

# Curriculum Vitae

## Dr. JYOTI SINGH JADAUN

Assistant Professor  
Department of Botany  
Dayanand Girls Degree College, Civil Lines, Kanpur  
Kanpur-208001, UP, India.



## Personal Information

- Name : Jyoti Singh Jadaun
- Date of Birth : 08-07-1988
- Nationality : Indian
- Gender : Female
- Marital Status : Married
- Spoken Languages : English, Hindi (mother tongue)
- Present address : P - 10, Naveen Nagar, Kakadeo  
Kanpur-208005, UP, India
- e-mail : [jyotisingh.jadaun@gmail.com](mailto:jyotisingh.jadaun@gmail.com)  
: [jsjdgpg2017@gmail.com](mailto:jsjdgpg2017@gmail.com)

## Present Position:

### Assistant professor

Department of Botany  
Dayanand Girls Degree College, Civil Lines, Kanpur  
Kanpur-208001, UP, India

Joining date: 7<sup>th</sup> Oct 2017

## Post Ph.D Position:

- Worked as **Research Assistant** under Dr. R. S. Sangwan at Center of Innovative and Applied Bioprocessing [CIAB], Mohali, Punjab from 2<sup>nd</sup> May 2016 to 2<sup>nd</sup> Oct 2016.
- Worked as **DST-SERB National Post Doctorate Fellow (NPDF)** under Dr. Sudhir Pratap Singh at Center of Innovative and Applied Bioprocessing [CIAB], Mohali, Punjab from 3<sup>rd</sup> Oct 2016 to 6<sup>th</sup> Oct 2017.

## Permanent address:

H-70 B, D/O Mohan Swaroop, Gandhipuram Phase II  
Near hanuman Mandir, Gupta Nursery  
Post-Izzatnagar, Bareilly, U.P., India

Contact No. 05812320511, 09411921188

## Academic Qualifications:

**Ph.D in Life Sciences** (2016)

Jawaharlal Nehru University, Delhi (CSIR-CIMAP Lucknow-JNU PhD programme), India

CPI: 9.1/10

**Thesis Supervisor:** Prof. R. S. Sangwan

**Thesis title:** Isolation, Cloning and Characterization of Tryptophan Decarboxylase Gene from *Withania somnifera* Dunal (Ashwagandha) in Relation to Secondary Metabolite Biogenesis

**MSc in Botany** (Gold Medalist) (2009)

Department of Botany

M.J.P.R.U. Bareilly, Uttar Pradesh, India

Division/Class: 1<sup>st</sup>

**BSc with Zoology, Chemistry and Botany** (2007)

M.J.P.R.U. Bareilly, Uttar Pradesh, India

Division/Class: 1<sup>st</sup>

**Intermediate with Physics, Chemistry, Biology, Hindi and English** (2004)

Board of High school and Intermediate Education Uttar Pradesh, India,

Division/Class: 1<sup>st</sup>

**High School with Mathematics, Science, Social Science, English, Hindi and Art** (2002)

Board of High school and Intermediate Education, Uttar Pradesh, India,

Division/Class: 1<sup>st</sup>

## List of Publications:

### (a) Research Articles Published:

1. Defining the role of a caffeic acid 3-O-methyltransferase from *Azadirachta indica* fruits in the biosynthesis of ferulic acid through heterologous over-expression in *Ocimum*.  
Narnoliya LK, Neelam Sangwan, **Jadaun JS**, Bansal S, Sangwan RS  
**Planta, 253:1-13 (2021)**
2. High-frequency in vitro propagation and assessment of genetic uniformity and micro-morphological characterization of *Origanum majorana* L.A highly traded aromatic herb.  
Sandhya D, Jogam F, Manokari M, Shekhawat MS, **Jadaun JS**, Allini VR, Abbagani S  
**Biocatalysis and Agricultural Biotechnology 34:102024 (2021)**
3. Sustainable process for the production of cellulose by an *Acetobacter pasteurianus* RSV-4 (MTCC 25117) on whey medium.  
Kumar V, Sharma DK, Sandhu PP, **Jadaun JS**, Sangwan RS, Yadav SK  
**Cellulose, 28:103-116 (2021)**
4. WRKY1-mediated regulation of tryptophan decarboxylase in tryptamine generation for withanamide production in *Withania somnifera* (Ashwagandha).

**Jadaun JS**, Kushwaha AK, Sangwan NS, Narnoliya LS, Mishra S, Sangwan RS  
**Plant Cell Reports 39:1445-1465 (2020)**

5. Berry transcriptome: insights into a novel resource to understand development dependent secondary metabolism in *Withania somnifera* (Ashwagandha).  
Tripathi S, Sangwan RS, Mishra B, **Jadaun JS**, Sangwan NS  
**Physiologia Plantarum 168:148-173 (2020)**
6. Catalytic biosynthesis of levan and short chain fructooligosaccharides from sucrose-containing feedstocks by employing the levansucrase from *Leuconostoc mesenteroides* MTCC10508.  
**Jadaun JS**, Narnoliya LK, Agarwal N and Singh SP  
**International journal of biological macromolecules. 127:486-495 (2019)**
7. Overexpression of DXS gene enhances terpenoidal secondary metabolite accumulation in rosescented geranium and *Withania somnifera*: active involvement of plastid isoprenogenic pathway in their biosynthesis.  
**Jadaun JS**, Sangwan NS, Narnoliya LK, Singh N, Bansal S, Mishra B and Sangwan RS  
**Physiologia plantarum, 159(4):381-400 (2017)**
8. *Withania coagulans* tryptophan decarboxylase gene cloning, heterologous expression and catalytic characteristics of the recombinant enzyme.  
**Jadaun JS**, Sangwan NS, Narnoliya LK, Tripathi S and Sangwan RS  
**Protoplasma DOI 10.1007/s00709-015-09298 (2016)**
9. RNAi and homologous over-expression based functional approaches reveal triterpenoid synthase gene-cycloartenol synthase is involved in downstream withanolide biosynthesis in *Withania somnifera*.  
Mishra S, Bansal S, Mishra B, Sangwan RS, Asha, **Jadaun JS** and Sangwan NS  
**PLoS ONE, 11(2): e0149691. doi:10.1371/journal.pone.0149691, (2016)**
10. Effect of cadmium stress on inductive enzymatic and nonenzymatic responses of ROS and sugar metabolism in multiple shoot cultures of Ashwagandha (*Withania somnifera* Dunal).  
Mishra B, Sangwan RS, Mishra S, **Jadaun JS**, Sabir F and Sangwan NS  
**Protoplasma, 251(5):1031-45 (2014)**
11. Qualitative and quantitative variations in withanolides and expression of some pathway genes during different stages of morphogenesis in *Withania somnifera* Dunal.  
Sabir F, Mishra S, Sangwan RS, **Jadaun JS** and Sangwan NS  
**Protoplasma, 250(2):539-49 (2013)**

**(b) Research articles under review/preparation:**

1. Production of prebiotic levan type fructooligosaccharides by using an endolevanase gene isolated from *Bacillus polymyxa* ATCC 842.  
**Jadaun JS**, and Singh SP

(under preparation)

**(c) Review Articles:**

1. Biodegradation of Plastics for Sustainable Environment  
**Jadaun JS**, Shilpi Bansal, Ankit Sonthalia, Amit K Rai, Sudhir P Singh **Bioresource Technology**, 126697, 347.  
DOI: 10.1016/j.biortech.2022.126697 (2022)
2. Synbiotics: Necessity of Today's Meal.  
Lokesh KN and **Jadaun JS** (corresponding author)  
**Bioprocessing Biotechniques** : 2155-9821. DOI: 10.4172/2155-9821.1000332 (2018)
3. Pectinase: A Useful Tool in Fruit Processing Industries.  
Heena V, Lokesh KN and **Jadaun JS**  
**Nutri Food Sci Int J**. 5(5): 555673. DOI:10.19080/NFSIJ.2018.05.555673 (2018)
4. Prebiotic Oligosaccharides: Special Focus on Fructooligosaccharides, Its Biosynthesis and Bioactivity.  
Singh SP, **Jadaun JS**, Narnoliya LK and Pandey A  
**Applied Biochemistry and Biotechnology**. 183(2):613-35 (2017).
5. Medicinal plant transcriptomes: The new gateways for accelerated understanding of plant secondary metabolism.  
Tripathi S, **Jadaun JS**, Chandra M and Sangwan NS  
**Plant Genetic Resources** DOI: 10.1017/S1479262116000162 (2016)

**(d) Book Chapters:**

1. Enzymatic biosynthesis of carbohydrate biopolymers and uses thereof.  
Sharma M, **Jadaun JS**, Upadhyay SK and Singh SP  
**John Wiley & Sons**, 254-277(2021)
2. Microbial Applications in Organic Acid Production.  
**Jadaun JS**, Rai AK and Singh SP  
**John Wiley Sons**, 104-124 (2021)
3. Resource Recovery from the abundant agri-biomass.  
Bansal S, **Jadaun JS** and Singh SP  
**John Wiley Sons**, 1:135 (2021)
4. Role of plant long noncoding RNAs in the regulation of plant metabolism.  
Kaushal G, **Jadaun JS**, Narnoliya LK and Singh SP

**Elsevier, 1:313-337 (2021)**

5. Sustainable Production of Biofuels Through Synthetic Biology Approach.  
Sandhya D, Jogam P, Narnoliya LK, Srivastava A, and **Jadaun JS**, (corresponding author)  
**John Wiley Sons, 1:289-312 (2020)**
6. Chimeric Enzyme Designing for the Synthesis of Multifunctional Biocatalysts.  
**Jadaun JS**, Narnoliya LK, Srivastava A and Singh SP  
**Elsevier, <https://doi.org/10.1016/B978-0-12-819820-9.00008-9> (2020)**
7. Enzymatic Systems for the Development of Juice Clarification Strategies.  
Narnoliya LK, **Jadaun JS**, Chownk M and Singh SP  
**Elsevier, <https://doi.org/10.1016/B978-0-12-819820-9.00018-1> (2020)**
8. The Phytochemical Composition, Biological Effects and Biotechnological Approaches to the Production of High-Value Essential Oil from Geranium.  
Narnoliya LK, **Jadaun JS** and Singh SP  
**Springer, DOI: 10.1007/978-3-030-16546-8<sub>1</sub>2(2019)**
9. Biotechnological Avenues for Fruit Juices Debittering.  
Narnoliya LK and **Jadaun JS** (corresponding author)  
**Springer, DOI: <https://doi.org/10.1007/978-981-13-3263-0-8> (2018)**
10. Synthetic Biology Advances for Enrichment of Bioactive Molecules in Plants.  
Singh SP, **Jadaun JS** and Narnoliya LK  
**Springer, DOI: 10.1007/978-981-13-2251-8-6 (2018)**
11. Management of Agro-industrial Wastes with the Aid of Synthetic Biology.  
Narnoliya LK, **Jadaun JS** and Singh SP  
**Springer, Singapore [doi.org/10.1007/978-981-10-7434-9-2](https://doi.org/10.1007/978-981-10-7434-9-2) (2018)**
12. Plant Metabolic Engineering, Omics Technologies and Bio-engineering: Towards Improving Quality of Life.  
Sangwan NS, **Jadaun JS**, Narnoliya LK, Mishra B, Tripathi S and Sangwan RS  
**Elsevier, DOI: <https://doi.org/10.1016/B978-0-12-815870-8.00009-7> (2018)**

**(e) Patents:**

1. A process for production of fructooligosaccharides and levan from plant biomass or fully or partially processed products or by-products or residues by employing levansucrase from *Leuconostoc mesenteroides* MTCC10508, and uses thereof.  
Inventors: Sudhir P. Singh, **Jyoti S Jadaun** and Lokesh K Narnolia  
**Application no.: 201811000595**

2. Integrated as well as module(s) selective process for production of whey proteins, bacterial cellulose, calcium citrate and D-tagatose from liquid whey.  
Inventors: Sudesh Kumar Yadav, Rajender Singh Sangwan, Vinod Kumar, Pankaj Preet Sandhu, Shushil K Rai, Lokesh K Narnolia and **Jyoti S Jadaun**  
**Application no.: 201711024828**
3. An efficient process for production of bacterial cellulose from tomato juice using Acetobacter pasteurians RSV-4.  
Inventors: Vinod Kumar, Rajender Singh Sangwan, **Jyoti S Jadaun**, Devendra K Sharma, Priyanka Prasad and Deepak Mehta  
**Application no.: 201711024694**

### Oral presentations:

1. Characteristics of O-Methyltransferases of *Ocimum basilicum*.  
**Jyoti Singh Jadaun** and Rajender S. Sangwan (2011),  
Conference on *Ocimum*: Ancient heritage to modern enigma 28-29 July 2011 at CIMAP, Lucknow, India.
2. Dual Role of Reactive Oxygen Species In Plant Biology.  
**Jyoti Singh Jadaun**, Neelam S. Sangwan and Rajender S. Sangwan  
In conference on Science Day Seminar in 2012 at CIMAP, Lucknow, India.
3. Isolation of Key Gene Associated With Terpenoids Biosynthesis from Geranium (*Pelargonium Graveolens*) Leaf.  
**Jyoti Singh Jadaun**, Neelam S. Sangwan and Rajender S. Sangwan  
Symposium on Women Power in Cutting Edge Biotechnology at Amity University, Lucknow Campus (2013).
4. Dynamics of secondary metabolite biosynthesis in *Withania somnifera*.  
**Jyoti Singh Jadaun**, Neelam S. Sangwan and Rajender S. Sangwan  
In conference-Jigyasa at CSIR-CIMAP, Lucknow (2014).

### Invited Lectures:

1. 1. Delivered guest lecture on the topic Potential of Medicinal Herbs to cure Covid -19 in the National Webinar on Scope of Aurvedic Medicines in the Treatment of Covid -19 organized by S. J. N. P. G. College, Lucknow on 13, May, 2020.
2. Delivered an invited talk on the topic Medicinal Plants: A boon from Natures desk in the workshop Covid 19 and its issues organized by S. R. Institute of Management and Technology, Lucknow, 27 May 2020.

### Poster presentations:

1. Developmental regulation of isoprenoid biosynthesis in Rose-Scented *Geranium (Pelargonium spp.)* leaf.  
**Jyoti S. Jadaun**, Neha Singh, Neelam S. Sangwan, Lokesh K. Narnoliya and Rajender S.

Sangwan

In conference on Stress, development and adaption: biochemical basis and biotechnological approaches at Lucknow University, Lucknow (2013).

2. Identification, molecular cloning and expression analysis of UDP-glucosyltransferase gene from fruits of *Withania somnifera*.

**Jyoti S. Jadaun** and Rajender S. Sangwan

In conference on CARBOXXIX conference - ChemBio Innovations for Bioproducts (2014).

3. Identification, isolation and cloning of tryptophan decarboxylase gene from *Withania somnifera* L. dunal.

**Jyoti S. Jadaun**, Neelam S. Sangwan, Amit K. Kushwaha and Rajender S. Sangwan

In symposium on International conference on medicinal plants: resource for affordable new generation healthcare (ICOMP-2015) at CIMAP Lucknow (2015).

### Fellowships and Certificates:

- Awarded merit scholarship by Adarsh Mahavidyalaya, Hardua, Nawabganj, Bareilly, U.P during graduation in 2007.
- Qualified CSIR/UGC National Eligibility Test (NET-2009) in Life Sciences and junior research fellowship awarded by UGC, India, from Sep 2010 to Sep 2012.
- Qualified GATE exam conducted by IIT- Guwahati in Feb 2010.
- Qualified Indian Council of Agricultural Research National Eligibility Test (ASRB-NET 2017) for lectureship in plant physiology.
- Awarded DST SERB-NPDF fellowship in Oct 2017.

### Awards:

- Covid Awareness Award by SR Group of Institutions in 2020.
- Awarded University Gold Medal in Plant Science in 2009 for securing first position in post-graduation.
- First prize in Hindi seminar in conference on Hindi Saptah Celebration at CSIR-CIMAP, Lucknow.

### Experimental skills:

- **Plant molecular biology techniques:** DNA and RNA isolation, RACE amplification technique, Restriction digestion, Ligation, Polymerase Chain Reaction (PCR), Gene cloning, Sangers sequencing, *E. coli* transformation, Recombinant construct preparation, Expression analysis by real time PCR, Protoplast isolation and transformation etc.
- **Bioinformatics:** Basic gene analysis techniques (BLAST, CILUSTALW, Primer designing), Phylogenetic tree analysis, Secondary structure prediction, Homology modelling etc.
- **Plant biochemistry and protein/enzyme biology:** Recombinant protein expression in *E. coli*, Protein purification techniques, Protein electrophoresis (SDSPAGE), Western blotting, Re-

combinant enzymes assay, Enzyme kinetics etc.

- **Plant tissue culture:** Regeneration of different in vitro tissues of medicinal plants.
- **Genetic engineering:** Construct preparation in binary vectors for overexpression and silencing studies. *Agrobacterium tumefaciens* mediated genetic transformation and subsequent analysis (gene expression analysis, Southern blotting analysis and metabolite profiling) of transgenic plants.
- **Instrument handling:** PCR, RT-PCR, UV-visible and fluorescence spectroscopy, HPLC, TLC, GC, FPLC, Fluorescence microscopy etc.
- **Chemistry:** Natural products extraction (Withanoloides, Tryptamine and Essential oil extraction) etc.

### **Declaration:**

I hereby declare that the details stated above are true and correct to the best of my knowledge.

Jyoti Singh Jadaun

March 31, 2022