

Debalina Saha

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Education

Doctor of Philosophy

August 2015 - Expected July 2019

Major: Horticultural Sciences

Concentration: Environmental Horticulture

Chair: Dr. S. Christopher Marble

Affiliation: University of Florida; United States

Thesis Title: Effect of Herbicide- Mulch Combinations on Weed Control, Phytotoxicity, and Herbicide Persistence and Movement in Landscape Planting Beds and Container Nursery Production

Current overall GPA: 3.92/4.0

Bachelor of Education

2013

Affiliation: Bangalore University; India

Master of Science

2011

Major: Botany

Concentration: Plant Physiology, biochemistry & molecular biology

Chair: Dr. Karabi Dutta

Affiliation: University of Calcutta; India

Thesis Title: Establishment of *Agrobacterium* mediated transformation in *Solanum tuberosum*.

Overall GPA: 4.823/5.0

Bachelor of Science (Honors)

2009

Major: Botany

Minor: Chemistry and Zoology

Affiliation: Presidency College, University of Calcutta; India.

Research Experience

Graduate Research Assistant

August 2015 – present

Dpt. of Environmental Horticulture, with Dr. S. Christopher Marble, University of Florida, United States.

- Conducted **greenhouse, laboratory, bioassay** and **field** experiments for determining the effects of different herbicides on the weed species in ornamental crop production for nurseries and landscape industries.
- Performed herbicide efficacy trials for agrichemical companies such as BAYER, OH2, and Syngenta etc.
- **Chemical weed control:** Examined-
 - Herbicide leaching through different substrate,
 - Herbicide placement and combination with mulch materials
 - Different formulations of herbicides, rate of applications etc.
 - Binding capabilities of herbicides with different substrates
 - Environmental fate of herbicides
 - Examined phytotoxic effect of herbicide on ornamental and tropical plants.
- **Non-chemical weed control :**
 - Using various types and depths of mulch materials.
 - Examined response of weed seed germination to different physical properties of mulch (depth, bulk density, particle size, solid volume fraction etc.)
- Collecting and analyzing data by various statistical programming tool (SAS 9.4, R, JMP programming).
- Prepared manuscripts for both peer-reviewed journals and extension journals.
- Analysis, summarization and reporting of data at different scientific reports, journals, and conferences.

Subject Matter Expert in Biology

April 2014 – September 2014

Fitkids Education and Training Private Ltd, Bangalore, India.

- **Experimental designs:** Worked on end-to-end experimental designs in Biology for STEM programs.
- **Internal testing:** Worked on internal testing of experiments in the field of Microbiology, Botany, Anatomy, Ecology, Zoology, Biochemistry and other major sections of Biology.

Graduate Research Assistant

January 2011 – July 2011

Dpt. of Botany, Plant Molecular and Biotechnology Lab, with Dr. Karabi Dutta, University of Calcutta, Kolkata, India.

- **Plasmid isolation:** Confirmed *Agrobacterium* strain containing the plasmid vector by isolating the plasmid followed by restriction digestion and amplification (PCR) of the GUS gene.
- **Agrobacteria mediated transformation:** Established *Agrobacterium* mediated transformation in potato plant, which involved media formulation, multiplication of potato plantlets, pre-conditioning of ex-plants, culturing and sub-culturing of *Agrobacterium* followed by centrifugation, inoculation of the pre-conditioned explants and transferring to selective media.
- **Study of transformed plants:** Studied the average percentage of expected transformed plants obtained from the *Agrobacterium* inoculated ex-plants.

Teaching Experience

Graduate Teaching Assistant

January 2017- April 2017

Dpt. of Environmental Horticulture with Dr. Brian J. Pearson at University of Florida, United States.

- Developed course lectures and modules for the course, ORH 4236C/HOS 6932 (Ornamental Landscape Management)
- Prepared rubric for the assignments and graded both undergraduate and graduate students

Guest lecturer

June 2013-September 2013

Christ King Public School, Bangalore, India.

- Guest lecture on Biology and Chemistry for 8th, 9th, and 10th grades
- Independently taught 50 students five times a week for 4 months

Fellowships and Scholarships

- **William C. and Bertha M. Cornett Fellowship by College of Agricultural and Life Sciences, University of Florida – 2017**
Fellowship of \$1,500 was awarded for maintaining high academic excellence by the College of Agricultural and Life Sciences, University of Florida
- **L. Russell Norton Memorial Fellowship by Dade County AGRI Council, Inc.- 2017**
Fellowship of \$400 was awarded for conducting research on problems relating directly to the agriculture of the Miami Dade county area, Florida
- **International Plant Propagator's Society Vivian Munday Scholarship – 2016**
Awarded to young horticultural professionals for serving and assisting hands on work at the International Plant Propagator's Society annual meeting

Achievements, Honors and Awards

- **Outstanding CALS (College of Agricultural and Life Sciences) International Student Award, University of Florida International Center- 2017**
Awarded to **top five** CALS outstanding international students by University of Florida
- **International Plant Propagator's Society Graduate Research Competition –1st Place, 2017**
Awarded \$1000 by International Plant Propagator's Society for the oral presentation at the graduate research competition
- **International Plant Propagator's Society Travel Grant Recipient – 2017**
Awarded \$500 as travel grant for presenting research paper at the International Plant Propagator's Society graduate research competition
- **Outstanding Graduate Student Oral Presentation by Florida Academy of Sciences-2017**
The Florida Academy of Sciences gives this award to the graduate student for the outstanding oral presentation at their annual conference
- **Dr. Elizabeth A. Hays Travel Award by Florida Academy of Sciences Inc.- 2017**
Awarded \$100 as travel grant for presenting an oral presentation at the Florida Academy of Sciences
- **International Plant Propagator's Society Graduate Research Competition –2nd Place, 2016**
Awarded \$500 by International Plant Propagator's Society for the oral presentation at the graduate research competition

- **International Plant Propagator's Society Travel Grant Recipient – 2016**
Awarded \$500 as travel grant for presenting research paper at the International Plant Propagator's Society graduate research competition
- **Outstanding Academic Achievement Award, University of Florida International Center, University of Florida – 2016**
Awarded to the outstanding international students for maintaining overall GPA 4.0 at the University of Florida
- **Order of Merit – 3rd Place in Master of Science (Botany), University of Calcutta – 2011**
Awarded to **top three** Masters Students of University of Calcutta for maintaining the highest GPA in the Master of Science Degree program
- **Order of Merit – 7th Place in Bachelor of Science (Botany Honors), University of Calcutta-2009**
Awarded to **top ten** Undergraduate students of University of Calcutta for maintaining the highest percentage in the Bachelor of Science (Honors) Degree program.

Research Skills and Techniques

- **Greenhouse experiments:**
 - Experimental designs and layout
- **Field experiments:**
 - Experimental designs and layout of plots
 - Light measurement by using Li-191R Line Quantum Sensor, LICOR®
- **Herbicide applicator License-** Possess valid herbicide applicator license (Turf and ornamental) by Florida Department of Agriculture and Consumer Services (FDACS)
- **Statistical software skills:**
 - SAS (9.4) for analyzing data by using various statistical models (GLM, GLIMMIX, MIXED models etc.)
 - JMP
 - R
- **Laboratory skills:**
 - Plasmid isolation
 - Polymerase chain Reaction
 - Gel electrophoresis
 - DNA and Protein Extraction
 - Assay of enzyme activities
 - Colorimetric estimation of IAA, amino acids, DNA and RNA protein
 - Media formulation, explant preparation, regeneration of roots & shoots, multiplication of plantlets (Tissue culture techniques)
- **Other software skills:**
 - MS word, excel, PowerPoint, Internet

Peer-Reviewed Publication

Saha, D., C. Marble, C. Stewart, and A. Chandler. 2017. Preemergence and postemergence control of Artillery weed (*Pilea microphylla*) in container nurseries and landscapes. *Weed Technology* 31(4): 574-581.

Extension Publications

Saha, D., C. Marble, R.H. Stamps, S. Steed, and N.S. Boyd. 2016. Biology and management of ragweed parthenium (*Parthenium hysterophorus* L.) in ornamental crop production, ENH 1270. University of Florida Institute of Food and Agricultural Sciences EDIS.

Saha, D., C. Marble, S. Steed, and N.S. Boyd. 2016. Biology and management of *Pilea microphylla* (Artillery weed) in ornamental crop production, ENH 1272. University of Florida Institute of Food and Agricultural Sciences EDIS.

Proceedings Publications

Saha, D., S.C. Marble, G.E. MacDonald, D.C. Otero, B.J. Pearson, and H.E. Perez. 2018. Influence of physical properties of landscape mulch on germination of large Crabgrass (*Digitaria sanguinalis*) and garden spurge (*Chamaesyce hirta*). Proceedings of the Fifty-Eighth Annual Meeting of Weed Science Society of America. (*In Press*) {Abstract}

Saha, D., C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, D. Otero, A. Chandler. 2017. Mulching for weed control: Influence of type, depth, herbicide formulation and activation irrigation level on germination and growth of three container nursery weed species. Acta Horticulturae (Proceedings of International Plant Propagator's Society Southern Region). (*In press*)

Saha, D., C. Marble, N.S. Boyd, and S. Steed. 2017. Impacts of preemergence herbicide formulation on cost and weed control efficacy for container nursery crop production. Acta Horticulturae 1174_64: 319-324.

Saha, D., S.C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, and D. Otero. 2017. Assessing herbicide formulation, mulch depth, and activation moisture on weed control in landscape planting beds. Florida Scientist 80 (1):2. {Abstract}

Saha, D., C. Marble, B.J. Pearson, G.E. MacDonald, D. Otero, and H.E. Perez. 2017. Impact of herbicide formulation, mulch depth and activation moisture on weed control efficacy in landscape planting beds. Proceedings of the Second Annual Meeting of the Northeastern Plant, Pest, and Soils Conference 2:50. {Abstract}

Marble, S.C., **D. Saha**, C. Stewart, and A. Chandler. 2017. Efficacy of five granular preemergence herbicides as influenced by five different seeding intervals before and after application. Proceedings of the Second Annual Meeting of the Northeastern Plant, Pest, and Soils Conference 2:20. {Abstract}

Saha, D., C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, and D. Otero. 2017. Effects of mulch depth, herbicide formulation, and activation moisture on weed control in landscape planting beds. The Center for Landscape Conservation and Ecology Urban Landscape Summit. Gainesville, FL. {Abstract}

Saha, D., S.C. Marble, C. Stewart, and A. Chandler. 2017. Preemergence and postemergence control of Artillery weed (*Pilea microphylla*) in container nurseries and landscapes. Florida Weed Science Society Conference. Haines City, FL. {Abstract}

Oral Presentations

Saha, D., S.C. Marble, G.E. MacDonald, D.C. Otero, B.J. Pearson, and H.E. Perez. 2018. Influence of physical properties of landscape mulch on germination of large Crabgrass (*Digitaria sanguinalis*) and garden spurge (*Chamaesyce hirta*). Weed Science Society of America Annual Conference. Arlington, VA. Jan. 29 – Feb.01.

Saha, D., C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, D. Otero, A. Chandler. 2017. Mulching for weed control: Influence of type, depth, herbicide formulation and activation irrigation level on germination and growth of three container nursery weed species. International Plant Propagator's Society (Southern Region) Conference. Dallas, TX. Oct. 28- Nov.1

- Graduate Student Oral Presentation Award- 1st Place

Saha, D., S.C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, and D. Otero. 2017. Assessing herbicide formulation, mulch depth, and activation moisture on weed control in landscape planting beds. Florida Academy of Sciences. Lakeland, FL. March. 10-11.

- Outstanding Graduate Student Oral Presentation Award

Saha, D., S.C. Marble, C. Stewart, and A. Chandler. 2017. Preemergence and postemergence control of Artillery weed (*Pilea microphylla*) in container nurseries and landscapes. Florida Weed Science Society Conference. Haines City, FL. March. 6-7.

Saha, D., C. Marble, B.J. Pearson, G.E. MacDonald, D. Otero, and H.E. Perez. 2017. Impact of herbicide formulation, mulch depth and activation moisture on weed control efficacy in landscape planting beds. Northeastern Weed Science Society of America Conference. Philadelphia, PA. Jan. 3-6.

Saha, D., C. Marble, N.S. Boyd, and S. Steed. 2016. Impacts of preemergence herbicide formulation on cost and weed control efficacy for container nursery crop production. International Plant Propagator's Society (Southern Region) Conference. Virginia, VA. Oct. 22-26.

- Graduate Student Oral Presentation Award – 2nd Place

Poster Presentations

Saha, D., C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, D. Otero, A. Chandler. 2017. Weed seed germination and growth response to physical properties of commonly used landscape and nursery mulches. International Plant Propagator's Society (Southern Region). Dallas, TX. Oct. 28- Nov.1.

Saha, D., C. Marble, B.J. Pearson, H.E. Perez, G.E. MacDonald, and D. Otero. 2017. Effects of mulch depth, herbicide formulation, and activation moisture on weed control in landscape planting beds. The Center for Landscape Conservation and Ecology Urban Landscape Summit. Gainesville, FL. March. 16-17.

Marble, S.C., **D. Saha**, C. Stewart, and A. Chandler. 2017. Efficacy of five granular preemergence herbicides as influenced by five different seeding intervals before and after application. Northeastern Weed Science Society of America Conference. Philadelphia, PA. Jan. 3-6.

Funded Grant Proposals

Marble, S.C., and **D. Saha**. 2016. Assessing the impact of herbicide formulation, mulch depth, and activation moisture on weed control in Florida Landscapes. Center for Landscapes Conservation & Ecology, University of Florida (IFAS). 2016-2017. \$12, 975 (Funded).

Marble, S.C., and **D. Saha**. 2016. Impact of herbicide application carrier volume on weed control in the absence of rainfall or irrigation for activation. Florida Nursery, Growers and Landscape Association. 2016-2017. \$4,800 (Funded).

Leadership Experience

Graduate Student Representative

May 2016 - Present

Mid-Florida Research and Education Center (MREC), University of Florida, Apopka, United States

- Managing the on-site housing facility to ensure a safe and better place to live for the graduate students and visiting scholars
- Communicate on behalf of the graduate students and visiting scholars with the MREC authority

Graduate Student Member

August 2015- present

Environmental Graduate Student Association, University of Florida, United States

- Participated in coleus plant production and propagation at the greenhouses for the Environmental Horticulture Graduate Student Annual Spring Plant Sale in 2016
- Managed a booth at the Gainesville Farmer's Market for selling Gator Glory (Honey) and Gator Jam for fund raising in 2016

Professional Affiliations

- **Weed Science Society of America (WSSA):** Graduate student member January 2018 – Present

References

Dr. S. Christopher Marble

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