

## Curriculum Vitae

### Prof Shyam Shanker Singh

Professor in Forestry & Environmental Sciences  
Department of Forestry, Wildlife  
& Environmental Sciences  
(School of Natural Resources)  
Guru Ghasidas University  
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Sikaraul, Varanasi-221001, Uttar Pradesh

**Area of Specialization:** Forest Tree Improvement & Tree Mutagenesis, Environment Monitoring and Management, EIA, Forest Watershed Management through RS & GIS

### Brief outline of the research interest:

The area of research interest is forest tree improvement through induced mutagenesis. The radiosensitivity level and the induced mutants adaptability have been carried out for its variability induction, wood quality and better root system of different forest tree species eg. *Albizia lebbek*, *Albizia procera*, *Albizia chinensis*, *Bauhinia variegata*, *Bauhinia purpurea*, *Bauhinia retusa*, *Robinia pseudoacacia*, *Leucaena leucocephala*, *Populus deltoides*, *Pongamia pinnata*.

For *Populus deltoides*, clones have been taken to induce mutants for its fast and more wood production and to be adaptive for a wider climate range in India.

Presently working on the genetic diversity analysis and mutant induction for better wood quality in *Terminalia tomentosa* and *Terminalia arjuna* in Central India.

We are also working on forested watershed LULC pattern and the forest tree diversity variability along the watershed catchment.

The influence of thermal power plants pollutants on carbon fixation, stomatal conductance, wood quality, regeneration and pattern of change in diversity level of forest in Central India has also been worked out.

### Academic Qualifications:

D.Phil. (Botany)	1986		H N B Garhwal University, Srinagar, Uttrakhand, India
M. Sc. (Botany)	1980	Ist Div.	H N B Garhwal University, Srinagar, Uttrakhand, India
B.Sc. (Bot., Zoo., Chem.)	1978	Ist Div.	H N B Garhwal University, Srinagar, Uttrakhand, India
XII <sup>th</sup> (Science)	1974	Ist Div	U.P. Board, Allahabad, UP, India
X <sup>th</sup>	1972	Ist Div.	U.P. Board, Allahabad, UP, India

### Work Experience:

**Professor**, Department of Forestry, Wildlife & Environmental Sciences, Guru Ghasidas University, Bilaspur, Chhattisgarh, India since 9<sup>th</sup> September 2004 to till date.

**Reader**, Department of Botany, H N B Garhwal University, Tehri Campus, Uttarakhand, India since 28<sup>th</sup> July 1998 to 8<sup>th</sup> September 2004.

**Senior Lecturer**, Department of Botany, H N B Garhwal University, Tehri Campus, Uttarakhand, India since 28<sup>th</sup> July 1991 to 27<sup>th</sup> July 1998.

**Lecturer**, Department of Botany, H N B Garhwal University, Tehri Campus, Uttarakhand, India since 28<sup>th</sup> July 1986 to 27<sup>th</sup> July 1991.

**Research Projects:**

Title: **“Application of RS & GIS for Integrated Management of Hasdeo River Watershed (A Tributary of Mahanadi River) in Chhattisgarh”**

Funding Agency: MoEF&CC, New Delhi, India

Amount: Rs. 50.03 Lacs.                      Duration: January 2013- December 2018

Title: **“Assessment of Air Pollutants and its Impact on Tropical Forests of Northern Chhattisgarh”**

Funding Agency: MoEF&CC, New Delhi, India

Amount: Rs. 57.19 Lacs.                      Duration: October 2012- October 2016

Title: **“Watershed management of Arpa River Basin area in Chhattisgarh through Remote Sensing Technique”**

Funding Agency: CCOST, Raipur, Chhattisgarh, India

Amount: Rs. 2.0 Lacs.                      Duration: September 2008- September 2010

**Research Guidance:**

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| ▪ Numbers of Research Scholars awarded Ph.D. Degree              | : | 09 |
| ▪ Numbers of Research Scholar submitted Ph.D. thesis in Aug.2019 | : | 02 |
| ▪ Numbers of Research Scholars working for Ph.D. programme       | : | 02 |

**Editorship/Reviewer affiliation:**

- Editorial Board Member, International Journal of Environment and Bioenergy, USA.
- Editorial Board Member, International Journal of Natural Resource, Ecology and Management, USA.
- Editorial Board and National Advisory Committee Member, International Journal of Scientific Review and Research in Engineering and Technology (IJSRRET), India.
- Associate Editor, Chhattisgarh Journal of Science & Technology, GGV, India.
- Reviewer, SERB, Department of Science and Technology, New Delhi, India

**Membership of National/International Societies:**

- Member, International Union of Forest Research Organization (IUFRO), Austria
- Senior Member, Asia-pacific Chemical, Biological & Environmental Engineering Society (APCBEEES), Hong Kong, China
- Member, American Association for Science and Technology, USA

- Member, Project Evaluation Committee (PEC), G B Pant National Institute of Himalayan Environment and Development, Kosi- Katarmal, Almora, Uttarakhand, India
- Member, National Accreditation Assessment Committee (NAAC), India
- Fellow, International Society for Conservation of Natural Resources (FNRS), BHU, India
- Life Member, Indian Society of Agro-forestry, NRCAF, Jhansi, India.

#### **Visit Abroad:**

- Attended International Conference on “Restoring Forests: What Constitutes Success in the 21<sup>st</sup> Century?” at Purdue University, Lafayette, Indiana, USA during October 14-16, 2014.
- ✓ Worked at Department of Forestry and Natural Resources, Purdue University, Lafayette, Indiana, USA from October 17-21, 2014.
- Attended International Conference on “Tropical Forestry Change in Changing World” at Kasetsart University, Bangkok, Thailand during November 17- 20, 2008.
- ✓ Worked at Faculty of Forestry, Kasetsart University, Bangkok, Thailand from November 21- December 1, 2008.
- Attended 1<sup>st</sup> Forestry Congress and International Agro-forestry Conference at Forest Research Institute, Havana, Cuba during November 22- 24, 1989.
- ✓ Worked at Forest Research Institute, Havana, Cuba from November 25-30, 1989.

#### **Seminar and Conferences organized as Convener:**

Convener of National Conference entitled: “**Forest, Environment and Climate Change: Issues and Challenges**” held at Guru Ghasidas University, Bilaspur-495009, Chhattisgarh, India during January 30-31, 2012.

Convener of National Seminar entitled: “**Forest and Environment in India: Contemporary Issues and Challenges**” held at Guru Ghasidas University, Bilaspur-495009, Chhattisgarh, India during February 18-19, 2008.

Convener of National Seminar entitled: “**Forest and Forestry Techniques**” held at Guru Ghasidas University, Bilaspur-495009, Chhattisgarh, India during March 23-24, 2007.

Convener of National Seminar entitled: “**Recent Advances in Forest Sciences**” held at Guru Ghasidas University, Bilaspur-495009, Chhattisgarh, India during January 30-31, 2006.

Convener of National Seminar entitled: “**Tree Biology of Himalayan and Tropical Species**” held at HNB Garhwal University, Tehri Campus, Tehri-249001, Uttarakhand, India during April 19-21, 1993.

**National/International Seminar/Conferences attended : 30**

### **Programme (Refresher course) organized as Coordinator:**

- Refresher Course on Environmental Science (01 /09/ 2016 to 23/09/ 2016).
- Refresher Course on Environment, Forestry and Disaster Management (ID) (21/01/16 to 11/02/16).

### **Administrative Experiences:**

- **Executive Council Member**, Guru Ghasidas University, Bilaspur, CG, India (April 2018- March 2019).
- **Dean**, School of Natural Resources, Guru Ghasidas University, Bilaspur, CG, India (September 2012- September 2015).
- **Head**, Department of Forestry, Wildlife & Environmental Sciences, Guru Ghasidas University, Bilaspur, CG, India (September 2004 –September 2013).
- **Head**, Department of Law, Guru Ghasidas University, Bilaspur, CG, India (October 2016- November 2017)
- **Finance Officer**, Guru Ghasidas University, Bilaspur, CG, India (August 2017- Continue)
- **Executive Council Member**, Guru Ghasidas University, Bilaspur, CG, India (December 2012- September 2015).
- **Chairman**, Board of Studies, Forestry, Wildlife & Environmental Sciences, Guru Ghasidas University, Bilaspur, CG, India (October 2004-October 2013).
- **Internal Quality Assessment Committee (IQAC) Member**, Guru Ghasidas University, Bilaspur, Chhattisgarh (February 2019- continue)
- **Nodal Officer**, CBCS, Guru Ghasidas University, Bilaspur, CG, India (January 2015- June 2018)
- **Nodal Officer**, Innovation Club, Guru Ghasidas University, Bilaspur, CG, India (February 2015- January 2019)
- **Academic Council Member**, Guru Ghasidas University, Bilaspur, CG, India (September 2012- September 2015, 30th October 2015-Continue)
- **Chief Warden**, Guru Ghasidas University Hostels, Bilaspur, CG, India (August 2009- February 2018)
- **Finance Officer**, Guru Ghasidas University, Bilaspur, CG, India (August 2010- March 2011)
- **Finance Committee Member**, Guru Ghasidas University, Bilaspur, CG, India (December 2012- September 2015).
- **Building Committee Member**, Guru Ghasidas University, Bilaspur, CG, India (July 2012- September 2015).
- **Convener**, Consultant Evaluation Committee & Consultant Monitoring Committee,

Guru Ghasidas University, Bilaspur, CG, India (February 2010- July 2016).

- **Convener**, University Garden Development Division, Guru Ghasidas University, Bilaspur, CG, India (November 2004- 2017).
- **Internal Quality Assessment Committee (IQAC) Member**, Guru Ghasidas University, Bilaspur, Chhattisgarh (2012- 2014)
- **Academic Staff College Advisory Committee Member**, Guru Ghasidas University, Bilaspur, CG, India (August 2009- August 2011; January 2012- January 2014).
- **Rajbhasa Aayog Committee Member**, Guru Ghasidas University, Bilaspur, CG, India (Oct 2012- Oct 2015).
- **Member of Library Committee**, Guru Ghasidas University, Bilaspur, CG, India (2009- Continue).
- **Dean**, Faculty of Natural Resources, Guru Ghasidas University, Bilaspur, CG, India (September 2005-September 2007).
- **Dean (Extra Charge)**, Faculty of Physical Education, Guru Ghasidas University, Bilaspur, CG, India (December 2005- September 2007).
- **Executive Council Member**, Guru Ghasidas University, Bilaspur, CG, India (December 2005- September 2007).
- **Executive Council Member**, Guru Ghasidas University, Bilaspur, CG, India (February 2008- January 2009).
- **Head**, Department of Biotechnology, Guru Ghasidas University, Bilaspur, CG, India (Dec 2, 2006- Jul 3, 2007).
- **Planning and Evaluation Board Member**, Guru Ghasidas University, Bilaspur, CG, India (November 2005- September 2007).
- **Central Purchase Committee Member**, Guru Ghasidas University, Bilaspur, CG, India (October 2004- September 2008).
- **Head**, Department of Botany, HNB Garhwal University Tehri Campus, Badshahithaul, Tehri Garhwal, UK, India (July 1986-September 2004).
- **Assistant Proctor**, HNB Garhwal University, Tehri campus, Badshahithaul, TehriGarhwal, UK, India (July 1990-August 1991).
- **Assistant Dean Student Welfare**, HNB Garhwal University, Tehri Campus, Badshahithaul, Tehri Garhwal, UK, India (Dec. 1992 – Jan 1996).
- **Assistant Proctor**, HNB Garhwal University, Tehri Campus, Badshahithaul, Tehri Garhwal, UK, India (July 2002- June 2003).
- **Assistant Proctor**, HNB Garhwal University, Tehri Campus, Badshahithaul, Tehri Garhwal, UK, India (July 2004- September 2004).

## Research Publications:

- Rawat, Veer Singh, **Singh, S S**, Wani, Mohd. Rafi, Singh, Ankita **2019**. Potential of fractionated doses of gamma rays to stimulate growth and yield of *Amaranthus caudatus* in M1 (first filial generation) and M2 (second filial generation) Generations. *Forestry Research and Engineering: International Journal*, 3(3):57-61.
- **Singh, S S**, Kharkwal, Harendra, Singh, Ajay K, Upadhyay, Saurabh, Mahato, Anupama **2019**. Multi-temporal land use/cover change and its driving forces analysis using IRS-1D & P6 LISS3 satellite at early spring in Gej subwatershed of Hasdeo River in Chhattisgarh, India. *Interciencia*, 44(6): 1-15.
- Singh, Ankita, **Singh, S S** **2019**. Influence of Auxins on the physiological adaptability of Sal (*Shorea robusta*) saplings outside its natural habitat of AABR, Chhattisgarh. *Eco-Chronicle*, 14(1): 34-38.
- Mahato, Anupama, **Singh, S S** **2019**. Influence of Village relocation on ground vegetation dynamics in the core area of Achanakmar Tiger Reserve (ATR), Chhattisgarh, India. *Eco-Chronicle*, 14(1): 21-26.
- Wani, Mohd. Rafi, **Singh, S S** **2019**. Genetic variation, structure and conservation status of *Terminalia arjuna* L. (Arjun) in Achanakmar Amarkantak Biosphere Reserve (AABR), Central India. *Tanzania Journal of Forestry and Nature Conservation*, 88(1). 4-17.
- Wani, Mohd. Rafi, **Singh, S S**, Sharma, V **2018**. Biochemical composition and photosynthetic activity of *Pongamia pinnata* (L.) Pierre in response to acute  $^{60}\text{Co}$   $\gamma$ -irradiation. *Journal of Forestry Research (Springer)*, 34: 1221-1231.
- Wani, Mohd. Rafi, **Singh, S S** **2018**. Influence of different pre-sowing seed treatments on germination and early growth behaviour of *Terminalia arjuna*: A potential medicinal tree. *IJSRMS*, 4(12): 45-48.
- Rawat, Veer Singh, **Singh, S S**, Wani, Mohd. Rafi, Singh, Ankita **2017**. Influence of Continuous Gamma Irradiation on Morpho-agronomic Characteristics of *Amaranthus caudatus* in M1 and M2 Generations, *American Journal of Agriculture and Forestry*, 5(4):130-136.
- Keshari, P, Jeet P., **Singh S S** **2017**. TVOCs concentration status and its correlation with Ozone concentration in different seasons at GGU campus, Bilaspur (CG), India. *Journal of Pollution Effects & Control*, 5(1):1-4.
- Wani, Mohd. Rafi, **Singh, S S** **2017**. Sensitivity and Potential of *Terminalia tomentosa* Roxb. towards Different Gamma Irradiation Exposure Regimes at Early

Seedling Growth Phase. *International Journal of Science and Research (IJSR)*, 6(1): 2409-2418.

- Wani, Mohd. Rafi, **Singh, S S 2016**. Correlation Dynamics of Germination Value, Germination Energy Index and Germination Speed of *Pongamia pinnata* (L.) Pierre Seeds of Pendra Provenance, Chhattisgarh, India. *International Journal of Research in Agriculture and Forestry*, 3(4):28-32.
- Wani, Mohd. Rafi and **Singh, S S 2016**. Variation in leaf morphological traits of *Terminalia arjuna* Roxb. In natural population of lower parts of Achanakmar - Amarkantak Biosphere Reserve (AABR) of Central India. *International Journal of Advanced Research*, 4(1): 484-491.
- Singh, Ajay K, **Singh, S S**, Singh, Pushpraj, Chandel, Parmeshwar **2014**. Remote Sensing Techniques for Land Use Mapping in Lower Agar Sub Watershed, Chhattisgarh, India. *Global Journal of Multidisciplinary Studies*, 3(11): 129-136.
- **Singh, S S** and Singh, Ajay K **2013**. Spatio-temporal change detection for LULC and its impact on Hasdeo River basin of Central India. *Int. J. Rec. Sci. Res.*, 4 (6): 925 – 930.
- Singh, Ajay K and **Singh, S S** 2012. Exploring the spatio-temporal dynamics of forest land use/ land cover changes in Ahiran sub watershed of Central India. *For. Rev.*, 43: 19-23.
- Bhat,S J A, **Singh, S S** and Geelani, Syed Maqbool **2012**. Studies on the Origin and Contribution of Important Tributaries to Arpa River Watershed in India. *Int. J. Env. & Bioen.*, 4(1): 15-21.
- Singh, Ajay K and **Singh, S S** **2012**. FLULC mapping and assessment of a typical sub watershed of Central India using IRS-P6 LISS 3 data. *J. Bio. &Env. Sci.*, 2(9): 26-32.
- Singh, Ajay K and **Singh, S S** **2011**. The forest land use/land cover mapping through RS technique in Chornai sub watershed of Hasdeo river basin of Chhattisgarh, India. In proceeding “Young Researchers 2011” of 12<sup>th</sup> International Conference for Ph.D. Students, Young Scientists and Pedagogues organized by Faculty of Natural Science, Constantine de Philosopher University, Nitra (Slovakia, Europe).pp. 458-466.
- **Singh, S S**, Singh, Ajay K and Vandana **2011**. Forest Type Variations and Catchment Status in the Bamni Sub Watershed of Hasdeo River Basin in Chhattisgarh, India. *J. Bio. & Eco. Sci.*, 1(1): 95-102.
- Singh, Ajay K and **Singh, S S** **2011**. Forest Vegetation Analysis and Land Cover Assessment in Tan Sub Watershed of Hasdeo River Basin, Chhattisgarh, India. In proceeding of the FIG Working Week 2011, Bridging the Gap between Cultures, Marrakech, Morocco (Africa), 18-22 May 2011. pp. 1-11.

- Singh, Ajay K and **Singh, S S 2010**. Upper Hasdeo Sub Watershed Status in Hasdeo River Basin at Chhattisgarh, India. In Proceeding of the XXIV FIG International Congress 2010, Sydney, (Australia) from 11-16 April, 2010. Pp 1-6.
- **Singh, SS** and Singh, Ajay K **2009**. Variability and distribution in *Acacia*. "In Biodiversity to Biotechnology: IPR" (Eds. A. Jaiswal and G Das, NAROSA Publication), New Delhi. pp 250-262.
- Chauhan, P S and **Singh, S S 2008**. Radiosensitivity of *Populus deltoids* middle aged clones (12 months) to gamma rays and its synergetic effects with Stik. *Ind. J. For.*, 31(3).
- **Singh, S Sand Vandana2008**. Sensitivity of *Albizia julibrissin Durazz* Seeds to Gamma Rays. In proceeding of the FORTROP II: Tropical Forestry Change in a Changing World, 17-20 November 2008, Kasetsart University, Bangkok, Thailand. Pp 25-39.
- **Singh, S S** and Chauhan, P S **2007**. Sensitivity of *Populus deltoids* clones to gamma rays and its combination effects with Stik in dormant phase. *Chh. J. Sci. Tech.*, (3-4): 1-12.
- Chauhan, P S and **Singh, S S 2007**. Sensitivity of *Populus deltoids* young age stem cuttings (6 months) and its synergistic effects with Kinetin. *Ind. J. Agrofor.*, 9(1): 47-52.
- Chauhan, P S and **Singh, S S 2007**. Effects of gamma rays and its combination with STIK 500ppm on *Populus deltoids*. *Indian J. Trop. Biodiv.*, 15 (1): 53-60.
- **Singh, SS**, Kumar P and Rai A K. **2006**. Ultraviolet radiation stress: Molecular and Physiological adaptation in trees. In "Abiotic Stress Tolerance in Plants: Towards the improvement of Global Environment and Food" (Eds. A K Rai and T Takabe), Springer, Netherlands. Pp 91-110.
- **Singh, SS** and Vandana**2005**. Radiosensitivity of *Albizia procera* seeds to gamma rays in germination and early seedling growth behaviour. *Chh. J. Sci Tech.*, Vol. 2: 173-182.
- **Singh, S Sand Sujata 2004**. Effect of gamma rays on seed germination and seedling growth of *Robinia pseudoacacia*. *Ind. J. Agrofor.* 6(1): 33-38.
- Vandana and **Singh, SS 2003**. Effect of gamma rays on growth and survival of *Albizia procera*. In Proc. XII National Symposium of Environment, June 2003 (Ed. V. Venkat Raj *et. al.*, BARC, India). pp. 362-367.
- **Singh, S Sand Paliwal, G S 1994**. Regeneration potential of *Populus deltoids* I. Influence of Stik on rooting and shoot growth. In co-memorable volume for Prof. Dalbeer Singh, Vistas in seed Biology (Eds. Tribhuwan Singh and P.C. Trivedi, India), pp. 322-331(Vol. II).
- **Singh, S S 1992**. Sprouting and shoot growth behaviour in stem cuttings of *Leucaena leucocephala* I. Effect of IAA, GA3 and Niagara, *Leucaena Research Report* (USA) 10:30-31.



- **Singh, S S 1992.** Rooting and regeneration potential of stem cuttings *Aerva sanguinolenta* Linn. As influenced by ethyl hydrogen-1-propylphosphonate (Niagara). *Acta Bot. Indica.* 20(2): 294-296.
- **Singh, SS 1992.** Sensitivity of cotyledonary leaves of *Leucaena leucocephala* to gamma rays. *Leucaena Research Report*, USA 13:46-48.
- Sharma, B N, **Singh, S Sand Paliwal, GS 1987.** Effects of Niagara and GA3 on fruits abscission and fruit growth of *Pyruspashia*. *Indian J. For.* 19(3): 226-230.
- **Singh, SS and Paliwal, G S 1987.** Sensitivity of *Albizia lebbek* seeds to gamma rays. *Ind. For.* 113 (7): 490-500.
- **Singh, SS and Paliwal, G S 1986.** Growth and germination sensitivity of *Leucaena leucocephala* to different continuous and fractionated doses of gamma rays. *Leucaena Research Report*, USA (7):68-69.
- **Singh, S Sand Paliwal, G S 1986.** Influences of ethyl hydrogen-1-propylphosphonate (Niagara) on seed germination and early seedling growth of *Leucaena leucocephala*, *Leucaena Research Report*, USA (7): 70-71.
- Paliwal, D P, **Singh, SS**, Thapar, H S and Paliwal, **GS 1986.** Effect of sowing orientation on germination of pine seeds. *Curr. Sci.* 55(8): 415-419.
- **Singh, SS and Paliwal, G S 1986.** Some aspects and prospects of plants conservation in Garhwal. Eds. Gyanoday Publication, Nainital.
- **Singh S S**, Sharma, B N and Paliwal, G S 1985. Influence of Niagara and GA3 on seed germination seedling growth and cotyledonary expansion of *Acacia catechu*. *Ind. J. For.* 8(1): 41-46.
- **Singh, S Sand Paliwal, G S 1985.** Effect of Stik on rooting and regeneration of stem cutting of *Aerva sanguinolenta* L. *Curr. Sci.* 54(18): 920-923.
- **Singh, S Sand Paliwal, G S 1985.** Influence of ethyl hydrogen-1-prohylphosphate (Niagara), IAA and GA3 on the lenticles of *Leucaena leucocephala* (Lam) de Witt. *Acta Bot. Indica*, 13(2):228-232.
- **Singh, S Sand Paliwal, G S 1985.** Induction of the Lenticel Meristem as influenced by Niagara, IAA and GA3 in the stem cuttings of *Albizia lebbeck* Benth. *J. Tree Sci.*, 4(2): 53-58.
- **Singh, S Sand Paliwal, G S 1982.** Vegetative multiplication: A tool for conservation and utilization of tree gene resources of Himalayas. *JOHSARD* 5-6:59-65.
- **Singh, S Sand Paliwal, G S 1982.** Effect of Niagara on sprouting and shoot growth of *Populus deltodes* Bartr. Ex. March. *Acta Bot. Indica.* 12(22): 90-93.
- Paliwal, G S and **Singh S S 1981.** Importance of basic researches in Botany on the growth and development of rural economy in Garhwal Himalayas. *J. Indian Bot. Soc.* 60: XIV-XVI.