Dr. Gurdev Chand

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Dr. Gurdev Chand, Ph.D. (NET) Professor & Head (Division of Plant Physiology, Faculty of Basic Sciences) Sher-e-Kashmir University of Agricultural Sciences and Technology Jammu, Chatha, Jammu 180009, Jammu and Kashmir, INDIA.

SUMMARY

- Teaching and Research Experience: 20 years 07 months
- Extramural funding till date – 49 Cr as PI; 29.0 Cr as Co-PI
- 64 Research papers; (18 papers Scopus Indexed, 11 papers > 6 NAAS rating; 29 papers >5 NAAS rating, 25 papers in Impact factor journals)
- Edited books/ Success Stories/Proceedings: 06; Book Chapters/Conference Papers (Full): 34; Authored Books: 02
- Standardized different models of hydroponic and aeroponics system in the division of plant physiology
- Cultivated and standardized exotic vegetables, herbs, berries and medicinal plants under hydroponics system
- Contributed towards Technology Commercialization of Start-ups.
- As PI, distributed hydroponic units to KVK's and farmers of local communities to encouraged and learn new modern farming.
- Organized One month certificate course on "Hydroponics & vertical farming: New vistas in smart agriculture" from 28th February-27th March, 2023.
- Organized One day workshop on "Start-up Ideas" on 16th February, 2023 under NAHEP-IDP, SKUAST-Jammu.
- Created SKUAST-Jammu YOU-TUBE Channel and Shooting of Videos of technologies developed by the scientists of SKUAST-Jammu and uploading of same on YOU-TUBE Channel of SKUAST-Jammu.

EDUCATION

- Ph.D. (Plant Physiology), Chaudhary Charan Singh Haryana Agricultural University, 2015
- M.Sc. (Ag.) Banaras Hindu University (BHU), Varanasi (U.P), 2001
- B.Sc. Agriculture, Chaudhary Charan Singh University, Meerut, U.P., 1999
- Qualified National Eligibility Test A.S.R.B. (ICAR) in Plant Physiology, 2001.

PERSONAL DETAILS

- Date of Birth: 12-03-1974
- Languages: English, Hindi, Punjabi and Dogri
- Residential address: 199/4, Ekta Vihar, Near JK Public School, Kunjwani, Jammu, Jammu & Kashmir -180010, India

Experience

- Invigilators for CET, UG PG and Ph.D exams since 2005 on regular basis
- Attracted 49 Cr as PI and 29 Cr as Co-PI in Project funds from different funding agencies like DST, SERB-DST, DBT, ICAR, NABARD JKST&IC etc. This excludes Rs. 129 Cr project on "Innovative approaches for green fodder production and mass multiplication under Hi-Tech agriculture under HADP project no. 28 entitled "Development of fodder resources for UT of Jammu and Kashmir''

Patent Filed

- Title of the Patent: ***A Method for Optimization of Hormone Concentrations, Growing Substrates and Nutrients for Hydroponic Saffron Cultivation ".***
- Application no.: **202511003714** Date: 16-01-2025

Research

- Research & Extension Experience: 20 years.
- Screening and Identification of Chickpea (*Cicer arietinum* L.) Genotype for Cold Tolerance under rain fed Conditions.
- Study on Growth Retardants for Ameliorating the effect of drought Stress in mustard (*Brassica juncea* l.).
- Influence of environmental factor on t active substance production and antioxidant activity in medicincal plants under different climatic conditions of Jammu region.
- Physiological and Biochemical basis of drought stress tolerance in *Brassica juncea* genotypes in Jammu region.
- To study the effect of physical and biochemical approaches on water use efficiency in tomato (*solanum lycopersicum*).
- Standardization of different substrates for production of lettuce (*Lactuca sativa* L.) through hydroponic system.
- Studies on effect of Zinc and Boron fortification on Physiological effiency and seed quality attributes in chickpea (*Cicer arietinum* L.).
- Production of Strawberry Cultivars in Closed nutrient Film Technology (NFT) System of Hydroponics.
- Morphological and physic-biochemical characterization of tomato (*Solanum lycopersicum* L.) cultivars under soil and soil less conditions.
- Bio-prospecting of selenium fortification in mustard (*Brassica juncea* L.)
- Studies of root architectural and anatomical phenes for drought tolerance in wheat (*Triticum aestivum* L.)
- Optimization of in-vitro Organogenesis in passion Fruit (*Passiflora edulis* L.)

Professional

- Indian Society of Plant Physiology
- Soil Conservation society of India
- Indian Society of Life Sciences
- Society for Integrated Development of Agriculture, Veterinary and Ecological Sciences
- Society of Scientific Development in Agriculture and Technology,
- Scientific Educational Research Society

- Organized conferences/training programmes/workshops etc. as organizing Secretary/Convener/Co-organizing Secretary

PROJECTS

As Principal Investigator

S.NO.	Title	Funding Agency
1.	Training & Demonstration of vegetables and fodder production through hydroponics system in Jammu region of J&K	NABARD, J&K (UT)
2.	Validation of selected cold tolerance line (To identify the donor parents with specific physiological attributes attributing to their adaptability to low-temperature environments).	AICRP- IIPR, Kanpur
3.	Study of root architectural and anatomical phenes for drought tolerance in wheat genotypes	SKUAST-JAMMU
4.	Evaluation of high-value vegetables with low water use - hydroponics study	NABARD, J&K (UT)
5.	Innovative approaches for green fodder production and mass multiplication under Hi-Tech agriculture under HADP project no. 28 entitled "Development of fodder resources for UT of Jammu and Kashmir''	HADP, J&K
6.	Vertical farming and hydroponics a new enterprise in smart agriculture	DST- Govt. of India
7.	Standardization of lettuce (*Lactuca sativa*)	SKUAST-Jammu
8.	Demonstration of high values vegetables with low water use – Hydroponics technology under temperature control system.	RKVY

As Co- Principal Investigator

S.NO.	Title	Funding Agency
1.	Hormonal intervention for mitigating the alternate bearing problem in mango varieties of Jammu region.	NABARD
2.	Induced mutagenesis for cold tolerance of chick pea (*Cicer aritinum* L.).	BARC, Bombay
3.	Seed fair to promote climate resilient varieties in Jammu Division	RKVY
4.	Development of molecular laboratory for analysis of purity of germplasm of Basmati rice and other seeds	Special Taskforce Project (ICAR)
5.	Transfer of technology for management alternate bearing problem through hormonal intervention in mango varieties of Jammu region"	FSPF, NABARD, J&K (UT)
6.	Promotion of technology for management the alternate bearing problem in Mango varieties	SKUAST-Jammu

Foreign Exposure

a) Participated in 05 days 2nd International conference on innovative approaches in applied sciences and technologies at NEC, Nanyang Technological University, Singapore (June 19-23, 2017).

Selected Research Articles

- **Chand, G.**, Dogra, S., Kumar, A., Dhansu, P. and Mann, A., 2024. Exploring Ecophysiological Constraints in Halophytes and Innovative Strategies for Advancing Biosaline Agriculture Singapore. In *Halophytes vis-à-vis Saline Agriculture: Perspectives and Opportunities for Food Security*. Singapore: Springer Nature (pp. 231-261)
- Raina, A., **Chand, G.**, Kalsi, J., Sinha, B.K., Verma, S., Malpotra, S. and Kumari, M. 2024. Effect of Total Chlorophyll Content and Relative Water Content of Mini Tuber Potato under Aeroponic Condition in Jammu Region, India. *International Journal of Plant & Soil Science*, 36(11).
- S. Dogra**, G. Chand**, B. K. Sinha, M. Banoo, F. Kouser, M. Kumari, M. Sharma 2023Effect of drought stress on antioxidants activity in response to yield and its attributes in different Brassica juncea (L) cultivars. Agricultural Mechanization in Asia. 54 (4): 12767-12779
- Monika Kumari, **Gurdev Chand**, Sapalika Dogra, B.K. Sinha, Farzana Kouser, Marvi Sharma, Chandan Thappa, Swati and Nikhil Thakur 2023. Assessing the Impact of Drought Stress on Morpho-physiological Traits in Wheat (*Triticum aestivum* L.) genotypes in Jammu region. Agriculture Association of Textile Chemical and Critical, 11: 156-161.
- Banoo, M., Sinha, B.K., **Chand, G.** and Sinha, R. 2023. Paclobutrazol and partial root drying induces drought tolerance in tomato (Solanum lycopersicum L.). Journal of Pharmacognosy and Phytochemistry, 12(6) and 349-355.
- Banoo, M., Sinha, B.K., Chand, G., Dogra, S. and Sinha, R. 2022. Traditional Agriculture: Alternative Practices for Climate Change Mitigation. Agricolation: 1(5) and 14-18.
- Vijay Kumar and Gurdev Chand 2022. Impact of drip/trickle irrigation and hydrogel with mulch on nutrient status, yield and quality of Kinnow mandarian, *Journal of soil and water conservation*,21 (3): 293-298.
- Banoo, M., Sinha, B.K., Chand, G., Sinha, R., Gupta, M., Sharma, M., Dogra, S., Kouser, F., Kour, M. and Sharma, D. 2022. Response of growth Retardants Paclobutrazol and Cycocel on Morphological Characteristics in Indian mustard (*Brassica juncea* L.) genotypes under Rainfed Condition. Journal of Pharma Innovation 11(12):715-719.
- Vijay Kumar, Rakesh Kumar, V Singh, Gurdev Chand, J Kumar, Birender Singh, Balbir Dhotra 2021. Productivity and water use efficiency of Kinnow mandarin (citrus reticulate blanco) as influenced by drip trickle irrigation and hydrogel. Annals of Plant and Soil Research, 23: 363-367
- Arya, S.S., Devi, S., Ram, K., Kumar, S., Kumar, N., Mann, A., Kumar, A. and Chand, G. 2019. Halophytes: The plants of therapeutic medicine. Ecophysiology, abiotic stress responses and utilization of halophytes.11 :271-287.

Teaching Experience

- Teaching Sustainable farming, Modern Agricultural practices, Organic farming, integrated farming, Hydroponic, Aeroponics, Aquaponics, Abiotic stress responses in crops and reproductive biology etc. students.
- Developed different models of hydroponic system under NAHEP, NABARD & HADP
- Component for PG Course Major Advisor to 07 Masters and 06 PhD students, Co advisor/member- 175 students.
- In charge ICAR, ARS-NET preparation classes as well as conducted 26 Viva Voce of other state agricultural Universities.
- Dr. Sapalika Dogra (Ph.D. student) was selected as an Assistant Professor at SKUAST-Kashmir also Two students qualified ICAR, NET examination

Awards and Recognitions

- **Excellence in Teaching Award** in International conference on "Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS-2017) from 2nd December to 04th December 2017" by *Society for Scientific Development in Agriculture & Technology*.

- Conferred **Best Oral Presentation Award** In 5th J&K Agriculture Science Congress on "Climate Change Management for Sustainable Agriculture, Livestock Farming and Ecological Development" organized by Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu Chatha, Jammu, India. w.e.f. 14th October to 16th October, 2019.
- **SERS Fellow Award (GIASGT-2016)** for outstanding contribution in the field of Plant Physiology. The award was conferred to me by **Dr. Randir Singh Poswal,** Assistant Director General (Extension) on the occasion of International Conference on Global Initiatives Applied Sciences (GIASGT-2016) at SRM University Delhi-NCR Campus, Modinagar, Ghaziabad (U.P), India during 09-11 September, 2016.
- **Young Scientist Award** (GRISAAS-2015) for outstanding contribution in the field of Plant Physiology. The award was conferred to me by **Dr. Jeet Singh Sandhu,** Deputy Director General (Crop Science) and Dr Prof. Anil Kumar Singh (Vice Chancellor, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya), Gwalior (M.P.) on the occasion of National Conference on Global Research Initiatives for Sustainable Agriculture & Allied Sciences (GRISAAS-2015) at Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (M.P.) during 12-13, December, 2015.
- **Innovative Scientist of the Year Award-2017** for his outstanding contribution in the field of Abiotic stress responses in crop plants. The award was conferred on the occasion of five days International Conference on "***Innovative Approaches in Applied Sciences and Technologies***" which was held **at Nanyang Executive Centre, Nanyang Technological University, Singapore** during **June 19-23' 2017**.
- Conferred **Best poster presentation award** in International Conference on "Global Initiatives for Sustainable Development: Issues and strategies" at Bangkok, Thailand. Organized by Gochar Educational and Welfare Society Saharanpur (U.P.), India. w.e.f. 23rd June – 27th June, 2019.
- Received Appreciation Certificate at the National Conference of "Initiative Technological Interventions for Doubling Farmer Income (NaCIT-2018)" organized at Sher-e-Kashmir University of Agricultural Science and Technologies of Jammu, Chatha (J&K) India from 08-10 February 2018.
- Received Certificate for laboratory visit and interaction arranged in the Division of Plant Physiology, FBSc, SKUAST-Jammu, for the participants of ICAR short training course on "Advance Techniques and Tools for Functional Genomics in Crops" organized during October 4-13, 2017 at School of Biotechnology, Sher-e-Kashmir University of Agricultural Science and Technologies of Jammu, Chatha (J&K), under the aegis of Agricultural Education Division, Indian Council of Agricultural Research (ICAR), New Delhi.

Exposure of hydroponic technology among students and farmers

S. No.	Title of Training	Duration of training	Types of trainees	No. of trainees	Venue of training	Good quality photos of training
1.	Entrepreneurship on hydroponics (sponsored by IIT Jammu)	01	Students	48	Doda	
2.	Vocational skills on hydroponics	01	Students	14	SKUAST-Chatha	
3.	Importance of modern Agriculture	01	Students	129	SKUAST-Chatha	
4.	Empowers NCC Cadets with entrepreneurial spirit	01	Students	50	SKUAST-Chatha	
5.	Empowers NCC Cadets with entrepreneurial spirit	01	Students	45	SKUAST-Chatha	
6.	Future technologies for fodder production and leafy vegetables	01	Students	28	SKUAST-Kashmir	

7.	Sustainable approaches for production of crops.	01	Agricultural employees	79	Department of Agriculture, Udhampur	
8.	Empowers NCC Cadets with entrepreneurial spirit	01	Students	102	NCC Cadet, Unit, Nagrota	
9.	Vocational skills on hydroponics	01	Students	26	SKUAST-Chatha	
10.	Skill development program under Mission Youth's AVSAR Scheme (sponsored by IIT Jammu)	03	Students	75	GDC, Kishtwar	

11.	Awareness of Soilless technique in Kisan Mela	05	Students, Farmers, Entrepreneur.	More than 500	SKUAST-Chatha	
12.	Farmer Training programme held for the demonstration of hydroponic and fodder unit	01	Farmers	58	SKUAST-Chatha	
13.	Demonstration of hydroponics fodder production technology to the farmers	01	Students	100	GDC, Udhampur	
14.	Demonstration of hydroponics fodder production technology to the farmers	01	Farmers	50	SKUAST-Chatha	
15.	Vertical farming and hydroponics a new enterprise in smart agriculture	01	Students	128	Model Hr. Sec. School, Gaghwal, Samba	

VISION

A Vision for Sustainable, Organic, and Hydroponic Farming

As an academician deeply rooted in the field of Plant Physiology, I am committed to fostering a future where agriculture and sustainability go hand in hand. My vision extends beyond traditional farming practices to embrace sustainable, organic, and hydroponic farming—a future-oriented approach that is collaborative, inclusive, and responsive to the evolving needs of farmers, communities, and the environment.

A Mission-Driven Approach

At the heart of this vision lies a mission-driven, equitable, and innovative approach to farming.

The modern agricultural landscape requires solutions that are not only scientifically sound but also socially responsible. By integrating sustainable practices with scientific advancements, we can empower farmers with climate-resilient, resource-efficient, and high-yield farming techniques that minimize environmental degradation while maximizing productivity.

Collaboration and Inclusivity

True progress in agriculture cannot be achieved in isolation. It requires strong collaboration between academia, farmers, policymakers, entrepreneurs, and communities. Encouraging knowledge-sharing, participatory research, and farmer-led innovations will ensure that solutions are not only scientifically viable but also practically implementable.

Additionally, inclusivity ensures that small-scale farmers, women in agriculture, and marginalized communities have equal access to resources, technology, and education, thereby fostering a more just and resilient agricultural system.

The Interconnectedness of Agriculture and Society

Agriculture does not exist in a vacuum; it is deeply intertwined with other sectors, including water management, energy, biodiversity conservation, and public health. A sustainable farming approach acknowledges these interconnections and seeks to create synergistic solutions that benefit multiple sectors simultaneously.

For instance:

- Hydroponic farming can contribute to urban food security and reduce water consumption.
- Organic farming promotes soil health and biodiversity while eliminating harmful chemical residues in food.
- Sustainable agricultural policies can support rural livelihoods, food sovereignty, and climate action.

Building a Sustainable Future for Generations to Come

The ultimate goal is to build an agricultural system that is not only productive today but also sustainable for future generations. By embracing agroecology, regenerative agriculture, circular economy principles, and technology-driven solutions, we can create a food system that is resilient, resource-efficient, and environmentally conscious.

This vision calls for action, collaboration, and continuous innovation. By working together, we can pave the way for a sustainable and resilient agricultural landscape, ensuring food security, economic stability, and environmental well-being for all.

As an academician deeply rooted in the field of Plant Physiology. My vision for managing agricultural research is one that is collaborative, inclusive, and responsive to the needs of farmers and the environment. It is mission-driven, equitable, and innovative. It is a vision that recognizes the interconnectedness of agriculture with other sectors Together, through collaborative efforts, we can work towards building a more sustainable and resilient society for generations to come.

Date: 14.02.2025

Gurdev Chand