



National Conference on
“Ashwagandha & Human Health”

**Theme- Species-specific national campaign on
Ashwagandha- A health promoter**

March 4-5, 2025

Proceedings

Supported by



National Medicinal Plants Board
Ministry of Ayush, Government of India



National Conference on “Ashwagandha & Human Health

March 4-5, 2025



		and overexpression of key metabolites to maximize its therapeutic efficacy	
56.	ITKS012	Ashwagandha: An Ayurvedic rasayana with diverse therapeutic potential	Vipasha
57.	ITKS014	भारतीय मूल का परंपरा; आयुर्वेद में अश्वगंधा	Namonarayan Tiwari
58.	MRRT010	Innovative Ashwagandha formulations: From traditional remedies to modern pharmaceuticals	Yati Goel
59.	MRRT012	Medicinal plant research in recent trends and future prospectus	Rakesh Yadav
60.	PMDD012	Neuroprotective effects of Ashwagandha: A natural remedy for anxiety and depression	Yati Goel
61.	PMDD020	Dose-dependent effects of Ayurvedic plant extracts on health parameters in <i>Drosophila melanogaster</i> .	Sanjana Gupta, Shivangi Aggarwal, K Negi
62.	PMDD024	Phytochemical profile and immune-boosting effects of indian ginseng- <i>Withania somnifera</i> (L.) (Solanaceae)	Lakshika Chauhan, Harsh Kumar, and Kamal Kumar Gupta
63.	MRRT017	Research on medicinal plants: A pivot to human health	Yashvi Prajapati, Anoushka Tiwari and Amrita Singh
64.	OTHE018	An experimental study on the benefits of Avartan dhyana as alternative medicine	Divyansh Jain
65.	VPAM011	Ashwagandha: A promising potential herb from traditional Ayurveda to modern nanoscience	Ruchi Raina and Samina Mazahar
66.	VPAM013	Exploratory review on value added products of Ashwagandha	Rakesh Sangwan
67	MRRT020	Deciphering withaferin- A biosynthetic gene expression in <i>Withania somnifera</i> varieties: A molecular approach to salt stress	Afreen Akhtar, Saad Bin Javed and Altaf Ahmad

5 th March 2025 (Wednesday)	
Plenary Talk- 2: Prof. Mohammad Idris 09:30 -10:15 am. Ex Principal & MS, Ayurvedic & Unani Tibbia College & Hospital, Karol Bagh, New Delhi, Ex Dean & Head, F/o Ayurveda & Unani Medicine, University of Delhi (Conference Hall, 2nd Floor, New Science Block)	
Invited Talk-2: Dr. Baidyanath Mishra 10:15-10:45 am. Head-R&D Healthcare Research, Dabur India Limited Ghaziabad, Uttar Pradesh (Conference Hall, 2nd Floor, New Science Block)	
High Tea 10:45-11:15 am. (Outside Conference Hall, 2nd Floor, New Science Block)	



Supported by
National Medicinal Plants Board, Ministry of Ayush, Govt of India



Abstract Code: MRRT017

Research on medicinal plants: A pivot to human health

Yashwi Prajapati¹, Anoushka Tiwari², and Amrita Singh^{2*}

¹ Department of Biochemistry and ² Department of Botany, Sri Venkateswara College, University of Delhi, Delhi

#amrita@svc.ac.in

Medicinal plants play a vital role in healthcare, particularly in Ayurveda and traditional medicines. Research on medicinal plants is gaining impetus and accurate identification of medicinal plants is the preliminary requirement as the therapeutic properties of plants depend on the correct species being used. Traditional machine learning (ML) models such as Support Vector Machines (SVM) and K-Nearest Neighbors (KNN) have been used for plant identification but there have been problems in identification with regards to complex leaf characteristics, large datasets and computational inefficiencies. Convolutional Neural Network (CNN) overcomes these limitations in identification of medicinal plants. CNNs excel at processing large-scale image data, automatically learning and extracting features such as leaf shape, texture and color without requiring extensive manual feature engineering. CNNs also scale well with large datasets hence improving real-world applicability. The classification accuracy is enhanced using CNN as compared to traditional methods thus ensuring reliable plant identification for pharmaceutical and therapeutic applications. Advances in genomic research have facilitated the discovery of new secondary metabolites from medicinal plants. CRISPR/Cas-based gene editing technology has enhanced the production of specialized secondary metabolites in medicinal plants. A variety of bioactive compounds such as alkaloids, flavonoids, terpenoids, saponins, tannins and phenolic compounds which contribute antimicrobial, anti-inflammatory, antitumor and neuroprotective properties are found in medicinal plants. *Withania somnifera* (Ashwagandha) reduces stress and anxiety, modulates the immune system and has anticancerous effects due to the presence of withanolides and withaferin A. *Rhodiola rosea* alleviates pain and enhances cognitive function because of the presence of rosavins and salidroside. *Polygonum cuspidatum* contains resveratrol which possesses antitumor activity while *Cannabis sativa* produces cannabinoids such as THC (tetrahydrocannabinol) and CBD (cannabidiol) which are known for their analgesic and neuroprotective effects. A variety of medicinal plants offer antimicrobial and wound-healing benefits. *Glycyrrhiza glabra* L. possesses anti-gram-positive bacterial properties while *Betelvine* extracts exhibit antiviral and antifungal effects. *Calotropis* and *Bryophyllum pinnatum* promote wound healing through flavonoids and saponins that support tissue regeneration. Whole-genome sequencing of *Artemisia annua* has improved the understanding of artemisinin biosynthesis for malaria treatment while genome studies on

