

## Shivendra V. Sahi

Department of Biology, Western Kentucky University, Bowling Green, KY 42101 USA  
Phone: 270 745-6012; Fax: 270 745-6856; E-mail: shiv.sahi@wku.edu

### Professional Preparation

B.S. Gorakhpur University, India, 1975, Biology  
M.S. Laurentian University, Sudbury, Canada 1983, Biology  
Ph.D. North Carolina State University, Raleigh, North Carolina 1992, Botany/Biotechnology

### Professional Appointments

2006- Assistant Director, Applied Research & Technology Program, OCSE, WKU  
2005- Professor, Department of Biology, Western Kentucky University, KY  
2000-2004 Director, Biotechnology Center, Western Kentucky University, KY  
2000-2005 Associate Professor, Department of Biology, Western Kentucky University, KY  
1998-2000 Assistant Professor, Department of Biology, Western Kentucky University, KY  
1992-1997 Assistant Professor, Department of Biology, Alabama State University, AL

### Publications (selected publications in last 3 yrs)

- 1) Starnes, D, A. Jain, **S.V. Sahi**. In plant engineering of gold nanoparticles of desirable geometries by fine tuning growth conditions: an eco-friendly approach. *Environ. Sci. Technol.* (2010) (in review).
- 2) Padmanabhan, P., K. Raghothama, **S. V. Sahi**. Suppression subtractive hybridization reveals differential gene expression in phosphate hyperaccumulator sunflower grown under low and high phosphate conditions. *J. Plant Physiol.* (2010) (in review).
- 3) Andra, SS, Datta, R, Sarkar, D, Makris, KC, Mullens, CP, **Sahi, SV**, Bach, SBH. Synthesis of phytochelatins in vetiver grass upon lead exposure in the presence of phosphorus. *Plant and Soil* 326, 171-185 (2010) (special issue).
- 4) Venkatachalam, P., Srivastava A., K. Raghothama, **S. V. Sahi**. Genes induced in response to mercury-ion-exposure in heavy metal hyperaccumulator *Sesbania drummondii*. *Environ Sci Technol* 43, 843-850 (2009)
- 5) Padmanabhan, P., **S. V. Sahi**. Development of an *Agrobacterium*-mediated genetic transformation method for the legume *Sesbania drummondii* using cotyledonary node explants. *Plant Cell Rep* 28, 31-40 (2009)
- 6) Elena Rodríguez, José R. Peralta-Videa, Mohd. Israr, **Shivendra Sahi**, Helvia Pelayo, Blanca Sánchez-Salcido, Jorge L. Gardea-Torresdey. Effect of mercury and gold on growth, nutrient uptake, and anatomical changes in *Chilopsis linearis*. *Environ and Exp Bot* 65, 253-262 (2009)
- 7) Padmanabhan, P., **S. V. Sahi**. Influence of Phosphorus nutrition on growth and metabolism of Duo grass (*Duo festulolium*). *Plant Physiol Biochem* 47, 31-36 (2009)
- 8) Venkatachalam, P., A. Jain, **S. Sahi**, K. Raghothama. Molecular cloning and characterization of phosphate (Pi) responsive genes in Gulf ryegrass (*Lolium multiflorum* L.): a Pi hyperaccumulator. *Plant Mol Biol* 69, 1-21 (2009)
- 9) Andra, S.S., R. Datta, D. Sarkar, S. Bach, **S. Sahi** and D. Pachanoor. Induction of Phytochelatins in *Vetivertia zizanioides* to Lead Exposure. *J. Environ. Qual.* 38, 868-877 (2009)
- 10) Starnes, D., Priya P, and **S. V. Sahi**. Effect of P sources on growth, P accumulation and activities of phytase and acid phosphatases in two cultivars of annual ryegrass (*Lolium multiflorum* L.) *Plant Physiol. Biochem.* 46, 580-589 (2008).
- 11) Srivastava, A., P. Venkatachalam, K. Raghothama, **S.V. Sahi**. Identification of lead-regulated genes by suppression subtractive hybridization (SSH) in the heavy metal accumulator plant *S. drummondii*. *Planta* 225, 1353-1365 (2007).
- 12) Sharma, N., **S. V. Sahi**, S. Nath, J. Parsons, J. Gardea-Torresdey and T. Pal. Synthesis of plant-mediated gold nanoparticles and catalytic role of biomatrix-embedded nanomaterials. *Environ. Sci. Technol.* 41, 5137-5142 (2007).

### **Presentations** (presentations in last 3 years)

- 1) Mink, Jared, Priya Padmanabhan, **Shivendra Sahi**. Transformation of *Medicago sativa* with *Agrobacteria* to Create Insecticidal Plants. 39<sup>th</sup> Annual Student Research Conference, Bowling Green, KY, February 2009
- 2) Starnes, D., **Sahi, S**. Plants can produce Nanoparticles. 39<sup>th</sup> Annual Student Research Conference, Bowling Green, KY, February 2009
- 3) **Shivendra Sahi**, Daniel Starnes. Nanoparticle synthesis in alfalfa. Annual Meeting of Southern Association of Agricultural Scientists, Atlanta, GA, February 2009.
- 4) **Shivendra Sahi**, Pradyut Paul, Kenneth Sajwan. Assimilation of organic phosphorus in *Lolium multiflorum*. Annual Meeting of Sout Agricultural Scientists, Atlanta, GA, February 2009.
- 5) Starnes, D., **S.V. Sahi**. Plants can produce nanoparticles. Nanotechnology Symposium: Advances in Nanotechnology and Applications. Sullivan University, Louisville, KY, October 2008.
- 7) Starnes, D., **S. V. Sahi**. Phytomining of gold and plant-mediated production of gold nanoparticles. KY Nanomat 2008, Louisville, KY, March 2008.
- 8) Adams, A., M. Israr, M. Clauson, **S. Sahi**. Antifungal activity of oregano (*Origanum vulgare*) oil against human pathogenic fungi. American Society of Plant Biologists, Chicago, July 2007.
- 9) Hajara, M., H. Johnson, L. Alice, **S. Sahi**. Conversion of traditional taxonomy-centered botany lab to case-based inquiry learning. American Society of Plant Biologists, Chicago, July 2007.
- 10) Israr, M., A. Jewell, **S. Sahi**. Combined effects of different heavy metals: lead, copper, nicket and zinc upon *Sesbania drummondii* metal accumulation and antioxidative system. Annual meeting of American Society of Plant Biologists, Chicago, July 2007.
- 11) **Sahi, S.**, D. Starnes, P. Paul, P. Padmanabhan, N. Sharma, K. Sajwan. Can crops be used to remediate excess phosphorus? Southern Association of Agricultural Scientists, February, 2007.
- 12) Adams, A., M. Israr, **S. Sahi**. Assessment of fungicidal potential of Oregano against pathogenic fungi, KHRT Conference, Bowling Green, KY. March 2007.

### **Synergistic Activities**

#### 1) Grant Reviewer

National Science Foundation, Environmental Protection Agency, US Army Engineer Research and Development Center - SERDP Program, University of Texas at El Paso for NIH Score Program, KY EPSCoR – Research Startup Fund (2003-05), Southwest Center for Environmental Research & Policy – Applied Border Environmental Research Program (2004 and 2005), Czech Scientific Foundation

#### 2) Reviewer for Scientific Journals

Nature Nanotechnology, In Vitro Cellular & Developmental Biology-Plant, Biotechnology Progress, Proceeding of Indian Academy of Science, Plant Physiology & Biochemistry, Environmental Science & Technology, Journal of Hazardous Substance Research, Bioresource Technology, Plant Science, Environmental Pollution, Chemosphere, Coordination Chemistry Reviews

#### 3) Students and Postdoctoral Scholars Supervised

Post-doctoral Research Fellows (5), Graduate (MS) Students (8), Undergraduate Students (>20), Research Technician (2), High Schools Students (6), High School Teacher (1)

#### 4) Awards:

2009 Faculty Award for Research and Creativity, Western Kentucky University

2009 Career Professional Award by American Society of Agronomy Southern Branch, Atlanta, GA