CURRICULUM VITAE

Bhupinder Singh
Assistant Professor & Specialist, Agronomy (Conventional Cropping Systems)
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CHRONOLOGY OF EDUCATION

Mississippi State University, May 1, 2020, Ph.D. in Agronomy, Dissertation title: Agronomic and Physiological Responses of Resistant and Susceptible Cotton Genotypes To Reniform Nematode Severity And Soil Nitrogen, Major Advisor: Dr. Daryl Chastain.

Mississippi State University, May 7, 2016, MS in Agronomy, Thesis title: Rice Cultivars Responses to Moisture Stress During Seed Germination and Early Seedling Growth, Major Advisor: K. Raja Reddy.

Punjab Agricultural University, June 24, 2014, Bachelor of Science, Agriculture (Honors), Major Advisor: K. Raja Reddy, Specialization: Inderpal Singh Sandhu, Soil Sciences, Agronomy and Agroforestry

CHRONOLOGY OF EMPLOYMENT

August 2024 – Present: Assistant Professor & Specialist, The School of Plant Sciences, University of Arizona,

April 2022 – July 2024: Postdoctoral Research Associate, Texas A&M AgriLife Research,

October 2021 –April 2022: Postdoctoral Associate, Mississippi State University,

January 2020 – September 2021: Postdoctoral Fellow, University of Missouri,

August 2014 – December 2019: Graduate Research Assistant, Mississippi State University

HONORS AND AWARDS

2025, Arizona SARE Program Professional Development Travel Scholarship.

2022, Outstanding Agricultural Postdoc Award, Association of Agricultural Scientists of Indian Origin, Baltimore, MD, USA.

2019, Graduate student poster competition award (1st place, $300), Crop Science Society of America (CSSA) annual meeting, San Antonio, TX, USA.

2019, Graduate student poster competition award (2nd place, $75), Mississippi Academy of Sciences (MAS) summer symposium. Mississippi State University, MS.

2019, Honorable Mention, Mississippi Academy of Sciences (MAS) summer symposium. Mississippi State University, MS.

2019, Graduate School Hall of Fame Scholars, Graduate School Mississippi State University, MS.

2019, MAFES Excellence in Research Award, College of Agriculture and Life Sciences (CALS) and the Mississippi Agriculture and Forestry Experiment Station (MAFES), Mississippi State University, MS.

2019, Outstanding Manuscript Award, Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2019, Honor of Excellence in Science award, INBRE Scholars Symposium, Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2019, Graduate student poster competition award (2nd place, $75), Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2019, Graduate student oral competition award (2nd place, $75), Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2019, Graduate student poster competition award (2nd place, $200), Cotton Beltwide annual conference meeting, New Orleans, LA, USA.

2018, Graduate Student Leadership Conference Award, ASA and CSSA Annual Meeting, Baltimore, MD.

2018, Outstanding Graduate Student Award for 2018, Association of Agricultural Scientists of Indian Origin, Baltimore, MD, USA.

2018, Gamma Sigma Delta Scholarship Award ($500) for 2018, Gamma Sigma Delta Society, Mississippi State University Chapter Mississippi State University, MS.

2018, Gerald O. Mott Meritorious Graduate Student Award in Crop Science, Crop Science Society of America, Baltimore, MD, USA.

2018, Honorable mention, Mississippi Academy of Sciences (MAS) summer symposium. Mississippi State University, MS.

2018, Graduate student poster competition award (2nd place, $200), Crop Science Society of America (CSSA) annual meeting, Baltimore, MD, USA.

2018, Graduate (PhD.) oral presentation award (2nd place, $100), Division of Agricultural and Plant Sciences, Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2017, Honor of Excellence in Science award, INBRE Scholars Symposium, Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2017, Graduate student poster competition award (2nd place, $50), Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA.

2016, Graduate student poster competition award (1st place, $300), Southern American Society of Agronomy annual meeting, San Antonio, TX, USA.

2016, Honor of Excellence in Science" award, INBRE Scholars Symposium, Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS.

2014, Merit award certificate, Punjab Agricultural University, Ludhiana, Punjab, India.

2013, Gurdev Singh scholarship award, Punjab Agricultural University, Ludhiana, Punjab, India.

2013, University Marketing Board Scholarship, Punjab Agricultural University, Ludhiana, Punjab, India.

2012, University Marketing Board Scholarship, Punjab Agricultural University, Ludhiana, Punjab, India.

2011, University Marketing Board Scholarship, Punjab Agricultural University, Ludhiana, Punjab, India.

2010, University Marketing Board Scholarship, Punjab Agricultural University, Ludhiana, Punjab, India.

2009, University Marketing Board Scholarship, Punjab Agricultural University, Ludhiana, Punjab, India.

2008, University Marketing Board Scholarship, Punjab Agricultural University, Ludhiana, Punjab, India.

2009, Outstanding Student of the Year award, Department of Entomology, Punjab Agricultural University, Ludhiana, Punjab, India.

SERVICE AND OUTREACH

limit to time in rank OR last five years in current rank

Local/State Service and Outreach

2025-2026, The Pure Seed Advisory Committee, Member, Arizona Crop Improvement Association, Tucson, AZ
2024-Present, Peer Reviewer, three manuscripts for Arizona Cooperative Extension Publications, Tucson, AZ
2024-Ongoing, Organizer, Statewide Agronomy Need Assessment Survey, Arizona Cooperative Extension

National/International Service and Outreach

2025, Organizer, Cotton, Hemp, Flax, and Other Fiber Crops Community Oral I session, ASA-CSSA-SSSA International Annual Meeting

2025, Organizer, Cotton, Hemp, Flax, and Other Fiber Crops Community Oral II session, ASA-CSSA-SSSA International Annual Meeting

2025, Organizer, Cotton, Hemp, Flax, and Other Fiber Crops Community Poster session, ASA-CSSA-SSSA International Annual Meeting,

2025, Organizer, Cotton, Hemp, Flax, and Other Fiber Crops Community Oral I session, ASA-CSSA-SSSA International Annual Meeting

2025, Organizer, Cotton, Hemp, Flax, and Other Fiber Crops Community Oral II session, ASA-CSSA-SSSA International Annual Meeting

2025, Organizer, Cotton, Hemp, Flax, and Other Fiber Crops Community Poster session, ASA-CSSA-SSSA International Annual Meeting

2025-26, Vice Leader, Cotton, Hemp, Flax, and Other Fiber Crops Community, ASA-CSSA-SSSA International Annual Meeting

2024, Moderator, Greenhouse Gas Emissions and Soil Carbon Oral II (includes student competition), ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX, USA.

2024, Judge, Climate Change and Agricultural Oral I (includes student competition), ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX, USA.

2024-2025, Member, Crop Science Graduate Student Scholarship Committee, Crop Science Society of America

2021-Present, Associate Editor, Agronomy Journal.

2021-Present, Associate Editor, Journal of Crop Improvement.

2021-Present, Associate Editor, Tikrit Journal for Agricultural Sciences.

2024-Present, Peer Reviewer, (2) manuscripts for Field Crops Research.

2024-Present, Peer Reviewer, (1) manuscript for Journal of Crop Improvement

2019- Present, Peer Reviewer, (17) manuscripts for Agronomy Journal.

2020- Present, Peer Reviewer, (4) manuscripts for Agronomy.

2020- Present, Peer Reviewer, (1) manuscript for Applied Sciences.

2020- Present, Peer Reviewer, (1) manuscript for Canadian Journal of Plant Science.

2020- Present, Peer Reviewer, (1) manuscript for Crop, forage & turfgrass management.

2023- Present, Peer Reviewer, (1) manuscript for Environmental and Experimental Botany.

2021- Present, Peer Reviewer, (17) manuscripts for Environmental and Experimental Botany.

2020- Present, Peer Reviewer, (2) manuscripts for Soil Science Society of America journal.

2020- Present, Peer Reviewer, (1) manuscript for Crop Science.

Memberships in Professional Societies

2014-Present, Member, American Society of Agronomy

2014-Present, Member, Crop Science Society of America

2017-Present, Member, Association of Agricultural Scientists of Indian Origin

Departmental Committees

2024-Present, Member, School of Plant Sciences Extension Committee

2024-Present, Member, School of Plant Sciences Website Committee

2024, Judge, School of Plant Science Retreat Poster Session

University Committees

2024- Present, Member, Arizona Agriculture Extension Association (AAEA)

2024-Present, Member, The Arizona Pest Management Center IPM Coordinating Committee

Other Service (Including Extension Activities)

November 5, 2024, Attendee, The Arizona Grain Research and Promotion Council Meeting, Casa Grande, AZ

November 2024, Attendee, BASF Field Day, Eloy AZ

October 2024, Attendee, Deltapine Field Day, Casa Grande, AZ

September 12, 2024, Attendee, WSARE Grant Writing Workshop, Phoenix, AZ

August 12, 2024, Attendee, Arizona Cotton Growers Association meeting, Tempe, AZ

August 29, 2024, Attendee, Pre-Plant Yuma Fresh Vegetable Association meeting, Yuma, AZ

TEACHING, ADVISING, AND MENTORSHIP

Advising

2024-25, Graduate Committee Member, Dilshani Ashwin, Applied Biosciences Department, University of Arizona

Mentoring

2024-2025, Member, Golden Opportunity Scholars Institute Coordinating Committee, ASA, CSSA, and SSSA

2023-2025, Member, Golden Opportunity Scholars Institute-Scholar and Mentor Selection, ASA, CSSA, and SSSA

PUBLICATIONS

Google Scholar career statistics – citations: 436 // h-index: 9 // i-10 index: 9
https://scholar.google.com/citations?user=m-Io610AAAAJ&hl=en

Refereed Journal Articles

Samanta, S., S. Ale, S. K. Himanshu, B. Singh, K. Kothari. 2024. Identification of Priority-based Variable Deficit Irrigation Strategies for Grain Sorghum Production in the Texas High Plains under Increasing Climate Variability. Journal of Agricultural Engineering (India), 61(3). https://doi.org/10.52151/jae2024613.1850

Chastain, D.R., B. Singh, J.L. Snider. 2024. Drought Response Modeling of Leaf Photosynthetic Parameters in Two Gossypium Species. 2024. *Journal of Agronomy and Crop Science* 210: e12709.

Jumaa, S.H., I.K. Al-mafraji, A.H Mohammed, F.A Alsajri, S.K Sah ……., B. Singh. 2024. J.L. Studying the cumulative vigor response index of morphophysiological, quality, and yield-related traits of wheat cultivars using planting dates. TJAS. https://tjas.org/index.php/tjas/article/view/657

Singh, B., D.R. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, G. Kaur, S.K. Bazzer. 2023. Reniform nematode impact on cotton growth and management strategies: a review. Agronomy Journal. https://doi.org/10.1002/agj2.21368

Singh, B., G. Singh, G. Kaur, J.S. Dhillon. 2023. Single and multispecies cover crop effects on corn production and economic returns. Journal of Contemporary Water Research and Education.

Singh, B., G. Singh, G. Kaur, N.E. Quintana-Ashwell. 2023. Row spacing and irrigation management affect soybean yield, water use efficiency and economics. Agricultural Water Management. https://doi.org/10.1016/j.agwat.2022.108087

*Singh, B., D.R. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina. Early-season growth responses of resistant and susceptible cotton genotypes to reniform nematode and soil potassium. Agronomy. 12: 2895-2910. https://www.mdpi.com/2073-4395/12/11/2895

*Singh, B., D.R. Chastain, K.R. Reddy, J.L. Snider, L.J. Krutz, S.R. Stetina. A. Sehgal. 2021. Agronomic characterization of cotton genotypes susceptible and resistant to *Rotylenchulus reniformis* in the US Midsouth. Agronomy Journal. https://doi.org/10.1002/agj2.20755.

*Singh, B., D.R. Chastain, K.R. Reddy, J.L. Snider, L.J. Krutz, S.R. Stetina, A. Sehgal. 2020. Early season morphological and physiological responses of resistant and susceptible cotton genotypes to reniform nematode and soil nitrogen. Agronomy. 10: 1974-1995. https://doi.org/10.3390/agronomy10121974

*Alsajri, F.A., C. Wijewardana, R. Rosselot, B. Singh, L.J. Krutz, W. Gao, K.R. Reddy. 2020. temperature effects on soybean seedling shoot and root growth and developmental dynamics. Journal of the Mississippi Academy of Sciences. 65: 247-258. https://msacad.org/wp-content/uploads/2013/04/July-2020_Vol65_No-32.pdf

*Singh, B., D.R. Chastain, C. Wijewardana, and K. R. Reddy S.K. Singh, S.M. Vijaya, G. Kakani, W. Gao. 2019. Parental environmental effects on seed quality and germination responses to temperature of *Andropogon gerardii*. Agronomy 9: 304-320. https://doi.org/10.3390/agronomy9060304

*Singh, B., D.R. Chastain, S. Jumaa, C. Wijewardana, E.D. Redona, and K. R. Reddy. 2019. Projected day/night temperatures specifically limit rubisco activity and electron transport in diverse rice cultivars. Environmental and Experimental Botany 159: 191-199. https://doi.org/10.1016/j.envexpbot.2018.12.018

*Hale R.R., T. Bararpour, G. Kaur, J.W. Seale, B. Singh, T. Wilkerson. 2019. Sensitivity and recovery of grain sorghum to simulated drift rates of glyphosate, glufosinate, and paraquat. Agriculture 9: 70-84; https://doi.org/10.3390/agriculture9040070

*Bararpour, M.T., G. Kaur, B. Singh, L.R. Oliver, C.E. Brewer, N.V. Goldschmidt, and J.L. Alford. 2019. Weed management programs in grain sorghum (*Sorghum bicolor*). Agriculture 9: 182-194; https://doi.org/10.3390/agriculture9080182

*Pilon, C., J.L. Snider, V. Sobolev, D.R. Chastain, R.B. Sorensen, C.D. Meeks, R.S. Arieas de Ares, A.N. Massa, T. Walk, and B. Singh. 2018. Assessing stomatal and non-stomatal limitations to carbon assimilation under progressive drought in peanut (*Arachis hypogaea* L.). Journal of Plant Physiology 231: 124-134.

*Alsajri, F.A., B. Singh, C. Wijewardana, J.T. Irby, W. Geo, and K.R. Reddy. 2019. Evaluating soybean cultivars for low- and high-temperature tolerance during the seedling growth stage. Agronomy 9: 13-26. https://doi.org/10.3390/agronomy9010013

*Singh, B., E. Norvell, C. Wijewardana, T. Wallace, D. Chastain, and K.R. Reddy. 2018. Assessing morphological characteristics of elite cotton lines from different breeding programs for low temperature and drought tolerance. Journal of Agronomy and Crop Science 4: 467-476. https://doi.org/10.1111/jac.12276

*Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2017. Developing a screening tool for osmotic stress tolerance classification of rice cultivars based on in vitro seed germination. Crop Science 57: 387-394. https://doi.org/10.2135/cropsci2016.03.0196

*Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2017. Screening of rice cultivars for morpho-physiological responses to early-season soil moisture stress. Rice Science 24: 322-335. https://doi.org/10.1016/j.rsci.2017.10.001

Book Chapters

Singh, B., Kothari, K., & Ale, S. 2025. Crop evapotranspiration under changing climate. In *Evapotranspiration in Agro-Ecosystems and Forestry* (pp. 151-186). Academic Press. https://doi.org/10.1016/B978-0-443-21649-7.00006-7

*Singh, B., D. Chastain, J.L. Snider, G. Kaur, and K.R. Reddy. Low temperature and moisture stress effects on cotton seed germination. In: D.R. Chastain, J. Snider, K.R. Reddy, and G. Kaur, Cotton seed and seedlings, The Cotton Foundation, Cordova, TN. P. 53. https://www.cotton.org/foundation/cseedcontents.cfm

*Singh, B., D. Chastain, J.L. Snider, G. Kaur, and K.R. Reddy. Cotton seedling growth and development responses to temperature and drought stress. 2020. In: D. Chastain, J. Snider, K.R. Reddy, and G. Kaur, Cotton seed and seedlings, The Cotton Foundation, Cordova, TN. P. 53. https://www.cotton.org/foundation/cseedcontents.cfm

Popular Publications (including news articles / Extension articles)

Singh, B., Mukherjee, A., Norton, R., & Elshikha, D. E. Preliminary Evaluation of Wheat, Barley, And Triticale Varieties at Maricopa for Early to Mid-Season 2024/25. University of Arizona Cooperative Extension Publication. AZ2133

Elshikha, D. E., Attalah, S., Waller, P., Hunsaker, D., Sanyal, D., Sanchez, C., Singh, B., ... & Elsadek, E. A. Optimizing Broccoli (Brassica oleracea var. italica) Yield and Water Productivity in Arizona. University of Arizona Cooperative Extension Publication. AZ2123

Singh, B. October 1, 2024. "Heat Stress in COTTON". The Crop Rotator Newsletter

Singh, B. October 1, 2024. Statewide Agronomy Need Assessment Survey. The Crop Rotator Newsletter

Singh, B. 2024. Harvest Aid in Cotton. [AZAG] Newsletter - Vol 14, Issue 40

Singh, B. 2024. Statewide Agronomy Need Assessment Survey. [AZAG] Newsletter - Vol 14, Issue 41.

Singh, B., G. Singh, G. Kaur, N.E. Quintana-Ashwell. 2022. Can winter cover crops benefit growth and yield in an irrigated continuous corn? National Center for Alluvial Aquifer Research annual report 2022. Leland, MS. Delta Research and Extension Center. https://www.ncaar.msstate.edu/research/research-detail.php?id=41

Hayden B., G. Singh, B. Singh, D. Russell, T. Freeland. 2022. Every row and skip row irrigation impacts on soybean production in the Mississippi Delta. https://www.ncaar.msstate.edu/research/research-detail.php?id=20

*Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2017. Screening tool for rice seed germination, drought tolerance traits, CSA News Magazine. 62:9-9. https://doi.org/10.2134/csa2017.62.0308

*Singh, B., T. Walker, K.R. Reddy. Developing a screening tool for osmotic stress tolerance classification based on in vitro seed germination of rice cultivars. Page 10 in Mississippi Rice Promotion Board Research Highlights 2015. Stoneville, MS: Delta Research and Extension Center. https://drec.msstate.edu/sites/default/files/2015MRPBloprf6%28singles%29.pdf

*Singh, B., E.D. Redoña, T. Walker, and K.R. Reddy. Effect of early-season soil moisture stress on growth and development of different rice cultivars. Page 9 in Mississippi Rice Promotion Board Research Highlights 2015. Stoneville, MS: Delta Research and Extension Center. https://drec.msstate.edu/sites/default/files/2015MRPBloprf6%28singles%29.pdf

*Singh, B., D.R. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. Reniform nematode resistant cotton lines have higher early-season vigor and field yield. Page 12 in Delta Research and Extension Center annual report 2017. Stoneville, MS: Delta Research and Extension Center.

Media Coverage

Todd Fitchette, January 15, 2025, "Science, ag sit at an important crossroad" Western FarmPress https://www.farmprogress.com/commentary/science-ag-sit-at-an-important-crossroad

Jadee Rohner, August, 2025, "UA Cooperative Extension hires two agronomy specialists" 2024 AGPRC Newsletter

https://agriculture.az.gov/sites/default/files/documents/AZ%20Grain%20NL%20%284%29%20%282%29%20%281%29.pdf

Ayman Mostafa, August 27, 2024, "U of A Cooperative Extension Hires Agronomy Specialist" AZ-AG Newsletter, University of Arizona Cooperative Extension Newsletter.

OTHER SCHOLARSHIP

Abstracts

Singh, B., S. Samanta., S. Ale, K. Thorp, and E. Barnes. 2024. Projected Climate Change Impacts on Irrigated Cotton Production in Two Distinct Regions of the United States

Cotton Belt. American Society of Agronomy annual meeting, San Antonio, TX, USA. November 10-13, 2024.

Singh, B., S. Samanta., S. Ale, K. Thorp, and E. Barnes. 2024. Potential Effects of Climate Change on Cotton Phenology and Production at Maricopa in Arid Central Arizona. American Society of Agronomy annual meeting, San Antonio, TX, USA. November 10-13, 2024.

Singh, B., S. Samanta., S. Ale, and E. Barnes. 2023. Evaluating Climate Change Adaptation Strategies for Cotton Production in the Texas High Plains. Beltwide Cotton annual meeting, Fort Worth, TX, USA. February 3-5, 2024.

Singh, B., S. Samanta., S. Ale, and E. Barnes. 2023. Projected Climate Change Impacts on Cotton Production in the Texas High Plains. American Society of Agronomy annual meeting, St. Louis, MO, USA. November 1, 2023.

Singh, B., S. Samanta., S. Ale, and H. Singh. 2023. Characterizing Rangeland Composition Managed Under Adaptive Multi-Paddock Grazing. American Society of Agronomy annual meeting, St. Louis, MO, USA. November 1, 2023.

Muhammad, A., F. Torralbo, S. Bazzer, B. Singh, A. Sanz-Saez, and F.B. Fritschi. 2023. Genetic Mapping to Identify Loci Associated with Leaf Gas Exchange Traits and Water Use Efficiency in Soybean. American Society of Agronomy annual meeting, St. Louis, MO, USA. November 1, 2023.

Singh, B., S. Samanta., S. Ale, and E. Barnes. 2023. Simulated effects of projected climate change on cotton phenology and growing season length in the Texas High Plains. The American Society of Agricultural and Biological Engineers (ASABE) annual meeting, Omaha, NE. July 17-20, 2023.

Singh, B., S. Samanta., S. Ale, and H. Singh. 2023. Mapping vegetation species in a mixed rangeland managed under adaptive multi-paddock grazing using UAV-acquired RGB images. The American Society of Agricultural and Biological Engineers (ASABE) annual meeting, Omaha, NE. July 17-20, 2023.

Singh, H., B. Singh, S. Ale, P.D. Laune, R. Mohtar. 2023. Simulated impacts of winter wheat termination date on cotton production systems in the Texas Rolling Plains. The American Society of Agricultural and Biological Engineers (ASABE) annual meeting, Omaha, NE. July 17-20, 2023.

Sushil, H., S. Ale, J. Bell, R. Mvuyekure, S. Samanta, B. Singh, K. Kothari, Y. Fan, J. Bordovsky, D. Gitz III, R. Lascano, D. Brauer. 2023. Simulated efficient growth-stage-based variable deficit irrigation strategies for cotton and grain sorghum production. Ogallala Aquifer Program Workshop, Canyon, TX. April 4-5, 2023.

Ale, S., Singh, J., Singh, B., Bawa, A., Stotz, M., Dowhower, S., DeLaune, P., Steffens, T., Wang, T., Gomez-Casanovas, N., & Teague, W.R. 2022. Improving soil ecosystem health and resilience through cover crops and pasture cropping. A Community on Ecosystem Services (ACES) Conference. Washington, D.C., December 12-15, 2022.

Singh, B., A. Bawa, S. Dowhower, J. Singh, P. DeLaune, R. Teague. 2022. Pasture Cropping - An initiative to improve soil cover, health, and resilience in the Texas plains. 2022. American Society of Agronomy annual meeting, Baltimore, MD, USA. November 6-9, 2022.

Kaur, G., G. Singh, J.S. Dhillon, B. Singh. 2022. Cover crop overseeding impact on corn production and economics in Mississippi. American Society of Agronomy annual meeting, Baltimore, MD, USA. November 6-9, 2022.

Kaur, G., G. Singh, J.S. Dhillon, B. Singh, K.A. Nelson. 2022. Irrigation and row spacing affects soybean yield and water use efficiency. American Society of Agronomy annual meeting, Baltimore, MD, USA. November 6-9, 2022.

Ale, S, A. Bawa, S. Dowhower, J. Singh, B. Singh, P. DeLaune, and R. Teague. 2022. Baseline soil and vegetation measurements for investigating the soil health and ecosystem service benefits of pasture cropping. 2022. The American Society of Agricultural and Biological Engineer (ASABE) annual meeting, Houston, TX, USA, July 17-20.

Singh, B., G. Singh, G. Kaur, N.E. Quintana-Ashwell. 2022. Environment regulates cover crop benefits on following corn growth and yield. Mississippi Academy of Sciences (MAS) annual meeting, Biloxi, MS, USA. March 30-31, 2022.

Singh, B., G. Singh, and D. Chastain. 2022. Soil potassium do not alleviate reniform nematode damage on early cotton growth. Mississippi Academy of Sciences (MAS) annual meeting, Biloxi, MS, USA. March 30-31, 2022.

Singh, B., G. Singh, G. Kaur, N.E. Quintana-Ashwell. 2022. Assessing the interaction of row and irrigation patterns for maximizing water productivity in soybean. American Society of Agronomy Southern Branch annual meeting, New Orleans, LA, USA. February 12-14, 2022.

Singh, B., D. Chastain, G. Singh. 2022. Morpho-physiological responses of cotton cultivars to reniform nematode and soil phosphorus. American Society of Agronomy Southern Branch annual meeting, New Orleans, LA, USA. February 12-14, 2022.

Singh, B., and F.B. Fritschi. 2021. Static and kinetic responses of photosynthetic mechanisms in soybean lines differing for carbon isotope ratio. Crop Science Society of America (CSSA) annual meeting. November 7-10, 2021.

Pokharel, M., V. Sagan, B. Singh, M. maimaitijiang, N. Meier, F.B. Fritschi. 2021. Quantifying the impact of row spacing and rooting depth limitation on agronomic and seed quality traits in soybean. Crop Science Society of America (CSSA) annual meeting. November 7-10, 2021.

Kadam, S., B. Singh, H. Almtarfi, S. Bazzer, A. Rajurkar, A.P. Dhanapal, and F.B. Fritsch. 2021. Mapping of root complexity and architecture qtl in a field-grown soybean bi-parental population. Crop Science Society of America (CSSA) annual meeting. November 7-10, 2021.

Singh, B., G. Kaur, G. Singh. 2021. Multi-species cover crops and irrigation interaction effects on nutrient dynamics in soybean production system. Crop Science Society of America (CSSA) annual meeting. November 7-10, 2021.

Muhammad, A., F. Torralbo, S. Bazzer, B. Singh, A. Sanz-Saez, and F.B. Fritschi. 2021. Quantitative trait loci mapping identifies additive, epistatic and environment interaction qtl linked to photosynthesis and intrinsic water use efficiency related traits in soybean (*Glycine max* L. Merr). Crop Science Society of America (CSSA) annual meeting. November 7-10, 2021.

Singh, B., A. Sanz-Saez, M.J. Maw, S.E. Beebe, I.M. Rao, and F.B. Fritschi. 2020. Genotypic differences in symbiotic nitrogen fixation among diverse lines of common bean. Crop Science Society of America (CSSA) annual meeting, Virtual meeting. November 9-13, 2020.

Singh, B., D. Chastain, and J.L. Snider. Screening of rose cultivars for heat and drought tolerance using physiological and reproductive parameters. Crop Science Society of America (CSSA) annual meeting, San Antonio, TX, USA. November 10-13, 2019.

Singh, B., D. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. Influence of nitrogen on reproduction and pathogenicity of *Rotylenchulus reniformis* in cotton. Crop Science Society of America (CSSA) annual meeting, San Antonio, TX, USA. November 10-13, 2019.

Singh, B., D. Chastain, and J.L. Snider. Photosynthetic responses to drought in cotton using rapid A_N-C_i response (RACiR) function. Mississippi Academy of Sciences (MAS) summer symposium. Mississippi State University, MS. July 11, 2019.

Singh, B., D. Chastain, J.L. Snider. 2019. Stomatal effects on leaf metabolism in two cotton species with alternative stress response strategies. American Society of Agronomy Southern Branch annual meeting, Birmingham, AL, USA. February 3-5.

Singh, B., D. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. 2019. Characterizing resistance to reniform nematode in accessions of *Gossypium barbadense*

based on classical growth analysis. American Society of Agronomy Southern Branch annual meeting, Birmingham, AL, USA. February 3-5, 2019.

Singh, B., D. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. 2019. Assessing reniform nematode-resistant cotton lines using classical growth analysis. Cotton Beltwide conference annual meeting, New Orleans, LA, USA. January 8-10, 2019.

Singh, B., D. Chastain, and J. Snider. Rapid A_N-C_i response (RACiR) of two G*ossypium* species under drought. Cotton Beltwide conference annual meeting, New Orleans, LA, USA. January 8-10, 2019.

Singh, B., D. Chastain, and K.R. Reddy. 2019. Assessing heat and drought tolerance among rose cultivars using physiological and reproductive parameters. Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA. February 22-24, 2019.

Singh, B., D. Chastain, and K.R. Reddy. 2019. Effects of projected day/night temperatures on carbon assimilation and photosystem of two rice cultivars. Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA. February 22-24, 2019.

Singh, B., D. Chastain, and K.R. Reddy. 2018. Impact of changing temperatures and CO_2 during seed development on seed quality and vigor of big-bluestem. American Society of Agronomy annual meeting, Baltimore, MD, USA. November 4-7, 2018.

Singh, B., D. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. 2018. Characterization of *Rotylenchulus reniformis* resistant cotton lines based on growth, development, and yield responses in the nematode-infested fields. Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA. February 22-24, 2018.

Singh, B., D. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. 2018. *Rotylenchulus reniformis* resistant cotton lines exhibit higher early-season vigor and fiber yield when compared to susceptible varieties. Beltwide Cotton Conference, San Antonio, Texas. January 3-5, 2018.

Singh, B., D.R. Chastain, S. Jumaa, C. Wijewardana, E.D. Redona, and K.R. Reddy. 2018. Evaluation of two rice cultivars based on sub- and supra-optimal day/night temperature responses of carbon assimilation and photosystem. Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA. February 22-24, 2018.

Singh, B., D.R. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. 2018. Growth, development and yield characteristics of *rotylenchulus reniformis* resistant cotton lines grown in nematode-infested fields. American Society of Agronomy Southern Branch annual meeting, Jacksonville, FL, USA. February 4-6, 2018.

Singh, B., D.R. Chastain, S. Jumaa1, C. Wijewardana, E.D. Redona, and K. R. Reddy. 2018. Carbon assimilation and photosystem responses of two rice cultivars acclimated to sub- and supra-optimal day/night temperature regimes. American Society of Agronomy Southern Branch annual meeting, Jacksonville, FL, USA. February 4-6, 2018.

Singh, B., D. Chastain, J.L. Snider, L.J. Krutz, S.R. Stetina, and K.R. Reddy. 2017. An evaluation of *Rotylenchulus reniformis* resistant cotton lines in the nematode-infested fields using classical growth analysis. American Society of Agronomy annual meeting, Tampa, FL, USA. October 21-25, 2017.

Singh B., E. Norvell, D. Chastain, and K.R. Reddy. 2017. Evaluation of cotton lines from different breeding programs for low temperature and drought tolerance. Student Science Symposium, Mississippi Academy of Sciences (MAS), Delta Research and Extension Center, Stoneville, MS, USA. July 26, 2017.

Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2017. Assessing morpho-physiological characteristics and moisture deficit stress tolerance of rice. Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA. February 22-24, 2017.

Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2016. Morpho-physiological Characterization of rice cultivars for early-season soil moisture stress response. American Society of Agronomy Annual Meeting, Phoenix, AZ. November 6-9, 2016.

Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2016. Osmotic stress tolerance classification based on in vitro seed germination of rice. Mississippi Academy of Sciences (MAS) annual meeting, Hattiesburg, MS, USA. February 18-19, 2016.

Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2016. Effect of early-season soil moisture stress on growth and development of different rice cultivars. American Society of Agronomy Southern Branch annual meeting, San Antonio, TX. February 8-9, 2016.

Singh, B., K.R. Reddy, E.D. Redoña, and T. Walker. 2016. Developing a screening tool for osmotic stress tolerance classification based on in vitro seed germination of rice cultivars. American Society of Agronomy Southern Branch annual meeting, San Antonio, TX. February 8-9, 2016.

Research Projects

1. Statewide Agronomy Variety Testing
    a. Small Grain Variety Testing (2024-ongoing)
    b. Upland Cotton Variety Testing (2024-ongoing)
2. Statewide Agronomy Systems Trials

   a. Evaluating plant phenotyping tools and agronomic adaptation strategies for cotton thermotolerance and water use efficiency.
   b. Evaluating herbicide efficacies against the broadleaf and grass weeds in southwest desert-grown cotton.
   c. Evaluation of Broccoli growth and development to biostimulant across available irrigation options in Arizona.
3. Climate Resilient Strategies for Conventional Cropping Systems.
   a. Projected Climate change trends in Arizona.
   b. Simulated climate change impacts on Cotton production in central Arizona.
   c. Simulated climate change adaptation strategies for cotton production in central Arizona.
4. Development of Extension Education and Delivery Tools.
   a. Development of Agronomy Lab page - SINGH LAB to provide progress to farmers and stakeholders on UA Agronomy research and extension program.

WORKS IN PROGRESS

Media

1. Development of Lab page- SINGH LAB on the University of Arizona Web platform (extension purpose)

CONFERENCES AND SCHOLARLY PRESENTATIONS

Limit to period in current rank or last five-years in current rank. Distinguish invited from submitted presentations.

Invited Presentations at Regional, National, and International Scientific Conferences

Weather stations and other tools for optimized irrigation and crop management, Maricopa, AZ, "Integrating Plant Phenotyping Technologies to Optimize Irrigation and Improve Crop Yield" (August 27, 2025)

2025 Yuma Fall IPM Workshop, Maricopa, AZ, "Integrating Plant Phenotyping Technologies to Optimize Irrigation and Improve Crop Yield" (August 12, 2025)

2025 Cotton Production Workshop, Safford, AZ, "Projected Heat Effects and Agronomy Plans for Arizona's Cotton" (February 26, 2025)

2025 Desert Ag Conference, Harrah's Ak-Chin Hotel & Casino, Maricopa, AZ, "Update on UA Agronomy Program" (May 1, 2025)

The 2025 UArizona Cooperative Extension Field Crops Clinic, Buckeye, AZ, "Investigating Agronomic Strategies for Adapting Cotton Production to Projected Climates in Central Arizona" (February 6, 2025)

Invited Departmental Seminars or Guest Lectures at Universities

including the University of Arizona

SPLS Retreat, Tucson, "Potential Effects of Climate Change on Cotton Phenology and Production in the Central Arizona" (December 11, 2024).

Other Invited Seminars:

Cotton Tent Talks, Sunshine Farming, Arizona City, "Screening Cotton Germplasm for Heat Tolerance using Plant Phenotyping Tools" (Aug 5, 2025)

Cotton Tent Talks, Sunshine Farming, Arizona City, "Screening Cotton Germplasm for Heat Tolerance using Plant Phenotyping Tools" (Aug 5, 2025)

The 2025 Annual Alfalfa & Forage Tent Talks, Tuesday, Freeman Corn Patch, Mesa, AZ, "Updates on Small Grain Trial and Silage Corn Herbicide Efficacy Trial" (July 8, 2025)

Cotton Tent Talks, Ak-Chin Farms, Maricopa, Arizona, "Canopy Temperature Depression: A Tool for Evaluating Cotton Thermotolerance and Water Use Efficiency" (July 16, 2025)

Arizona Ag Institute Field Talks, Maricopa Agricultural Center, Maricopa, Arizona, "Updates on Cotton Herbicide Efficacy Trial" (June 10, 2025)

Cotton Tent Talk, Crimson Sky Farms, Eloy, Arizona, "Canopy Temperature Depression: A Tool for Evaluating Cotton Thermotolerance and Water Use Efficiency" (May 27, 2025)

Cotton Tent Talks, Crimson Sky Farms, Eloy, Arizona, "Canopy Temperature Depression: A Tool for Evaluating Cotton Thermotolerance and Water Use Efficiency" (May 27, 2025)

Organic and Agronomy Cropping Systems Meet and Greet, UA Cooperative Extension, Yuma, AZ, "Agronomy Extension and Research Program for Arizona" (January 7, 2025)

The Arizona Pest Management Center IPM Coordinating Committee Meeting, Maricopa, AZ, "Introduction to UA Agronomy Research and Extension Program" (December 3, 2024)

The 14th Annual Central AZ Farmer Field Day, Maricopa Agricultural Center, Maricopa, AZ, "Assessing Morpho-Physiological Mechanisms Driving Nutrient Use Efficiency in Response to Biostimulants" (November 20, 2024).

County Supervisor's Tour planning meeting, Maricopa Agricultural Center, AZ, "Strategic Framework for Agronomy Extension and Research Program" (October 7, 2024)

Maricopa Farm Bureau Board Meeting, Tempe, AZ, "U of A Cooperative Extension Intro" (December 11, 2024).

The Arizona Grain Research and Promotion Council Meeting, Casa Grande, AZ, "Small Grain Variety Trial Testing" (November 5, 2024)

2024 Annual Cotton Tent Talks, Goodyear, AZ, "Introduction to UA Agronomy Program" (August 8th, 2024)

2024 Alfalfa and Forage Tent Talks, Buckeye, AZ, "Introduction to UA Agronomy Program" (August 14th, 2024)

Contributed Talks to Professional Conferences (Non-Invited)

American Society of Agronomy annual meeting, San Antonio, TX, USA, "Projected Climate Change Impacts on Irrigated Cotton Production in Two Distinct Regions of the United States Cotton Belt" (November 10-13, 2024)

American Society of Agronomy annual meeting, San Antonio, TX, USA, "Potential Effects of Climate Change on Cotton Phenology and Production at Maricopa in Arid Central Arizona" (November 10-13, 2024).

Beltwide Cotton Meeting, New Orleans, LA, USA, "Exploring Effective Climate Change Adaptation Strategies for Cotton Production in Central Arizona" (January 14-16, 2025).

AWARDED GRANTS AND CONTRACTS

limit to time in rank OR last five years in current rank

Federal Grants Awarded

2025 "Crop Yield Forecasting using Crop Models and Remote Sensing" United States Department of Agriculture// $89,278 total (0% indirect funding) 100% effort, PI

Other Grants Awarded (State, Industry, Private Foundation)

2025 "Evaluating Plant Phenotyping Tools on optimizing use and application rate of Crop Production Products for Arizona's Iceberg Lettuce" Arizona Iceberg Lettuce Research Council // $10,000 total (0% indirect funding) 80% effort, PI (Robert Masson, University of Arizona, co-PIs)

2025 "Evaluating Plant Phenotyping Tools on optimizing use and application rate of Crop Production Products for Arizona's Iceberg Lettuce" Arizona Iceberg Lettuce Research Council // $10,000 total (0% indirect funding) 80% effort, PI (Robert Masson, University of Arizona, co-PIs)

2025 "Evaluating plant phenotyping tools and agronomic adaptation strategies for cotton thermotolerance and water use efficiency" Cotton Incorporated // $25,000 total (15% indirect funding), 90% effort, PI (Elbert R Norton, University of Arizona; co-PI)

2024 "Small Grains Variety Testing" Arizona Grain Research and Promotion Council // $17,032 total (0% indirect funding) 80% effort, PI (Avik Mukherjee, University of Arizona; Elbert R Norton, University of Arizona, co-PIs)

2024 "Evaluating herbicide efficacies against the broadleaf and grass weeds in southwest desert-grown cotton" Cotton Incorporated // $15,000 total (0% indirect funding), 20% effort, co-PI (Avik Mukherjee, University of Arizona, PI; Elbert R Norton, University of Arizona, co-PI)

Contracts for Service

N/A

Research Donations

2025 "Cropping Systems Research and Extension Program" Arizona Crop Improvement Association // $3,000 total (0% indirect funding), 100% effort, PI

Submitted Grants/Contracts (Not Awarded)

2024 “Examining the Effects of Extreme Weather Events on Alfalfa Production in Desert Southwest” United States Department of Agriculture // $10,000 total ($2,063 indirect funding), 33.33% effort, co-PI (Avik Mukherjee, University of Arizona, PI; Ayman M Mostafa, University of Arizona, co-PI) [pending]

2024 “Evaluating the Impacts of Novel Crop Rotations on Multiple Ecosystem Services in the Desert Agroecosystems” United States Department of Agriculture // $749,994 total ($85,150, indirect funding), 10% effort, co-PI (Debankur Sanyal, University of Arizona, PI; Pedro Andrade Sanchez, Claudia Vanessa Montania Portillo, University of Arizona; Jose H Quintero, University of Arizona; Avik Mukherjee, University of Arizona, co-PIs) [unawarded]

2024 “Exploring the Potential of LI-6800 in Driving Innovations in Crop Physiology Research for Desert Agriculture” United States Department of Agriculture // $32,950 total (0% indirect funding), 80% effort, PI (Ali Tahseen Mohammed, University of Arizona; Debankur Sanyal, University of Arizona, co-PIs) [unawarded]