxi. Homoeopathy Treatment Centre, Safdurjung
- xxii. Clinical Research Unit (T), Puducherry
- xxiii. Drug Proving Ext. Unit, (H), Bhubaneswar

4. Department of Biotechnology (DBT).

- i. Amrita Institute of Medical Sciences and Research Centre, Kochi
- ii. Assam Agricultural University, Assam
- iii. Assam University, Silchar, Assam
- iv. Balaji Utthan Sansthan, Patna
- v. Bennett University, Greater Noida
- vi. Central Agricultural University Selesih, Mizoram
- vii. Central Institute of Technology, Kokrajhar
- viii. Central Muga Eri Research & Training Institute, Jorhat
- ix. Centre of Biotechnology, Siksha-O-Anusandhan University, Bhubaneswar
- x. College of Horticulture & Forestry, Central Agricultural University, Arunachal Pradesh
- xi. Cotton College, Guwahati, Assam
- xii. CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow
- xiii. CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu
- xiv. Darrand College, Tezpur, Assam
- xv. Dibrugarh University, Dibrugarh
- xvi. G.B. Pant Institute of Himalayan Environment & Development, Gangtok,
- xvii. Gauhati University, Guwahati
- xviii. GLA University, Mathura
- xix. Goalpara College, Goalpara, Assam
- xx. Government Ayurvedic College & Hospital, Guwahati
- xxi. Hamdard University, New Delhi
- xxii. Himalayan Forest Research Institute, Shimla
- xxiii. ICAR RC NEH, Manipur Centre

- xxiv. ICAR RC NEHR Sikkim Centre
- xxv. ICAR Research Complex for North East Hill Region, Mizoram Centre
- xxvi. ICAR, Shillong
- xxvii. ICAR-Central Institute for Research on Goat, Mathura
- xxviii. ICMR-Rajendra Memorial Institute of Medical Sciences (RMIMS), Patna
- xxix. Institute of Advanced Study in Science and Technology (IASST), Guwahati, Assam,
- xxx. Institute of Bio-resource and Sustainable Development (IBSD), Imphal, Manipur,
- xxxi. Institute of Horticulture Technology, Mandira, Kamrup, Assam
- xxxii. International Centre for Genetic Engineering & Biotechnology, New Delhi
- xxxiii. Jadavpur University, Kolkata
- xxxiv. Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI), Palode
- xxxv. JSS College of Pharmacy, JSS University, Mysore
- xxxvi. Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar
- xxxvii. Kelkars Education Trust's Scientific Research Centre, Mumbai
- xxxviii. KLE Academy of Higher Education and Research (KLE University), Belagavi, Karnataka
- xxxix. Kohima Science College, Jotsoma, Nagaland
- xl. M. S. University of Baroda, Vadodara
- xli. Manipal Life Science Centre, Manipal University, Manipal
- xlii. Manipur University, Imphal
- xliii. Mizoram University, Aizwal
- xliv. National Dairy Research Institute (NDRI), Karnal
- xlvi. National Institute of Pharmaceutical Education and research (NIPER), Guwahati
- xlvi. National Institute of Technology, Agartala
- xlvi. National Institute of Technology, Arunachal Pradesh
- xlvi. National Institute of Technology, Arunachal Pradesh
- xlvi. CSIR-North East Institute of Science and Technology, Itanagar, Arunachal Pradesh
- xlvi. North Eastern Hill University, Shillong,
- l. North Eastern Regional Institute of Science and Technology, Itanagar
- li. Rajiv Gandhi Centre for Biotechnology (RGCB), Thiruvananthapuram
- lii. Rajiv Gandhi University, Itanagar, Arunachal Pradesh
- liii. Ramakrishna Mission Vivekananda University, Kolkata
- liv. Regional Medical Research Centre, N.E. Region, Dibrugarh, Assam
- lv. Sikkim Government College Sikkim
- lvi. Tezpur University, Napaam, Assam
- lvii. The Energy and Resources Institute, Guwahati
- lviii. Tripura University, Agartala

5. Council of Scientific & Industrial Research (CSIR).

- i. CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow;
- ii. CSIR-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu;
- iii. CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT); and
- iv. CSIR-North East Institute of Science & Technology (CSIR-NEIST), Jorhat

6. Indian Council of Agricultural Research (ICAR).

Under ICAR there is one Institute named as ICAR-Directorate of Medicinal and Aromatic Plant Research located at Boriavi, Anand, Gujarat.

Besides, following AICRP on MAP are also working at different centres in India.

- i. Anand Agricultural University (AAU), Anand
- ii. Assam Agricultural University (AAU), Jorhat
- iii. Bidhan Chandra Krishi Viswavidyalaya (BCKV), Kalyani
- iv. Bihar Agricultural University (BAU), Islampur
- v. Birsa Agricultural University (BAU), Ranchi
- vi. C. C. S. Haryana Agricultural University (CCSHAU), Hisar
- vii. Indira Gandhi Krishi Vishwavidyalaya (IGKV), Raipur
- viii. ICAR - Indian Institute of Horticultural Research (IIHR), Bengaluru
- ix. Jawaharlal Nehru Krishi VishwaVidyalaya (JNKVV), Jabalpur
- x. Kerala Agricultural University (KAU), Trichur
- xi. MaharanaPratap University of Agriculture and Technology (MPUAT), Udaipur
- xii. Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri
- xiii. N. D. University of Agriculture and Technology (NDUAT), Faizabad
- xiv. Orissa University of Agriculture and Technology (OUAT), Bhubaneshwar
- xv. Dr. PanjabraoDeshmukh Krishi Vidyapeeth (PDKV), Akola
- xvi. Dr. Rajendra Prasad Central Agricultural University (DRPCA), Pusa
- xvii. RajmataVijayrajeScindia Krishi VishwaVidyalaya (RVSKVV), Mandsaur
- xviii. Tamil Nadu Agricultural University (TNAU), Coimbatore
- xix. Uttar Banga Krishi Viswavidylaya (UBKV), Kalimpong
- xx. Uttarakhand University of Horticulture & Forestry (UUHF), Bharsar
- xxi. Dr. Y. S. Parmar University of Horticulture and Forestry (YSPUHF), Solan
- xxii. Dr. Y. S. Rajasekhara Reddy Horticulture University (Dr. YSRHU), Venkataramannagudem
- xxiii. Central Agricultural University (CAU), Pasighat, Arunachal Pradesh, Voluntary Centres under AICRP on MAP
- xxiv. Agriculture University (AU), Jodhpur
- xxv. Banda University of Agriculture and Technology (BUAT), Banda
- xxvi. Sher-e-Kashmir University of Agricultural Sciences and Technology (SKUAST), Kashmir.