

SUDEEP SINGH SIDHU, Ph.D.

Curriculum Vitae

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EDUCATION

Ph.D. Crop and Soil Sciences, The University of Georgia, Athens, GA, Aug. 2012
Dissertation Topic: Enzymatic removal of lignin from plant materials: Potential applications.

M.S. Soil Science (minor in Chemistry), Punjab Agricultural University, Punjab, India, July 2007
Thesis Topic: Sulfur and boron interaction in soybean crop.

B.S. Agriculture (Hons. in Soil Science), Punjab Agricultural University, Punjab, India, June 2005

PROFESSIONAL AND RESEARCH EXPERIENCE (Overview)

Assistant Professor of Agronomy, University of Florida, NFREC-Quincy, Sep. 2023-Present

Regional Specialized Agent II, University of Florida, Live Oak, FL, Jan. 2022-Aug. 2023

Research Assistant Scientist, University of Florida, Quincy, FL, Feb. 2021-Jan. 2022

Postdoctoral Research Associate, University of Florida, Quincy, FL, Dec. 2017-Feb. 2021

Crop Consultant/Agronomist, Snyder Family Farms, Yerington, NV, Sep. 2017-Dec. 2019

Agronomist, Nevada Fresh Pak, Yerington, NV, Oct. 2014-Aug. 2017

Postdoctoral Research Associate, The University of Georgia, Griffin, GA, Oct. 2012-Oct. 2014

MENTORING

Graduate Student Committees: Chair (1 Ph.D., 1 M.S.); Co-Chair (2 M.S.); Member (2 Ph.D., 1 M.S.)

CURRENT AFFILIATIONS

Member, Faculty Senate, University of Florida, Beginning Fall 2023

Faculty, Center for Land Use Efficiency, University of Florida, Aug. 9, 2022-Present

Affiliate Faculty, Water Institute, University of Florida, Oct. 5, 2022-Present

Member, Corn and Peanut research teams, UF-IFAS, 2023-Present

Voting Member, Peanut Cultivar Release Advisory Committee, UF, Sep. 23, 2022-Present

Member, Suwanee River Partnership Steering Committee, Jan. 3, 2022-Present

Member, Corn and Cotton Advisory Committee, UF-IFAS, Jan. 27, 2022-Present

RESEARCH	EXTENSION	GRANTS (PI & Co-PI)	PATENTS
Google Scholar Profile	Talks: 52	Award Amount: \$21+ M	Utility Patents: 2
Publications: 34	On-farm trial sites across 12 counties 37	Grants Funded: 38	Application: 1
Citations: 349	Events organized: 21	Grants Pending: 0	
Abstracts: 44			

PROFESSIONAL AND RESEARCH EXPERIENCE

Assistant Professor of Agronomy, University of Florida, NFREC-Quincy, Sep. 2023-Present
Projects (Principal Investigator):

1. Development and maintenance of a sod-based rotation cropping system.
2. On-farm application of best management practices: Timing, rate, and placement of nutrients with cover cropping.
3. Demonstrating and measuring the effectiveness of rotational production as a BMP to reduce nitrogen and irrigation water in the Suwannee River basin.
4. Cotton Incorporated-cotton specialists' partnership: large-plot, replicated variety evaluations-FL.
5. Beltwide seed quality-An extension cotton specialist project.

Duties: Conduct on-farm trials to demonstrate impacts of tillage practices, cover crops, and cropping systems on peanut, cotton, and corn yield. Educate growers on site-specific management of farms with on-farm demonstration of field mapping unit-Veris MSP3. Establish on-farm demonstration trials to educate growers with efficient nitrogen management such as side-dress nitrogen in corn using Miller High boy in Suwannee Valley. Develop protocols to establish cover crops before corn harvest-right seed rate, right timing, right cover crop species for efficient scavenging of excess soil nitrogen which will reduce nitrate leaching. Establish on-farm demonstration sites in parallel to small plot research trials to update nitrogen recommendations for corn and cotton in Florida panhandle and Suwannee Valley. Organize farm tours and in-service trainings for multi-state county agents with an emphasis on efficient nutrient and water management. Plan farm visits with county faculty to provide agronomic professional support to growers. Serve on corn and cotton advisory committees consisting of UF faculty, growers, and county agents to steer nitrogen rate studies in Florida. Educate stakeholders and county faculty about impacts of pasture and cattle grazing on soil health and water quality of row crop land. Mentor graduate students and collaborate with multidisciplinary faculty to investigate various agronomic and precision ag. techniques for nutrient, water, and disease management.

Regional Specialized Agent II In Agricultural Water Management, Northeast Extension District, University of Florida, NFREC-Suwannee Valley, Live Oak, FL, Jan. 2022-Present
Projects (Principal Investigator):

1. Demonstrating and measuring the effectiveness of rotational production as a BMP to reduce nitrogen and irrigation water in the Suwannee River basin.
2. On-farm application of best management practices: Timing, rate, and placement of nutrients with cover cropping.
3. Developing NDVI as a non-destructive tool for in-season nitrogen content and fertilizer rate determination in corn.
4. Multi-County on-farm corn nitrogen rate demonstrations in parallel to ongoing corn rate trial research at NFREC-SV.
5. Testing a controlled release potassium fertilizer to bolster peanut health on farms impacted by peanut decline.
6. Is peanut decline caused by carbonates in well water?
7. Demonstrating and comparing the effectiveness of heat-treated chicken litter and controlled release fertilizer in corn production systems.

Projects (Co-Principal Investigator):

8. Floridan Aquifer Collaborative Engagement for Sustainability (FACETS).
9. Developing nitrogen recommendations for Florida corn growers.
10. Developing improved nitrogen recommendations for Florida cotton growers.
11. Florida soil moisture sensor network: Program evaluation and expansion.
12. Accelerating Florida innovative Agricultural Stakeholder Engagement Program (STEP) to enhance best management practices.
13. Developing site-specific recommendations on nitrogen application rate and timing for cold hardy satsuma mandarin production in North Florida.
14. Crop performance, environmental, and economic evaluation of irrigation technologies for corn and peanut nutrient BMPs in Suwannee River Water Management District.
15. Evaluation of fungicide performance delivered by solid-set overhead sprinkler irrigation system on *Alternaria* leaf blight and Cottony rot, and farmers participatory evaluation.
16. Integrated management of emerging seedborne bacterial diseases of cucurbits and chenopods (IMDCC).

Duties: Conducted on-farm trials to demonstrate impacts of cropping systems on underground water quality. Established on-farm demonstration trials to educate growers with efficient nitrogen management such as side-dress nitrogen in corn using Miller High boy. Developed protocols to establish cover crops in standing corn to scavenge excess soil nitrogen to reduce nitrate leaching. Integrated several precision agricultural techniques along with resilient cropping systems to optimize nitrogen and water use efficiency and improve water quality in FL ecosystems. Established demonstration sites in parallel to small plot research trials to update nitrogen recommendations for corn and cotton in Florida panhandle. Organized farm tours and in-service trainings for multi-state county agents with an emphasis on efficient water management and water quality. Supported row and specialty crop growers with drip or over-head irrigation systems. Planned farm visits with county faculty to provide professional support to growers with needs in terms of setting up soil moisture probes, drip irrigation systems, or over-head sprinkler systems. Served on corn and cotton advisory committees consisting of UF faculty, growers, and county agents to steer nitrogen rate studies in Florida. Served as technical advisor on projects with United Dairy Farmers of Florida to help improve efficiency of dairy feed production and manure management. Educated stakeholders and county faculty about impacts of pasture and cattle grazing on soil health and water quality of row crop land. Mentored graduate students and collaborated with multidisciplinary faculty to investigate various irrigation techniques for nutrient, water, and disease management.

Research Assistant Scientist, University of Florida, NFREC-Quincy, FL, Feb. 2021-Jan. 2022

Projects:

1. On-farm trials integrating field mapping, nitrogen calibration strips, and sensor-based approaches to develop in-season nitrogen application strategies for cotton and corn at five locations in FL panhandle.
2. On-farm trials evaluating soil electrical conductivity-based nitrogen recommendation in corn and cotton at two locations in Jackson County.
3. Investigating impacts of integrated crop livestock systems and sod-based rotation cropping systems on peanut aflatoxin management.
4. On-farm trial investigating nitrogen losses from cotton and peanuts grown in conventional and sod-based rotation systems.

Duties: Conducted on-farm trials to test nitrogen calibration strip as a potential BMP approach for nitrogen management in cotton and corn grown in FL panhandle. Met with participating growers to devise research plans to establish trials on their respective fields to eliminate potential limitations at each participating site. Utilized field mapping equipment, Veris MSP3, to establish zones based on soil variability and integrate soil variability with spectral sensor data for precision nutrient management. Integrated data from soil moisture sensors and cropping system practices to investigate peanut aflatoxin on small plot and on-farm trials.

Postdoctoral Associate, University of Florida, NFREC-Quincy, FL, Dec. 2017-Feb.2021

Projects:

1. Integrate field mapping, sensor-based techniques, and nitrogen calibration strips to inform nutrient management in conventional and sod-based rotation cotton in FL agroecosystems.
2. Develop irrigation strategies for cotton and peanut utilizing capacitance-based soil moisture probes.
3. Evaluate effectiveness of sod-based rotation system and cattle grazing in reducing nutrient inputs to ground water in the Jackson Blue Springs Basin.
4. Evaluate Velum Total in peanut in sod-based rotation and 2-year cotton/peanut rotation with and without irrigation using conservation technology.
5. North American project to evaluate soil health measurements (collaboration with Soil Health Institute, Morrisville, NC).

Duties: Conducted small plot and on-farm research to develop site-specific nutrient and water management strategies for various cropping systems in FL (peanut-cotton-no cover crop; peanut-cotton-cover crop; sod-based rotation with cover crop). Investigated the impact of alternate cropping system such as sod-based cropping system (bahiagrass-bahiagrass-peanut-cotton) with or without cattle grazing on nitrate leaching. Developed irrigation strategies in cotton and peanut utilizing capacitance-based soil moisture probes. Utilized field mapping equipment such as Veris technologies MSP3 to delineate fields into different zones for informed nutrient management. Developed on-farm tools such as “nitrogen calibration strips” and sensor-based approach in cotton to inform in-season nitrogen application. Investigated nitrate leaching potential of different cropping systems utilizing lysimeters and deep core soil sampling. Demonstrated sensor- and nitrogen calibration strip-based approach as potential BMP for improving ground water quality. Evaluated and compared effectiveness of agrochemicals on pests in conventional and alternate cropping systems such as sod-based rotation.

Crop Consultant/Agronomist, Snyder Family Farms, Yerington, NV, Sep. 2017-Dec. 2019

Duties: Examine and evaluate caneberry yield data from field and hoop houses to evaluate yield potential of different varieties. Develop organic/conventional production protocols for caneberrys, watermelons, melons, onions, and garlic. Collected and analyzed soil, water, and tissue samples to make nutrient recommendations. Made decisions on the use of efficient irrigation technologies such as drip tape and overhead sprinkler system for efficient water use.

Agronomist, Nevada Fresh Pak, Yerington, NV, Oct. 2014-Aug. 2017

Agronomic Duties: Developed crop schedules and managed crop production practices on 6000 acres for different field-grown and hoop house vegetables such as broccoli, cauliflower, cabbage, celery, romaine hearts, iceberg lettuce, onions, baby spinach, baby kale, wild arugula, spring mix, bunch spinach, kale, chards, collard greens, cucumber, watermelons, cantaloupe, peppers, and jalapeno. Collected soil, water, and tissue samples on regular basis. Made pesticide and fertilizer

recommendations based on soil, water, and tissue analysis along with field scouting. Utilized efficient water use practices such as drip and sprinkler irrigation for sustainable crop production.

Managerial Duties: Supervised and coordinated day-to-day activities of several teams such as cultivation, ground preparation, irrigation, weeding, thinning, planting, harvesting, and food safety for an efficient vegetable production system. Managed and supervised personnel in irrigation, weeding and thinning crews. Designed, implemented, and oversaw various crop variety trials and recommended new varieties based on trial results. Prepared seed and agrochemical inventory reports for the management. Managed seed inventory by testing stored seed samples for germination percentage. Supervised onion seed treatment and its planting. Prepared weekly onion quality reports of various varieties from storage sheds and assisted the sales team and management to make informed decisions.

Postdoctoral Research Associate, The University of Georgia, Griffin, GA, Oct. 2012-Oct. 2014

Projects:

1. Evaluate physiological basis for warm-season turfgrass tolerance to atrazine and simazine.
2. Investigate effects of temperature and growth stage of crabgrass on dithiopyr efficacy.
3. Observe efficacy of ethephon for *Poa annua* seedhead control.
4. Study resistance mechanisms in *Poa annua* for atrazine, amicarbazone, and diuron.
5. Seashore paspalum growth regulation by flucarbazone-sodium.
6. Evaluate goosegrass resistance mechanisms to mitotic inhibitors.
7. Investigate basis for selectivity of nicosulfuron in five turfgrass species.
8. Physiological basis for selectivity of flucarbazone-sodium in three turf species.
9. Fate of glyphosate, mesotrione, methiozolin, ethephon, and dithiopyr in turfgrass species.

Duties: Conducted field and greenhouse studies to evaluate efficacy of different herbicides and plant growth regulators such as dithiopyr, flucarbazone-sodium, nicosulfuron, glyphosate, atrazine, simazine, amicarbazone, and ethephon on turfgrass and weed species. Established hydroponic studies in laboratory and growth chambers to characterize the physiology and selectivity of different chemistries in turfgrass and weed species using ¹⁴C-radiolabelled materials. Investigated the effects of biotic and abiotic stresses on the efficacy of different chemistries on target turf and weed species. Collaborated in inter-university research projects to investigate the target and non-target resistance mechanisms in weed species. Prepared seed and laboratory chemical inventory. Coordinated and assisted in research projects carried out by other graduate students.

Education Program Specialist, The University of Georgia, Griffin, GA, Aug. 2012-Sep. 2012

Duties: Conducted laboratory studies to optimize hydrolysis of pretreated lignocellulosic biomass with cellulose and β -glucosidase enzymes to enhance sugar recovery for improving bioethanol production efficiency. Assisted international visiting scientists in collecting soil and water samples from several sites.

Graduate Research Assistant, The University of Georgia, Griffin, GA, May 2008-Aug. 2012

Projects:

1. Use of laccase enzyme for dethatching in turfgrass systems.
2. Use of laccase-mediator system to remove lignin from lignocellulosic biomass for bioethanol production.

Duties: Conducted laboratory experiments to work on the proof of concept of using lignin-degrading enzyme, laccase, for lignin degradation in thatch biomass. Established greenhouse and field studies to evaluate the efficacy of laccase, to optimize the rate and frequency of laccase application, to investigate residual effect of laccase application on thatch degradation in creeping bentgrass, bermudagrass, and zoysiagrass. Conducted laboratory experiments to develop new biomass pretreatment technique for bioethanol production by optimizing laccase-mediator ratio to maximize lignin removal from lignocellulosic biomass. Collaborated with visiting scholars to establish experiments to investigate enhanced saccharification of lignocellulosic biomass using several fungal treatments. Investigated enzyme-mediated fate and transformation of hormones and veterinary pharmaceuticals in environment by establishing soil incubation studies.

Graduate Student, Punjab Agricultural University, Ludhiana, Punjab, India, 2005-2007

Project: Interaction effects of sulfur and boron fertilization on soybean yield and quality.

Duties: Utilized remote sensing map for sulfur and boron deficient soils in the state of Punjab to collect soil samples from 28 villages. Selected a site with soils deficient in both sulfur and boron based on laboratory analysis. Prepared protocols for nutrient applications at various growth stages of soybean crop. Conducted greenhouse experiments to investigate the interaction effects of sulfur and boron fertilization and application timing on soybean quality, yield, and nutrient uptake. Conducted laboratory bench studies to analyze sulfur and boron content in soil and plant tissues. Investigated interaction effects of sulfur and boron application on uptake and translocation of macro- and micro-nutrients.

Undergraduate Student, Punjab Agricultural University, Ludhiana, Punjab, India, 2001-2005

Training: One-year experience on crop production and farm management under the “Practical Crop Production” program. Six months rural agriculture and outreach experience under the “Village Training” program.

GRADUATE STUDENT MENTORING

Role	Student	Degree	Department	Dates
Chair	Sukhveer Bhullar	Ph.D.	Agronomy (UF)	Spring 2023-Present
Chair	Aradhana Regmi	M.S.	Agronomy (UF)	Spring 2024 onwards
Co-Chair	Rajkaran Grewal	M.S.	Soil, Water, and Ecosystem Sciences (UF)	Spring 2023-Present
Co-Chair	Sukhdeep Singh	M.S.	Soil, Water, and Ecosystem Sciences (UF)	Spring 2023-Present
Member	Daniel Leonard	Ph.D.	Agronomy (UF)	Fall 2023-Present
Member	Rahul Sharma	Ph.D.	Agronomy (PAU, India)	Fall 2022-Present
Member	Xinwie Liu	M.S.	Horticultural Sciences (UF)	Summer 2023-Present

PUBLICATIONS AND INTELLECTUAL PROPERTIES:**Refereed Journal Publications**

The asterisk () indicates a publication for which I am the corresponding author*

1. Arruda Huggins De Sa Leitao, Diego., **S.S. Sidhu**, W.D. Griffin, U. Ahmad, and L.K. Sharma 2023. Irrigated corn grain yield prediction in Florida using active sensors and plant height. Smart Agric. Technol. 5: 100276. <https://doi.org/10.1016/j.atech.2023.100276>
2. Liptzin, D., E.L. Rieke, S.B. Cappellazzi,...**S.S. Sidhu**.... C.W. Honeycutt. 2023. An evaluation of nitrogen indicators for soil health in long-term agricultural experiments. Soil Sci. Soc. Am. J. 87 (4): 868-884. <https://doi.org/10.1002/saj2.20558>
3. Seepaul, R., S. Kumar, **S.S. Sidhu**, S. George, M. Douglas, I.M. Small, and D.L. Wright. 2023. Effect of tillage and nitrogen nutrition on growth, yield, and chemical composition of rainfed B. Carinata. Agron. J. <https://doi.org/10.1002/agj2.21315>
4. Bagnall, D.K., C.L.S. Morgan, G.M. Bean,...**S.S. Sidhu**,...C.W. Honeycutt. 2022. Selecting soil hydraulic properties as indicators of soil health: Measurement response to management and site characteristics. Soil Sci. Soc. Am. J. 86: 1206-1226. <https://doi.org/10.1002/saj2.20428>
5. Rieke, E.L., D.K. Bagnall, C.L.S. Morgan,...**S.S. Sidhu**....C.W. Honeycutt. 2022. Evaluation of aggregate stability methods for soil health. Geoderma. 428: 116156. <https://doi.org/10.1016/j.geoderma.2022.116156>
6. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, D. Jespersen, J. Liu, and P.L. Raymer. 2022. A review of a novel enzyme system for the management of thatch and soil water repellency in turfgrass. Int. Turfgrass Soc. Res. J. 14: 450-461. <https://doi.org/10.1002/its2.138>
7. Liptzin, D., C.E. Norris, S.B. Cappellazzi,...**S.S. Sidhu**.... C.W. Honeycutt. 2022. An evaluation of carbon indicators of soil health in long-term agricultural experiments. Soil Biol. Biochem. 172: 108708. <https://doi.org/10.1016/j.soilbio.2022.108708>
8. Bagnall, D.K., C.L.S. Morgan, M. Cope,...**S.S. Sidhu**,...C.W. Honeycutt. 2022. Carbon-sensitive pedotransfer functions for plant available water. Soil Sci. Soc. Am. J. 86: 612-629. <https://doi.org/10.1002/saj2.20395>
9. Rieke, E.L., S.B. Cappellazzi, M. Cope,...**S.S. Sidhu**....C.W. Honeycutt. 2022. Linking soil microbial community structure to activity: a continental scale assessment of reduced tillage. Soil Biol. Biochem. 168: 108618. <https://doi.org/10.1016/j.soilbio.2022.108618>
10. **Sidhu, S.S.***, D.L. Wright, S. George, and I. Small. 2021. Nitrogen Calibration Strip: An on-farm tool to further reduce N requirements in cotton on an integrated crop-livestock rotation system. Agron. J. 113: 3615-3627. <https://doi.org/10.1002/agj2.20730>

11. **Sidhu, S.S.***, E. van Santen, S. George, I. Small, and D.L. Wright. 2019. Effects of planting date and irrigation on yield and grade in runner-type peanut cultivars in north Florida. *Peanut Sci.* 46 (2): 191-197. <https://doi.org/10.3146/PS19-2.1>
12. **Sidhu, S.S.***, Q. Huang, R.N. Carrow, and P.L. Raymer. 2019. Short-term and residual effects of laccase application on creeping bentgrass thatch layer. *Hortscience* 54 (9): 1610-1620. <https://doi.org/10.21273/HORTSCI13970-19>
13. **Sidhu, S.S.*** 2019. Is laccase enzyme an answer for sustainable thatch management in turfgrass systems: A review. *Curr. Trends Biomedical Eng. & Biosci.* 19 (1): 556002. <https://doi.org/10.19080/CTBEB.2019.19.556002>
14. **Sidhu, S.S.***, S. George, D. Rowland, W. Faircloth, J.J. Marois, and D.L. Wright. 2018. Cattle grazing affects peanut root characteristics and yield in bahiagrass-based crop rotation. *Peanut Sci.* 45: 75-81. <https://doi.org/10.3146/0095-3679-45.2.75>
15. Svyantek, A.W., P. Aldahir, S. Chen, M.L. Flessner, **S.S. Sidhu**, P.E. McCullough, and J.S. McElroy. 2016. Target and non-target resistance mechanisms induce annual bluegrass (*Poa annua*) resistance to atrazine, amicarbazone, and diuron. *Weed Technol.* 30 (3): 773-782. <https://doi.org/10.1614/WT-D-15-00173.1>
16. Singh, R., **S.S. Sidhu**, H. Zhang, and Q. Huang. 2015. Removal of sulfadimethoxine in soil mediated by extracellular oxidoreductases. *Environ. Sci. Poll. Res.* 22 (21): 16868-16874. <https://doi.org/10.1007/s11356-015-4893-9>
17. Singh, R., **S.S. Sidhu**, and P.E. McCullough. 2015. Physiological basis of triazine herbicide tolerance in bermudagrass, seashore paspalum, and zoysiagrass. *Crop Sci.* 55: 2334-2341. <https://doi.org/10.2135/cropsci2014.09.0637>
18. Liu, J., **S.S. Sidhu**, M.L. Wang, B. Tonniss, M. Habteselassie, J. Mao, and Q. Huang. 2015. Evaluation of various fungal pretreatment of switchgrass for enhanced saccharification and simultaneous enzyme production. *J. Clean. Prod.* 104: 480-488. <https://doi.org/10.1016/j.jclepro.2015.04.094>
19. Gomez de Barreda, D., R. Singh, **S.S. Sidhu**, and P.E. McCullough. 2015. Dithiopyr controls common lespedeza (*Kummerowia striata*) in bermudagrass. *Weed Sci.* 63: 539-545. <https://doi.org/10.1614/WS-D-14-00117.1>
20. Singh, R., **S.S. Sidhu**, M.A. Czarnota, and P.E. McCullough. 2015. Differential behavior of two photosystem II inhibitors in seashore paspalum. *Agron. J.* 107: 997-1001. <https://doi.org/10.2134/agronj14.0467>
21. **Sidhu, S.S.**, J. Yu, and P.E. McCullough. 2014. Nicosulfuron absorption, translocation, and metabolism in annual bluegrass and four turfgrass species. *Weed Sci.* 62: 433-440. <https://doi.org/10.1614/WS-D-13-00182.1>

22. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, and P.L. Raymer. 2014. Optimizing laccase application on creeping bentgrass (*Agrostis stolonifera* L.) to facilitate biodethatching. *Crop Sci.* 54: 1804-1815. <https://doi.org/10.2135/cropsci2013.09.0612>
23. **Sidhu, S.S.**, J. Yu, and P.E. McCullough. 2014. Physiological behavior of ethephon in five turfgrasses. *Crop Sci.* 54: 1816-1822. <https://doi.org/10.2135/cropsci2013.07.0511>
24. McCullough, P.E., **S.S. Sidhu**, R. Singh, and J. Yu. 2014. Seashore paspalum growth regulation with flucarbazone-sodium. *Crop Sci.* 54: 1197-1204. <https://doi.org/10.2135/cropsci2013.09.0640>
25. McCullough, P.E., **S.S. Sidhu**, R. Singh, and T.V. Reed. 2014. Flucarbazone-sodium absorption, translocation, and metabolism in bermudagrass, Kentucky bluegrass, and perennial ryegrass. *Weed Sci.* 62: 230-236. <https://doi.org/10.1614/WS-D-13-00113.1>
26. McCullough, P.E., and **S.S. Sidhu**. 2014. Ethephon absorption and transport associated with annual bluegrass inflorescence suppression. *Crop Sci.* 54: 845-850. <https://doi.org/10.2135/cropsci2013.06.0362>
27. Gomez de Barreda, D., **S.S. Sidhu**, J. Yu, T.V. Reed, and P.E. McCullough. 2014. Dithiopyr efficacy, absorption, and fate in annual bluegrass, goosegrass, smooth crabgrass, and tall fescue. *Agron. J.* 106: 844-850. <https://doi.org/10.2134/agronj13.0366>
28. McCullough, P.E., D. Gomez de Barreda, **S.S. Sidhu**, and J. Yu. 2014. Dithiopyr behavior in smooth crabgrass (*Digitaria ischaemum*) as influenced by growth stage and temperature. *Weed Sci.* 62: 11-21. <https://doi.org/10.1614/WS-D-13-00089.1>
29. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, and P.L. Raymer. 2013. Efficacy of fungal laccase to facilitate biodethatching in bermudagrass and zoysiagrass. *Agron. J.* 105: 1247-1252. <https://doi.org/10.2134/agronj2012.0470>
30. Kumar, D., and **S.S. Sidhu**. 2013. Response of soybean to soil applied sulfur and boron in a calcareous soil. *J. Plant Nutr.* 36: 1795-1807. <https://doi.org/10.1080/01904167.2013.805223>
31. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, and P.L. Raymer. 2013. Laccase mediated changes in physical and chemical composition properties of thatch layer in creeping bentgrass (*Agrostis stolonifera* L.). *Soil Biol. Biochem.* 64: 48-56. <https://doi.org/10.1016/j.soilbio.2013.04.002>
32. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, and P.L. Raymer. 2012. Use of fungal laccases to facilitate biodethatching: A new approach. *Hortscience.* 47: 1536-1542. <https://doi.org/10.21273/HORTSCI.47.10.1536>
33. Kumar, D., and **S.S. Sidhu**. 2010. Effect of soil applied sulfur and boron on yield and uptake of boron in soybean. *Ann. Agri-Bio. Res.* 15: 57-62.
34. Kumar, D., **S.S. Sidhu**, K.N. Sharma, and V. Singh. 2009. Influence of soil applied sulfur and boron on yield and quality parameters of soybean. *Ann. Biol.* 25 (2): 105-111.

Manuscripts In Press

1. Maltais-Landry, G., M. James, C. Wilson, L. Schumacher, Z. Grabau, **S. Sidhu**, and S. George. 2023. Long-term integration of bahiagrass into a cover-cropped and strip-tilled peanut-cotton rotation has a limited effect on soil carbon and other soil properties. *Soil Sci. Soc. Am. J.*

Manuscripts In Preparation

1. **Sidhu, S.S.***, E. Nafi, R. Seepaul, S. George, I.M. Small, and D.L. Wright. 2023. Testing nitrogen calibration strip in FL panhandle. *To be submitted to Crop Science.*
2. **Sidhu, S.S.***, Q. Huang, R.N. Carrow, and P.L. Raymer. 2023. Residual effect of laccase application on thatch layer characteristics of bermudagrass and zoysiagrass. *To be submitted to HortScience.*
3. Yu, J., C.R. Johnston, **S.S. Sidhu**, and P.E. McCullough. 2023. Absorption and degradation rate influence turfgrass susceptibility to mesotrione. *To be Submitted to Weed Sci.*
4. Arruda Huugins De Sa Leitao, D., **S.S. Sidhu**, and L. Sharma. 2023. Use of drone image analysis to estimate corn biomass, height, and yield in Florida. *To be submitted to Agron. J.*
5. Arruda Huugins De Sa Leitao, D., **S.S. Sidhu**, and L. Sharma. 2023. Investigating nitrogen rates for grain corn production in Suwanee Valley Florida. *To be submitted to Crop Sci.*
6. Arruda Huugins De Sa Leitao, D., **S.S. Sidhu**, and L. Sharma. 2023. Using DSSAT cropping systems model and drain gauge lysimeters to predict environmental impacts of nitrate leaching in corn production system. *To be submitted to Soil Sci. Soc. Am. J.*

Utility Patents Granted

1. Huang, Q., **S. S. Sidhu**, P.L Raymer, and R. N. Carrow. Methods and compositions using fungal laccases to reduce turf thatch. U.S. Patent 10,053,674., Aug. 21, 2018.
2. Huang, Q., **S. S. Sidhu**, P.L Raymer, and R. N. Carrow. Methods and compositions using fungal laccases to reduce turf thatch. U.S. Patent 8,919,039., Dec. 30, 2014.

Utility Patent Application

1. Huang, Q., and **S.S. Sidhu**. 2013. Methods and compositions using lignolytic enzymes and mediators to reduce and reform lignin contents in lignocellulosic biomass. WIPO Publication No. WO 2013/055890 A1. April 18, 2013.

GRANTS

Funded Grants: Principal Investigator

1. **Madison County Soil and Water Conservation District (2023):** Testing efficacy of Everlizer (granular chicken litter) and controlled release fertilizer on corn production. PI: **S.S. Sidhu** (University of Florida). Co-PIs: D. Fenneman, R. Hochmuth, V. Sharma, and J. Love. Awarded: \$3,750
2. **Suwannee County Conservation District (2023):** On-farm demonstration of corn nitrogen rate studies. PI: S.S. Sidhu (University of Florida). Co-PI: L. Sharma. Awarded: \$ 8,064
3. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2022-2023):** Developing NDVI as a non-destructive tool for in-season nitrogen content and fertilizer rate determination in corn. PI: **S.S. Sidhu** (University of Florida). Co-PIs: J. Capasso, A. Phillips, T. Pitman, D. Fenneman, E. Beach, M. Warren, K. Wynn, and K. Korus. Awarded: \$30,640.60
4. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2022-2023):** Multi-County on-farm corn nitrogen rate demonstrations in parallel to ongoing corn rate trial research at NFREC-SV. PI: **S.S. Sidhu** (University of Florida). Co-PIs: L. Sharma, K. Aue, A. Phillips, and D. Fenneman. Budgeted: \$11,892.59
5. **Florida Department of Agriculture and Consumer Services (2017-2034):** Demonstrating and measuring the effectiveness of rotational production as a Best Management Practice to reduce nitrogen inputs and irrigation water use in the Suwannee River Basin. PI: **S.S. Sidhu** (University of Florida). Co-PI's: V. Sharma, R. Hochmuth, K. Athearn, P. Troy (2017-2018), and C. Barrett (2017-2021). Awarded: \$8,322,601.22
6. **Florida Department of Agriculture and Consumer Services (2020-2025):** On-Farm application of best management practices: Timing, rate and placement of nutrients with cover cropping. PI: **S.S. Sidhu** (University of Florida). Co-PI's: R. Hochmuth, and J. Love. Awarded: \$1,208,978
7. **Florida Department of Agriculture and Consumer Services (2022-2023):** Peanut decline caused by carbonates in water? PI: **S.S. Sidhu** (University of Florida). Co-PI's: I. Small, M. Warren, S. Willis, and D. Fenneman. Awarded: \$26,153
8. **Florida Department of Agriculture and Consumer Services (2022-2023):** Testing a controlled release potassium fertilizer to bolster peanut health on farms impacted by peanut decline PI: **S.S. Sidhu** (University of Florida). Co-PI's: D. Wright and M. Warren. Awarded: \$10,375

9. **Florida Department of Agriculture and Consumer Services (2021-2022):** Impact of winter grazing on peanut yield, quality (including aflatoxin) and the “Peanut Decline” condition. PI: **S.S. Sidhu** (University of Florida). Co-PI’s: R. Seepaul, S. George, and D.L. Wright.
Awarded: \$22,625

Funded Grants: Co-Principal Investigator

The dollar sign (\$) indicates a grant for which I am an official Co-PI instead of PI due to postdoc status, but on which I am the lead/co-writer and project director.

The asterisk () indicates a grant for which I was not an official PI/Co-PI due to graduate student status, but on which I was a co-writer and project leader.*

1. **Florida Department of Agriculture and Consumer Services (2024-2025):** Investigating agronomic and economic efficiency of enhanced efficiency nitrogen fertilizers for cotton production in Florida. PI: H. Singh (University of Florida). Co-PIs: M. Dukes, L. Sharma, E. Carter, **S.S. Sidhu**, and L. Johnson
Budgeted: \$1,230,452
2. **Florida Department of Agriculture and Consumer Services (2024-2026):** Evaluating the Efficacy of Complete Controlled-Release-Fertilizer for Cold Hardy Citrus Production in North Florida. PI: M. Shahid (University of Florida). Co-PIs: **S.S. Sidhu**, K. Morgan, D.M. Kadyampakeni, and K. Athearn.
Budgeted: \$594,675
3. **Florida Department of Agriculture and Consumer Services (2024-2026):** Development of Florida Agricultural Stakeholder Engagement Program (STEP) in cotton production system to enhance best management practices. PI: V. Sharma. Co-PIs: H. Singh, K. Athearn, **S.S. Sidhu**, E. Carter, and L. Johnson.
Budgeted: \$1,063,964
4. **USDA-NRCS- Conservation Innovation Grants (2022):** Advancing precision variable rate irrigation technology to optimize crop water productivity and environmental sustainability. PI: V. Sharma (University of Florida). Co-PIs: **S.S. Sidhu**, H. Medeiros, M. Dukes, W. Porter, V. Sharma, L. Lacerda, and T. Herbert.
Awarded: \$1,658,031
5. **Florida Department of Agriculture and Consumer Services (2023-2026):** Crop performance, environmental, and economic evaluation of irrigation technologies for corn and peanut nutrient BMPs in Suwannee River Water Management District. PI: V. Sharma (University of Florida). Co-PIs: **S.S. Sidhu**, M. Dukes, and B. Broughton.
Awarded: \$526,142
6. **Florida Department of Agriculture and Consumer Services (2023-2026):** Florida agricultural soil moisture sensor network: Program evaluation and expansion. PI: V. Sharma (University of Florida). Co-PIs: Y. Goodiel, **S.S. Sidhu**, L. Hickey, C. Frey, W. Mussoline, A. Paolillo, S. Steed, A. Meszaros, G. Vicari, W. Elwakil, and M. Warren.
Awarded: \$400,012

7. **Florida Department of Agriculture and Consumer Services (2023-2026):** Accelerating Florida agricultural stakeholder engagement program to enhance best management practices. PI: V. Sharma (University of Florida). Co-PIs: K. Athearn, **S.S. Sidhu**, J. A. Watson, L. Sharma, M. Dukes, B. Broughton, J. Love, and K. Aue.
Awarded: \$426,360
8. **Suwanee River Water Management District (2023):** Improving nitrogen use efficiency through new fertilizer technology/ 5 R's farm demonstration program. PI: R. Hochmuth (University of Florida). Co-PIs: **S.S. Sidhu**, K. Athearn, K. Aue, and J. Love.
Awarded: \$25,000
9. **Gilchrist County Soil and Water Conservation District (2023):** Improving nitrogen use efficiency through new fertilizer technology in sweet corn. PI: R. Hochmuth (University of Florida). Co-PIs: T. Pittman, **S.S. Sidhu**, V. Sharma, K. Aue, and J. Love.
Awarded: \$10,000
10. **USDA-National Institute of Food and Agriculture (2017-2023):** Floridan aquifer collaborative engagement for sustainability. PI: W. Graham (University of Florida). Co-PIs: Faculty of University of Florida, University of Georgia, Albany State University, and Auburn University. **S.S. Sidhu** (Co-PI; substituted Dr. Charles Barrett in **2022**)
Awarded: \$4,918,922 (Total); \$156,983 (NFREC-SV).
11. **USDA-National Institute of Food and Agriculture (SCRI) (2019-2023):** Integrated management of emerging seedborne bacterial diseases of cucurbits and chenopods (IMDCC). PI: C. Bull (Penn State University). Co-PIs: University of Florida (Mathews Paret, Jeffery Jones, **S.S. Sidhu** (sub for Joshua Freeman in **2022**)).
Awarded: \$398,675 (University of Florida)
12. **California Fresh Carrot Advisory Board (2022-2023):** Evaluation of fungicide performance delivered by solid-set overhead sprinkler irrigation system on Alternaria leaf blight and Cottony rot, and farmers participatory evaluation. **PI:** M. Paret (University of Florida). Co-PIs: R. C. Hochmuth and **S.S. Sidhu**.
Awarded: 41,338
13. **UF/IFAS Specific Appropriations 1480A for Nutrient Management Research (2022-2023):** Equipment needs for precision ag. research at NFREC-SV to fulfil knowledge gaps in nutrient management. PIs: R.C. Hochmuth (University of Florida). Co-PIs: **S.S. Sidhu**, V. Sharma, L. Sharma, and Vacant NFREC-SV agronomic crop RSA.
Awarded: \$786,271.84
14. **UF/IFAS Specific Appropriations 1480A for Nutrient Management Research (2022-2023):** Quantify N loss as gas and use precision tools to estimate nitrogen and phosphorus requirements. PI: L. Sharma (University of Florida). Co-PIs: P. Fletcher, **S.S. Sidhu**, H. Singh, D. Wright, L. Johnson, E. Carter, C. Christensen, J. Brym, P. Devkota, and K. Morgan.
Awarded: \$126,600
15. **UF/IFAS Specific Appropriations 1480A for Nutrient Management Research (2022-2023):** Developing site-specific recommendations on nitrogen application rate and timing for

cold hardy satsuma mandarin production in North Florida. PI: M. Shahid (University of Florida). Co-PIs: C. Mackowiak, H.L, Liao, P. Devkota, D. Sprague, **S.S. Sidhu**, K. Athearn.
Awarded: \$302,383

16. **Florida Department of Agriculture and Consumer Services (2021-2025):** Developing nitrogen recommendations for Florida corn growers. PI: L. Sharma (University of Florida). Co-PIs: M. Dukes and **S.S. Sidhu**
Awarded: \$679,748
17. **Florida Department of Agriculture and Consumer Services (2021-2024):** Developing improved nitrogen recommendations for Florida cotton growers. PI: L. Sharma (University of Florida). Co-PIs: M. Dukes, D. Wright, S. George, **S.S. Sidhu**, and H. Singh.
Awarded: \$602,912
18. **Florida Department of Agriculture and Consumer Services (2020-2023):** Nitrogen calibration strip as a tool to reduce fertilizer nitrogen input in cotton. PI: D.L. Wright (University of Florida). Co-PI's: **S.S. Sidhu**, S. George, A. Albertin, and I. Small.
Awarded: \$1,129,850
19. **Eastern Region Soybean Board (2021-2022):** Impact of cover crop and double cropping on soybean yield and profitability. PI: D.L. Wright (University of Florida). Co-PI's: R. Seepaul, **S.S. Sidhu**, and I. Small.
Budget: \$20,849
20. **National Peanut Board (Southern Peanut Research Initiative) (2021-2022):** Investigating the role of enhanced crop rotation systems and cattle grazing on aflatoxin management in peanuts. PI: D.L. Wright (University of Florida). Co-PI's: **S.S. Sidhu**, S. George, and I. Small.
Awarded: \$21,694
21. **Northwest Florida Water Management District (2020-2021):** Development of a sod-based rotation system. PI: D.L. Wright (University of Florida). Co-PI's: I. Small, **S.S. Sidhu**, C.L. Mackowiak, S. George, and A. Albertin.
Awarded: \$64,000
22. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2020-2021):** A hands-on training on utilizing Veris MSP3 and nitrogen calibration strips to optimize N use in summer crops in Florida Panhandle. PI: E. Carter (University of Florida). Co-PI's: J. Capasso, D. Broughton, D.L. Wright, and **S.S. Sidhu**.
Awarded: \$8,070
23. **Florida Department of Agriculture and Consumer Services (2020-2021):** Impact of cover crops/cash covers and planting date on peanut yield, disease, and quality. PI: D.L. Wright (University of Florida). Co-PI's: **S.S. Sidhu**, and R. Seepaul.
Awarded: \$22,094
24. **Florida Peanut Producers Association (2020-2021):** Investigating the role of soil pH and plant nutrition in peanut decline. PI: D.L. Wright (University of Florida). Co-PI's: M. Warren, D.T. Broughton, S. George, **S.S. Sidhu**, and I. Small.

Awarded \$5,040.

25. ***Northwest Florida Water Management District (2019-2020):** Development of a sod-based rotation system. PI: D.L. Wright (University of Florida). Co-PI's: I. Small, **S.S. Sidhu**, C.L. Mackowiak, S. George, and A. Albertin.
Awarded: \$64,000
26. ***Florida Peanut Producers Association (2019-2020):** Comparison of Nematicide/ Insecticides in peanut with an optimal vs. less-than-optimal rotation. PI: D.L. Wright (University of Florida). Co-PI's: I. Small, **S.S. Sidhu**, and S. George.
Awarded: \$17,360
27. ***Northwest Florida Water Management District (2018-2019):** Development and public outreach for a sod-based crop rotation system. PI: D.L. Wright (University of Florida). Co-PI's: I. Small, **S.S. Sidhu**, C.L. Mackowiak, S. George, and A. Albertin.
Awarded: \$64,000
28. ***Georgia Golf Environmental Foundation (2011):** A novel method to facilitate biodethatching using fungal laccases. PI: Q. Huang (University of Georgia). Co-PI's: P.L. Raymer, and R.N. Carrow.
Awarded: \$10,000
29. ***United States Golf Association (2010):** Use of fungal laccases to facilitate biodethatching of Golf Course greens: Process optimization. PI: Q. Huang (University of Georgia). Co-PI's: P.L. Raymer, and R.N. Carrow.
Awarded: \$40,000

Grants-Pending

1. Florida Department of Environmental Protection (2024): Optimizing in-season nitrogen application rate in corn by development of decision-making tools like sap testing and NDVI to improve the nutrient utilization efficiency and water quality. PI: **S.S. Sidhu** (University of Florida). Co-PIs: S. Kumar and L. Sharma.
Budgeted: \$540,362
2. Florida Department of Environmental Protection (2024): Optimizing polymer coating and placement methodology of Controlled Release Fertilizers (CRF) in corn and cotton to decrease nitrate loss for improved water quality in FL ecosystems. PI: **S.S. Sidhu** (University of Florida). Co-PIs: S. Kumar and L. Sharma.
Budgeted: \$408,383
3. USDA-National Institute of Food and Agriculture-AFRI (2024): How long-term crop rotational management and grazing affect the functional network of soil biota, soil health, and crop productivity. PI: H-L, Liao (University of Florida). Co-PIs: **S.S. Sidhu**, Z. Grabau, G. Maltais Landry, K. Zhang.
Budgeted: \$749,700

4. USDA-National Institute of Food and Agriculture-AFRI (2024): Unleashing the potential of living mulch for resilient and sustainable cotton production in Southeast US. PI: H. Singh (University of Florida); Co-PIs: S. Vieira de Paula Moraes, **S.S. Sidhu**, S. Kumar, and K. Athearn.
Budgeted: \$749,996
5. Florida Department of Agriculture and Consumer Services-Marketing and Development (2024): Optimizing nitrogen fertigation in blackberry production in Florida. PI: M.A. Shahid (University of Florida). Co-PIs: **S.S. Sidhu**, A. Sarkhosh, and S. Agihara.
Budgeted: \$291,868
6. National Peanut Board (2024): Use of controlled release potassium fertilizer to study its effect on peanut growth, disease severity, yield and quality. PI: **S.S. Sidhu** (University of Florida). Co-PIs: S. Kumar, and M. Warren.
Budgeted: \$34,052
7. National Peanut Board (2024): Florida peanut diagnostic survey to maintain a database of variable aspects of peanut cultivation in the growing season and to assess the cause of the phenomenon of peanut collapse/decline through modelling. S. Kumar (University of Florida). Co-PIs: **S.S. Sidhu**, B. Tillman, and N. Dufault.
Budgeted: \$34,392
8. National Peanut Board (2024): Effect of different rates and split application of potassium fertilizer on peanut growth, disease severity, yield and quality. PI: S. Kumar (University of Florida). Co-PIs: **S.S. Sidhu**, K. Wynn and M. Warren.
Budgeted: \$43,652
9. National Peanut Board (2024): To compare different conservation tillage practices on peanut yield, quality, disease and pest severity grown under irrigated and non-irrigated conditions.. PI: **S.S. Sidhu** (University of Florida). Co-PIs: S. Kumar, E. Carter, N. Dufault, I. Esquivel, and B. Tillman.
Budgeted: \$26,515
10. National Peanut Board (2024): To investigate efficacy of chelated iron application methods on peanut yield, quality, and disease severity. PI: **S.S. Sidhu** (University of Florida). Co-PIs: S. Kumar, K. Wynn and M. Warren.
Budgeted: \$29,252

INVITED TALKS

International Talks

1. **Sidhu, S.S.** (Nov. 2022). Cropping systems approach for improving nutrient use efficiency: Integrating layers of precision agriculture, pasture, cover crops, and cattle grazing on row crop land. *Distinguished Lecture Series* under Indian Council of Agricultural Research-National Agricultural Higher Education Program at School of Natural Resources Management, Department of Soil Science, Punjab Agricultural University, Ludhiana, Punjab, India.

Symposium Talks

1. **Sidhu, S.S.** (Oct. 2022). Resilient cropping system: Pathway for sustainable future. *Symposium: Conservation and integrated crop-livestock systems: Accomplishments and aspirations (Dr. David Wright's 45 years of legacy)*. UF-IFAS North Florida Research and Education Center-Quincy, FL.

CONFERENCE ABSTRACTS/ PRESENTATIONS

Symposium Talks

1. **Sidhu, S.S.**, D.L. Wright, and I.M. Small (Nov. 2020). Cover crops and cattle grazing as a BMP for following crop production. ASA-CSSA-SSSA Annual International Meetings (Virtual).

Oral Presentations

1. **Sidhu, S.S.**, S. S. Bhullar, B. Acharya, V. Sharma, and S. Kumar (Nov. 2023). Cropping Systems-Based Approach for Improving Water Quality and Nutrient Management. ASA-CSSA-SSSA Annual International Meetings, St. Louis, MO.
2. Bhullar, S.S., L. Sharma, S. Kumar, and **S. S. Sidhu** (Nov. 2023). On-Farm Application of Best Management Practices: Timing, Rate and Placement of Nutrients with Cover Cropping. ASA-CSSA-SSSA Annual International Meetings, St. Louis, MO.
3. Omara, P., H. Singh, J. E. Iboyi, L. Sharma, L.J. Mulvaney, E. Carter, L. Johnson, **S. S. Sidhu**, K. Singh, and N. Nwosu (Nov. 2023). Developing Improved Nitrogen Recommendations for Florida Cotton Growers. ASA-CSSA-SSSA Annual International Meetings, St. Louis, MO.
4. Nafi, E., S.S. Sidhu, T. Stansly, L. Bolton, I.M. Small, S. George, D.L. Wight, and C. L. Mackowiak (Nov. 2023). On-Farm Evaluation of Nitrogen Calibration Strip: Lessons from a 3-Year Case Study in Panhandle Florida. ASA-CSSA-SSSA Annual International Meetings, St. Louis, MO.
5. **Sidhu, S.S.** (Aug. 2023). An update and vision for 4Rs project: Use of Miller High Boy for nutrient management and beyond. UF/IFAS Agricultural Best Management Practices Summit, Plant Science Research and Education Unit, Citra, FL.
6. Nafi, E., T.L. Stansly, **S.S. Sidhu**, S. George, I. Small, and D.L. Wright. (Jan. 2023). Nitrogen calibration strip based site-specific N management in cotton using soil mapping and mid-season proximal and remote sensing. Beltwide Cotton Conferences, New Orleans, LA.
7. **Sidhu, S.S.**, V. Sharma, B. Acharya, R. Hochmuth, and L. Sharma. (Nov. 2022). Impacts of cropping systems on crop yields and FL water quality. ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.

8. **Sidhu, S.S.**, R. Seepaul, T. Stansly, S. George, and D. Wright. (Nov. 2022). Efficacy of nitrogen calibration strips as a site-specific tool for cotton grown across Florida Panhandle. ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.
9. Arruda Huggins De Sa Leitao, D., **S.S. Sidhu**, W. Griffin, H. Muehleisen, and L. Sharma. (Nov. 2022). Reduce nitrogen leaching and evaluate the irrigated corn yield response to different nitrogen rates in Florida. ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.
10. Arruda Huggins De Sa Leitao, D., **S.S. Sidhu**, W. Griffin, H. Muehleisen, and L. Sharma. (Nov. 2022). Use of NDVI and SPAD sensor-based data for corn nitrogen recommendation in Florida. ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.
11. Albertin, A. E. Nafi, G. Anguelov, V. Guerra, **S.S. Sidhu**, T. Stansly, C. Mackowiak, S. George, and D. Wright. (Nov. 2022). Perennial grass-based rotations influence nitrate leaching in Southeast US cropping systems. ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.
12. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, D. Jespersen, J. Liu, and P.L. Raymer. (July 2022). A review of a novel enzyme system for the management of thatch and soil water repellency in turfgrass. 14th International Turfgrass Research Conference, Copenhagen, Denmark.
13. Sharma, V., B. Acharya, C. Barrett, **S.S. Sidhu**, L. Sharma, L. Zotarelli, H. Bayabil, and M. Dukes (July 2022). Effectiveness of rotational production as a best management practice to reduce nitrogen inputs and irrigation water-use. ASABE Annual International Meetings, Houston, TX.
14. Sharma, V., B. Acharya, and **S.S. Sidhu** (May 2022). Quantifying the effectiveness of rotational production as a best management practice to reduce nitrate leaching in Suwannee River Basin, Florida. Florida Section of ASABE Annual Meeting, Clearwater, FL.
15. **Sidhu, S.S.** (April 2022). NDVI sensor-based nitrogen management: Nitrogen Calibration Strip. UF/IFAS Agricultural Best Management Practices Summit (Virtual Meeting). <https://bmp.ifas.ufl.edu/bmp-in-action/2022-summit/>
16. **Sidhu, S.S.**, S. George, R. Seepaul, I.M. Small, and D.L. Wright (Nov. 2021). Testing nitrogen calibration strips in cotton grown across Florida panhandle. ASA-CSSA-SSSA Annual International Meetings, Salt Lake City, UT.
17. Seepaul, R., **S.S. Sidhu**, I.M. Small, S. George, J.J. Marois, and D. L. Wright (Nov. 2021). Productivity and profitability of double-cropping with winter carinata in Florida. ASA-CSSA-SSSA Annual International Meetings, Salt Lake City, UT.
18. James, M., G. Maltais-Landry, **S.S. Sidhu**, S. George, and D. L. Wright (Nov. 2021). The long-term effects of crop rotation and irrigation on total carbon and nitrogen, cation exchange capacity and Mehlich extractable nutrients in sub-tropical cotton-peanut rotations of Northern Florida. ASA-CSSA-SSSA Annual International Meetings, Salt Lake City, UT.

19. Seepaul, R., M. J. Mulvaney, H. Sintim, S. Kulesza, J.E. Iboyi, R. Dewey Lee, **S.S. Sidhu**, S. George, I.M. Small, and D.L. Wright. (Nov. 2021). Co-application of poultry litter and mineral nitrogen on winter carinata agronomic performance. ASA-CSSA-SSSA Annual International Meetings, Salt Lake City, UT.
20. **Sidhu, S.S.**, D.L. Wright, S. George, and I.M. Small (Nov.2020). Nitrogen calibration strip: an on-farm tool for site-specific in-season nitrogen application decisions in cotton. ASA-CSSA-SSSA Annual International Meetings (Virtual Meetings).
21. Small, I.M., R. Borocco, J. Clohessy, **S.S. Sidhu**, and D.L. Wright (Nov. 2019). Leveraging remote sensing, soil mapping, and environmental sensors to quantify impacts of cropping systems in long term studies. ASA-CSSA-SSSA Annual International Meetings, San Antonio, TX.
22. Wright, D.L., **S.S. Sidhu**, S. George, and I.M. Small (Nov. 2019). Developing and maintaining a 20-year crop/livestock farming system. ASA-CSSA-SSSA Annual International Meetings, San Antonio, TX.
23. **Sidhu, S.S.**, and P.E. McCullough (Jan. 2014). TifGrand bermudagrass seedhead control with herbicides and plant growth regulators. Southern Weed Science Society Annual Meeting, Birmingham, AL.
24. **Sidhu, S.S.**, M. Aderhold, and P.E. McCullough (Jan. 2014). Preemergence goosegrass control with flumioxazin in bermudagrass. Southern Weed Science Society Annual Meeting, Birmingham, AL.
25. Singh, R., **S.S. Sidhu**, and P.E. McCullough (Jan. 2014). Differential absorption, translocation, and metabolism of atrazine and amicarbazone in seashore paspalum. Southern Weed Science Society Annual Meeting, Birmingham, AL.
26. **Sidhu, S.S.**, and P.E. McCullough (Jan. 2014). Ethephon absorption and distribution associated with annual bluegrass seedhead suppression. Northeastern Weed Science Society Annual Meeting, Philadelphia, PA.
27. Singh, R., **S.S. Sidhu**, T. Reed, and P.E. McCullough (Jan. 2014). Flucarbazone-sodium selectivity for perennial ryegrass control in bermudagrass and Kentucky bluegrass. Northeastern Weed Science Society Annual Meeting, Philadelphia, PA.
28. **Sidhu, S.S.**, P.L. Raymer, Q. Huang, and R.N. Carrow (Nov. 2013). Residual effect of laccase application on thatch layer characteristics of creeping bentgrass. ASA-CSSA-SSSA Annual International Meetings, Tampa, FL.
29. Gomez de Barreda, D., P.E. McCullough, J. Yu, and **S.S. Sidhu** (Feb. 2013). Uptake, translocation, and metabolism of methiozolin in weed species. Weed Science Society of America Annual Meeting, Baltimore, MD.
30. **Sidhu, S.S.**, and P.E. McCullough (Jan. 2013). Warm-season turfgrass establishment in spring after fall indaziflam applications. Southern Weed Science Society Annual Meeting, Houston, TX.

31. **Sidhu, S.S.**, and Q. Huang (Feb. 2012). Laccase mediated lignin removal from lignocellulosic biomass for bioethanol production. ASA-Southern Regional Branch Annual Meeting, Birmingham, AL.
32. **Sidhu, S.S.**, P.L. Raymer, Q. Huang, and R.N. Carrow (Oct. 2011). Biodethatching using fungal laccases: Process optimization. ASA-CSSA-SSSA Annual International Meetings, San Antonio, TX.
33. **Sidhu, S.S.**, and Q. Huang (Oct. 2011). Enzymatic pretreatment of lignocellulosic biomass for bioethanol production. ASA-CSSA-SSSA Annual International Meetings, San Antonio, TX.
34. Singh, R., Q. Huang, and **S.S. Sidhu** (Oct. 2011). Transformation of sulfadimethoxine in soil mediated by laccase and horseradish peroxidase. ASA-CSSA-SSSA Annual International Meetings, San Antonio, TX.
35. **Sidhu, S.S.**, Q. Huang, P.L. Raymer, and R.N. Carrow (Feb. 2011). Use of fungal laccase to facilitate biodethatching. ASA-Southern Regional Branch Annual Meeting, Corpus Christi, TX. – *First Place*
36. **Sidhu, S.S.**, Q. Huang, P.L. Raymer, and R.N. Carrow (Nov. 2010). Biodethatching using fungal laccases. ASA-CSSA-SSSA Annual International Meetings, Long Beach, CA. – *First Place*

Poster Presentations

1. **Sidhu, S.S.**, and P.E. McCullough (Jan. 2014). Evaluations of echelon programs for annual bluegrass and smooth crabgrass control in bermudagrass. Southern Weed Science Society Annual Meeting, Birmingham, AL.
2. **Sidhu, S.S.**, P.L. Raymer, Q. Huang, and R. N. Carrow (Nov. 2013). Efficacy of fungal laccase to facilitate biodethatching in bermudagrass and zoysiagrass. ASA-CSSA-SSSA Annual International Meetings, Tampa, FL.
3. **Sidhu, S.S.**, C.R. Johnston, and P.E. McCullough (Sep. 2013). Evaluation of ecology of invasive weeds in Georgia roadsides. Georgia Department of Transportation Conference, Atlanta, GA.
4. **Sidhu, S.S.**, D. Gomez de Barreda, and P.E. McCullough (Feb. 2013). Cool-season turfgrass seedling tolerance to metamifop. Weed Science Society of America Annual Meeting, Baltimore, MD.
5. **Sidhu, S.S.**, and P.E. McCullough (Jan. 2013). Evaluation of application timing of quinclorac plus carfentrazone during tall fescue establishment. Southern Weed Science Society Annual Meeting, Houston, TX.

6. **Sidhu, S.S.**, P.L. Raymer, Q. Huang, and R.N. Carrow (Feb. 2012). Optimizing laccase application on creeping bentgrass to facilitate biodethatching. ASA-Southern Regional Branch Annual Meeting, – *First Place*

RESEARCH BULLETINS

1. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, and P.L. Raymer. 2012. Optimizing laccase application rate and frequency to manage thatch. 2012 UGA Turfgrass Field Day Guide. pp 35-36.
2. **Sidhu, S.S.**, and Q. Huang. 2010. Control of thatch using wood decaying fungi. 2010 UGA Turfgrass Field Day Guide. pp 27-29.

PROGRESS REPORTS

1. Yearly and quarterly reports for UF/IFAS Fertilizer rate and nutrient management studies, HB 5001 and SB 1000 (FY 2022-23 continuation) and SB 2500 (FY 2023-24).
2. Annual report to UF-Agronomy Department Head, Dr. Gopal Kakani, for peanut checkoff grant “Testing a Controlled Release Potassium Fertilizer to Bolster Peanut Health on Farms Impacted by Peanut Decline”, July 2022
3. Annual report to UF-Agronomy Department Head, Dr. Gopal Kakani, for peanut checkoff grant “Peanut decline caused by carbonates in water?”, July 2022
4. Yearly and quarterly reports for Florida Department of Agriculture and Consumer Services for project “On-Farm Application of Best Management Practices: Timing, Rate and Placement of Nutrients with Cover Cropping”, 2022-Present.
5. Yearly and quarterly reports for Florida Department of Agriculture and Consumer Services for the project “Demonstrating and Measuring the Effectiveness of Rotational Production as a Best Management Practice to reduce nitrogen inputs and irrigation water use in the Suwannee River Basin”, 2022-Present.
6. Yearly and quarterly reports for Florida Department of Agriculture and Consumer Services for project “Nitrogen calibration strip as a tool to reduce fertilizer nitrogen input in cotton”, 2021.
7. Yearly and quarterly reports for Florida Department of Agriculture and Consumer Services for project “Evaluate the effectiveness of sod-based rotation system and cattle grazing in reducing nutrient inputs to ground water in the Jackson Blue Springs Basin”, 2020-2021.
8. Final report for Northwest Florida Water Management District for project “Integrating field mapping and nitrogen calibration strips to develop in-season nitrogen application tool for cotton in an integrated perennial grass/livestock cropping system”, 2018-2020.
9. Final report for National Peanut Board for project “Comparison on nematicides/insecticides in peanut with an optimal vs less optimal rotation”, 2018-2019.

10. Final report for Northwest Florida Water Management District for project “Development of a sod-based rotation system”, 2018-2019.
11. Bi-annual progress reports for the Golf Course Superintendents Association of America for project “Use of laccase enzyme for dethatching in turfgrass systems”, 2008-2010.
12. Prepared annual progress reports and research presentations for Georgia Golf Environmental Foundation for project “Use of laccase enzyme for dethatching in turfgrass systems”, 2008-2012.

RESEARCH SKILLS

- Extensive experience in wet chemistry analytical techniques, instrumentation, protocol development, designing experiments, establishing and managing field, greenhouse, and laboratory trials, data collection, data interpretation, and statistical data analysis.
- Trained to use field mapping systems such as Veris Technologies MSP3, capacitance-based soil moisture and salinity probes, geoprobe systems for deep soil core sampling, variable rate irrigation systems, precision ag. sensors, and lysimeters for site-specific nutrient and water management.
- Skilled to conduct hydroponic studies and work with radio isotopes.
- Trained to work with laboratory instruments: HPLC, LC-MS-MS, FTIR, NMR, UV/Vis spectrophotometer, LSC, biological oxidizer, radiochromatogram scanner, and atomic absorption spectrophotometer.
- Efficient in conducting laboratory bench studies and maintaining research laboratory operations and equipment.
- Substantial experience in scientific writing: peer reviewed journal articles, patent applications, popular articles, research bulletins, grant proposals, and progress reports.

EXTENSION EXPERIENCE

EXTENSION PROGRAMS

- Develop and demonstrate the use of precision ag. techniques for efficient nutrient and water management.
- Assist growers, policy makers, and regulatory agencies about integrated crop-livestock, pasture, and cover crops in improving water and nutrient use.
- Provide support for county extension faculty and stakeholders.

EXTENSION ACTIVITIES (Overview)

- Establish on-farm trials to demonstrate side-dress liquid nitrogen in corn, nitrogen calibration strips in corn and cotton, integrated crop-livestock systems, and cover crops as BMPs for efficient nutrient management and improved water quality.
- Establish on-farm trials evaluating new fertilizer technologies such as controlled release fertilizer and heat-treated chicken litter (Everlizer), in corn, watermelon, sweet corn, and carrots.
- Farm visits to assist growers with establishing drip and overhead sprinkler systems and to educate growers in efficient use of capacitance-based soil moisture probes for informed irrigation needs.
- Connect stakeholders with specialists to assist stakeholders and recruit growers for demonstration trials.
- Manage [Twitter](#) handle and [YouTube](#) channel to educate subscribers using grower testimonial videos and providing information on latest research and demonstration activities at NFREC.

ON-FARM DEMONSTRATION/RESEARCH TRIALS**4Rs Project in Hamilton and Suwannee Counties (4 farms), 2023**

On-farm demonstration trials were established on five farms in two counties to compare liquid nitrogen applied as a side dress using Miller High Boy with a common practice of fertigating through the central pivot system or broadcasting granular nitrogen fertilizer. These practices are compared on soil electrical conductivity-based zones on each farm. Demonstration sites were established at two locations farmed by Mike Adams in Hamilton County; one location farmed by Alex Murphy in Hamilton County; and two locations farmed by Shenandoah Dairy in Suwannee County. Before corn harvest, cover crops will be planted using Miller High Boy to demonstrate early planting and establishment of cover crops on standing corn to investigate nutrient uptake and impacts on nitrate leaching.

Controlled Release Fertilizer for Watermelons and Corn (10 farms), 2023

Controlled release fertilizer demonstrations were established on 5 watermelons farms and 3 corn farms in Suwannee Valley on a total of 325 acres. This is a multi-county project under the leadership of Bob Hochmuth (watermelons) and me (corn).

Heat Treated Chicken Litter (Everlizer) for Corn (2 fields), 2023

Everlizer chicken litter is a heat treated OMRI certified chicken litter which has gained interest among corn growers in Suwannee Valley, FL. Demonstration trials were set up on two pivots farmed by Brooks Garland (Lee Peanut Farms) in Madison County. One 135-acre pivots will be split to compare corn production with and without Everlizer product and one 20-acre pivot will be split to compare Everlizer with controlled release fertilizer.

On-farm corn nitrogen rate trials (2 farms), 2023

On-farm demonstration trials were established as a parallel study on three grower locations to compare rates selected from Dr. Lakesh Sharma's small plot corn N rate trial conducted at NFREC-SV. One location in Dixie County (Ganus 1 field, farmed by Trey Sanchez, Sanchez Farms) will have a pivot split into 2 rates of 280 and 350 lbs N/acre. Second location in Madison County (Behind Doug's, farmed by Brooks Garland, Lee Peanut Farms) has a pivot split into 4 rates of 140, 210, 280, and 350 lbs N/acre.

Sustainable Suwannee Pilot Project-Dairy Farm Assessment (16 farms), 2022-2023

On-farm assessment of dairy farms in 6 counties (Levy, Gilchrist, Madison, Suwannee, Lafayette, and Jefferson) to improve the overall efficiency of these farms. Farm assessments were used to enhance manure and lagoon management of these dairies to improve on-farm feed production and lower their environmental footprint of nitrates in FL ecosystem. The farm assessment will lead to need-based special developmental projects for selected farms. The farms include Southern Cross Dairy, Alliance Dairies, UF Dairy Unit, Udder Delight Farm, Jeffco Dairy, Tevye Dairy, Lyle Stanley Trace Farm, White Oak Dairy, Shenandoah Dairy, Lois Lake Land and Dairy Farm, North Florida Holsteins Farm, Full Circle Dairy, Lois Lake Land & Dairy, K&H Dairy Farm, and Milkaway Dairy Farm.

4Rs Project in Suwannee, Lafayette, and Gilchrist Counties (5 farms), 2022

On-farm demonstration trials were established on five farms in three counties to compare liquid nitrogen applied as a side dress using Miller High Boy with a common practice of fertigating through the central pivot system. Demonstration sites were established at two locations farmed by Donell Gwinn in Suwannee County (Morrison and Gwinn-Morrison farms); two locations farmed by Sidney Koon in Lafayette County (Koon 1 and Driver's field); and one location farmed by B.J. Wilkerson in Gilchrist (Wilkerson half pivot). After corn harvest, cover crop will be planted to demonstrate beneficial impacts of cover crops during fall.

Corn Nitrogen Rate Trials in Dixie, Suwannee, and Madison Counties (3 farms), 2022

On-farm demonstration trials were established as a parallel study on three grower locations to compare rates selected from Dr. Lakesh Sharma's small plot corn N rate trial conducted at NFREC-SV. At two locations one each in Dixie County (Ganus 2 field, farmed by Trey Sanchez, Sanchez Farms) and Suwannee County (Williams field, farmed by Donell Gwinn, Gwinn Brothers Farms), a pivot is split into two to apply a total of 280 and 350 lbs N/acre. The third on-farm location is in Madison County (Dusty Miller, farmed by Brooks Garland, Lee Peanut Farms) where a pivot is split into 4 rates of 140, 210, 280, and 350 lbs N/acre.

Nitrogen Calibration Strip Trials in Jackson and Jefferson Counties (4 farms), 2021

On-farm demonstration / research trials were established on four farms in two counties to test zone-based nitrogen management using nitrogen calibration strip (NCS) in cotton. The NCS were established on two locations farmed by Brooks Garland in Jackson County (Hatcher West and Grieble farms); one location farmed by Arnie Forrester in Jackson County (Bull Frog farm); and one location farmed by Ernest Fulford in Jefferson County (Alford's Place farm). Two field days related to the use of Veris MSP3 for field mapping and establishing NCS were organized in Jackson and Jefferson Counties.

Corn Nitrogen Rate Comparison Demonstration in Jackson County (2 farms), 2021

On-farm demonstration trials were established on two locations farmed by Craig Bishop in Jackson County to compare UF/IFAS recommended nitrogen rate and grower applied N rate. Both farms (Hatcher North and Powell South) were mapped in two zones based on soil electrical conductivity (EC). Each zone received two N rates through the center pivot to compare impacts of N rates on corn yield under different soil EC values.

Nutrient Fate in Two Cropping Systems in Jackson County (2 farms), 2018-2020

On-farm demonstration / research trial was established in Jackson County in 2018 on two farms (Snow hill farms) farmed by Larry Ford, Ford Farms. A 120-acre farm was converted to a sod-based rotation with bahiagrass-bahiagrass-peanut-cotton rotation. An adjacent 55-acre farm represented the conventional rotation of peanut-cotton-cotton-peanut. Both fields were mapped into soil EC-based zones. Drain gauge lysimeters were installed in each zone in both farms to study the impacts of introduction of bahiagrass into row crop rotation on fate of nitrate, ammonium, and total nitrogen in soil profile and its impact on soil water quality in Jackson Blue Springs Basin.

Nitrogen Calibration Strip Trials in Jackson County (1 farm), 2018-2020

Nitrogen calibration strip (NCS) was developed as an on-farm tool to assist cotton growers with in-season N recommendation at a farm (Sod-based Rotation Farm-Beef Unit) managed by Larry Ford, Ford Farms. Site-specific N recommendation was developed by mapping this demonstration farm into soil EC-based zones and establishing NCS in each zone for in-season N recommendation.

EXTENSION AND OUTREACH MEETINGS/ TRAININGS ORGANIZED**Madison County Soil and Water Conservation District Field Tour, Lee, FL, May 17, 2023**

Organized a farm visit to host Madison County Soil and Water Conservation District to on-farm trials comparing heat-treated manure, Everlizer, and no-Everlizer fertilizer and controlled release nitrogen fertilizer at Lee Peanut Farms, Lee, FL.

Agricultural Commissioner on-farm trial visit, Madison and Hamilton County, May 2, 2023

Organized a one-day field tour to showcase nutrient management research being conducted in Madison and Hamilton counties. On-farm trials focused on controlled release fertilizer trial in Madison County and use of High Boy for nitrogen banding in corn at Hamilton County field trial.

Field visit on controlled release fertilizer demonstration Trial, Lee FL, April 18, 2023

Organized a meeting with Harrell's Research Director, Tom Reed, and NFREC-SV row crop RSA, Dr. Shivendra Kumar, and Brooks Garland, Lee peanuts to scout controlled-release fertilizer trial at Lee peanuts in Madison County.

In-Service Training: Ag. Water Mgmt. for Row and Specialty Crops, April 27-28, 2023

Organized an in-service training at NFREC-SV for multi-state county extension faculty. The purpose of this IST is an advanced level training on crop need based irrigation for row crops, soil-water relations, use of soil moisture probes, variable rate irrigation, flow-volume calculations for establishing drip irrigation systems, and automated drip irrigation systems. This IST will consist of classroom lectures, field demonstrations, and Certified Crop Adviser CEUs will be awarded.

Florida Department of Agriculture and Consumer Services, NFREC-SV, Live Oak, FL, Mar. 10, 2023

Organized a field visit at NFREC-SV for the Directors, Assistant Directors, Project Managers from two divisions-the Office of Ag. Water Policy and the Division of Agricultural Environmental Services to showcase the progress on sod-based rotation and other nutrient management projects funded by these two divisions.

Two Workshops on Using FieldScout CM 1000 meter, NFREC-SV, Jan. 24 and Mar. 9, 2023

Organized a workshop for extension county faculty to provide training on using and calibrating Field Scout CM 1000 NDVI meters. County agents from Alachua, Columbia, Lafayette, Hamilton, Suwannee, Madison, Gilchrist, and Levy Counties participated in this workshop. During the season, NDVI data will be correlated with in-season leaf tissue nitrogen content. The goal is to replace frequent tissue sampling/analysis (for making in-season nitrogen split application decisions) with on-the-spot NDVI readings.

Corn Advisory Committee Meeting, NFREC-SV, Jan. 23, 2023

Organized a corn advisory committee meeting to discuss the results from corn nitrogen rate studies conducted in 2022. The corn rate studies were conducted as small plot research trials at two sites at NFREC-SV and as on-farm trials at two farms mimicking the same rates as small plot trials. The advisory committee, consisting of growers, crop consultants, IFAS research and extension faculty has been vital in guiding the nutrient rate trials.

Suwannee River Water Management District Meeting, NFREC-SV, Oct. 25, 2022

Organized a meeting for Suwannee River Management District at NFREC-SV. Meeting was followed by a trolley tour to showcase ongoing nutrient management projects. Tour focused on peanut trials, sod-based rotation, and the upcoming addition of BMPs to this 16-year study.

Carinata Update and Informational Session, NFREC-SV, Oct. 11, 2022

Co-organized an informational session on *Brassica Carinata* with Columbia County extension faculty Jay Capasso and industrial partners-6 Gen Ag. Services and Nuseed Carinata. UF-IFAS faculty and specialists provided research updates and Nuseed provided updates on contract details to potential growers.

National Peanut Day Harvest Tour, Florida Peanut Federation, NFREC-SV, Sep. 13, 2022

Assisted Kelly Aue and Bob Hochmuth in organizing and hosting local and state leaders along with stakeholders at North Florida Research and Education Center-Suwannee Valley for peanut harvest tour. Arranged a trolley tour for attendees to showcase different peanut projects underway at NFREC-SV. Assisted in preparing a peanut research document emphasizing the role of our center and stakeholder engagement in spearheading peanut research in the Suwannee Valley. [Peanut Research Document Link](#)

Peanut Field Day, NFREC-SV, Live Oak, Aug. 23, 2022

Co-organized annual peanut field day with Gilchrist County extension agent Dr. Tyler Pittman. Trolley tour was arranged for field trials related to peanut variety development (Dr. Barry Tillman), controlled-release potassium and chelated iron nutrient management trials (Dr. Sudeep Sidhu), peanut disease trials (Dr. Ian Small, Dr. Nicholas Dufault, and Keith Wynn), and peanut nematode control trials (Dr. Zane Grabau). Core pesticide CEU training was conducted by Jay Capasso (Columbia County extension agent) and Amanda Phillips (Suwannee County extension agent). Certified Crop Advisor CEUs were also awarded. [Eventbrite Link](#)

Corn Advisory Committee Field Day, NFREC-SV, Live Oak, FL, July 15, 2022

Organized a field day with members of corn advisory committee to visit the small plot corn nitrogen rate research trials established at two sites at NFREC-SV. The corn advisory committee consists of corn growers, crop consultants, Suwannee River Partnership, extension agents, BMP educators, and UF-IFAS faculty. The purpose of the visit was to discuss the progress of the rate trial with the advisory committee and to showcase the nitrogen response in corn at different N rates.

Corn Field Day, NFREC-SV, Live Oak, FL, July 7, 2022

Co-organized annual corn field day with Gilchrist County extension agent Dr. Tyler Pittman. Various corn nutrient management studies were demonstrated such as corn N rate trial (Drs. Lakesh Sharma and Sudeep Sidhu), corn nitrogen calibration strip trial (Drs. Ted Stansly, Eeusha Nafi, and Sudeep Sidhu), FL Stakeholder Engagement Program (Dr. Vivek Sharma), corn variety trial (Joel Love), and corn population trial (Kieth Wynn and Emily Beach). There were dinner time talks by Dr. Kevin Athearn on corn market update and cost share update by Suwannee River Water Management District. We had updates on corn diseases (Kevin Korus) and stink bug population (Alicia Haltbritter). [Eventbrite Link](#)

Department of Soil, Water, and Ecosystem Sciences Student Tour, NFREC-SV, Live Oak, FL, June 16, 2022

Organized a trolley tour at NFREC-SV for students of Department of Soil, Water, and Ecosystem Sciences as part of their visit to the three campuses of North Florida Research and Education Center under the leadership of Dr. Cheryl Mackowiak. The tour was organized to showcase ongoing nutrient management related projects. The students learned about the use of drain gauge lysimeters in investigating fate of nutrients below root zone.

Florida Department of Agriculture and Consumer Services, NFREC-SV, Live Oak, FL, May 25, 2022

Organized a field visit for the laboratory staff from Division of Agricultural Environmental Services that is actively involved in analysis of environmental samples from the long-term rotational study at NFREC-SV. The laboratory staff was provided on-field demonstration of different cropping systems under the sod-based rotational study. The discussions pertained to the advantages of resilient cropping systems on soils and root properties and their impact on water and nutrient uptake. The use of drain gauge lysimeters to study fate of nutrients and the procedures followed for leachate sample collection were showcased.

In-Service Training: Ag. Water Mgmt. for Row and Specialty Crops, April 20-21, 2022

I collaborated with Robert Hochmuth (regional specialized agent- vegetables) to organize an in-service training at NFREC-SV for multi-state county extension faculty. The purpose of this IST was an advanced level training on soil-water relations, use of soil moisture probes, variable rate irrigation, crop need based irrigation for row crops, flow-volume calculations for establishing drip irrigation systems, and automated drip irrigation systems. This IST consisted of classroom lectures and field demonstrations and a total of 6.5 Certified Crop Adviser CEUs were awarded. [Eventbrite Link](#)

Grower Testimonials-Integrated Crop-Livestock Cropping Systems, Fall 2020-Fall 2021

I collaborated with Ethan Carter (extension faculty, Jackson County) and Joel Love (Education and Training Specialist-BMPs, NFREC-SV) to conduct a series of interviews with progressive

growers from Jackson, Calhoun, Jefferson, Suwanee Counties that have perennial grasses, cover crops, and cattle grazing components in their cropping systems. I assist in video recording, editing, and hosting videos under “[grower testimonials](#)” playlist in my [YouTube Channel](#).

Precision Ag for Nutrient Management Field Day, Monticello, FL, June 22, 2021

Organized a nutrient management field day with Jefferson County extension faculty (Danielle Sprague) to educate the stakeholders on the latest research and equipment being utilized by faculty at North Florida Research and Education Center. Demonstrated the use of Veris MSP3, a GPS-enabled tractor mounted equipment to capture field variability based on soil properties. Demonstrated nitrogen calibration strip as an on-farm tool for making in-season nitrogen recommendations for cotton. Discussed the use of aerial vehicles in precision ag and the current obstacles that hinder their widespread use in agricultural operations. Provided a training session on pesticide formulations, proper tank mixtures, and safe use along with 1 CEU.

Precision Ag for Nutrient Management Field Day, Jackson County, FL, June 16, 2021

Organized a field day with the help of Jackson County extension faculty (Ethan Carter) to showcase the latest precision ag research being conducted at University of Florida, North Florida Research and Education Center. The event consisted of educating stakeholders of the importance of field variability and use of Veris MSP3, a GPS-enabled tractor mounted equipment, to develop field maps based on soil electrical conductivity, organic matter, and soil pH. The stakeholders were educated on nitrogen need in cotton and the use of nitrogen calibration strips as an on-farm tool for in-season nitrogen management on cotton. The stakeholders were educated on the latest ins and outs of using unmanned aerial vehicles and the current obstacles needed to be overcome. Training on pesticide formulations, proper tank mixtures, and use was provided along with 1 CEU.

Virtual Field Day, University of Florida, Quincy, FL, Dec. 2020

Organized a virtual field day to emphasize impacts of sod-based cropping systems, cover crops, and cattle grazing on row crop lands. The virtual event consisted of videos from researchers regarding these impacts from agronomy, entomology, crop physiology, and soil health perspective. Assisted in video recording, editing, and voice overlays for the final product. I have created a [YouTube channel](#) where videos are hosted under different [playlists](#).

Northwest Florida Water Management District, NFREC-Quincy, Quincy, FL, Mar. 2019

Organized a meeting of UF faculty and stakeholders from Northwest Florida Water Management District to provide an update on the current research projects and future opportunities in ‘sod-based rotation (SBR) system’. Worked in close liaison with faculty members and stakeholders to finalize the location and meeting agenda. Worked on time allocation for presentations and field visit. Organized lunch for the attendees.

CONNECTING STAKEHOLDERS WITH STATE SPECIALISTS

Juan Guarderas, Sundance Farm, Suwannee County, FL, Mar. 7, 2023

I visited Sundance farm in Suwannee County to discuss pasture production system on 80 acres. Bahiagrass, bermudagrass, and annual grasses are part of the hay production for cattle and horses. We discussed the possibilities of alternate production systems to improve the profitability of his farm and also include other hay crops such as perennial peanuts. I connected Juan with Drs. Kevin Athearn, Cheryl Mackowiak, and Jose Debeux to assist with his transition and improve his profitability.

USDA-NRCS Conservation Innovation Grants, Sep. 12, 2022

Enrolled four corn producers from FL panhandle for CIG project titled “Advancing precision variable rate irrigation technology to optimize crop water productivity and environmental sustainability” led by Dr. Vivek Sharma, Department of Agricultural and Biological Engineering, UF. Four participating growers are Donell Gwinn (Gwinn Brothers Farm, Suwannee County), Cliff Townsend (Townsend Brothers Farm, Suwannee County), Mike Adams (Hamilton County), and Jarrod Harris (Madison County).

Logan Petry, Grimmway Farms, Madison County, FL, with Dr. Sunny Liao, Sep. 9, 2022

Logan Petry contacted Bob Hochmuth and I over a phone call to investigate long-term impacts of an organic fertilizer amendment on soil ecology for which a petition was submitted to National Organic Standards Board (NOSB) to prohibit its use. We connected her with Dr. Hui-Ling (Sunny) Liao, a microbial ecologist at North Florida Research and Education Center-Quincy to initiate the conversations of a potential new trial.

Dr. Sandra Guzman with Riley Putnal, Putnal Farms, Suwannee County, FL, Sep. 8, 2022

Dr. Sandra Guzman, an irrigation specialist at Indian River Research and Education Center discussed the opportunity for a potential collaboration with a sweet corn grower to be able to investigate the water use and irrigation management using capacitance-based soil moisture probes. Bob Hochmuth and I helped connect her with Mr. Riley Putnal, Putnal farms who agreed to be a collaborator in this project and work with Dr. Guzman in sharing the soil moisture probe data with her team.

USDA- Southern Sustainable Agriculture Research and Education Grant, May 25, 2022

Recruited three potential collaborators for Southern SARE grant titled “Novel remote sensing-based water and nutrient management models for sustainable agriculture” led by Dr. Ebrahim Babaeian, Department of Soil, water, and Ecosystem Sciences, UF. Three collaborators were Brooks Garland (Lee Peanut Farm, Madison County), Cliff Townsend (Townsend Brothers Farm, Suwannee County), and Craig Bishop (Bishop Farms, Jackson County).

EXTENSION AND OUTREACH ACTIVITIES**Grower Outreach-Tzvi Greg Halikman, Tevey Farms, Live Oak, FL, Oct. 4, 2022**

Visited Tevey dairy farm in Suwannee County to help Tzvi with his manure management. He was suggested to spread bio-solids on his farmland as often as possible as it will improve soil organic matter and will be beneficial for his farm land in the long run.

Peanut Field Day, NFREC-SV, August 22, 2023

Hosted a trolley tour to discuss two replicated small plot field trials: 1) impact of controlled-release potassium on availability of potassium in soil and peanut tissue throughout the season and 2) testing efficacy of chelated iron application methods on iron availability in peanuts.

“Reverse Field Day”- In-Person Interaction of Specialists with Growers, Hamilton County, Aug. 4, 2023

Visited three peanut growers and peanut buying point in Hamilton County with other state specialists to interact with growers on one-on-one basis to better understand their issues and provide immediate or long-term solutions. This meet was organized by Dr. Shivendra Kumar, RSA-Row Crops and Keith Wynn, Hamilton County extension faculty.

“Reverse Field Day”- In-Person Interaction of Specialists with Growers, Levy County, Aug. 2, 2023

Visited four peanut growers in Levy County with other state specialists to interact with growers on one-on-one basis to better understand their issues and provide immediate or long-term solutions. This meet was organized by Dr. Shivendra Kumar, RSA-Row Crops and Mark Warren, Levy County extension faculty.

Nutrien Field Visit, White Springs, FL, July 24, 2023

Visited and discussed land reclamation projects with nutrien team and a local grower. The discussion revolved around helping a local grower with decision making on the crops to grow on the land that needs to be reclaimed.

Corn Field Day, NFREC-SV, July 18, 2023

Discussed the importance of irrigation management and use of soil moisture probes for efficient management of water and nutrients for corn production.

Florida Youth Institute Farm Tour, NFREC-SV, Live Oak, FL, July 12 and 19, 2023

Hosted a group of potential undergraduate students to showcase research efforts and trials being conducted at NFREC-SV to educate them about different disciplines within agriculture. Students were made aware of nitrate leaching issues in north FL, different cropping systems, advanced fertilizers, and latest technologies to improve water and nutrient use efficiencies.

IoT4Ag Annual Meeting Farm Tour, NFREC-SV, Live Oak, FL, May 16, 2023

Hosted multi-university engineering faculty, part of the IoT4Ag project, for a farm tour to showcase the latest technologies that are implemented as part of the BMP efforts for agricultural operations at NFREC-SV.

The Toro Company Meeting, Monticello, FL, April 6, 2023.

Installed soil moisture probes and Transpira moisture sensors (Toro) on citrus trees at Florida Georgia Citrus farm in Monticello, FL. This is a unique project to compare data from soil moisture probes and transpire sensor (sap temperature difference-based) for irrigation scheduling.

Florida Stakeholder Engagement Program (STEP) In-Service Training, NFREC-Quincy, Quincy, FL, Mar. 2, 2023

Presented on the title “Corn fertilizer management: Corn rate study” to educate county agents on nitrogen management in corn and provide an update on the corn nitrogen rate trials at NFREC-SV and on-farm corn rate trials.

Cotton Advisory Committee Field Day, NFREC-Marianna, Marianna, FL, Feb. 22, 2022

Facilitated discussions on the results of the first year’s nitrogen rate trial at NFREC-Marianna and protocols for the second year’s study. Recruited Mr. Craig Bishop and Mr. Jeff Pitman to replicate nitrogen rates under their pivots to mimic the rates from small plot research. This will assist in collecting data from actual farms to compare results with small plot research plots.

Fulford Family Farms, Monticello, FL, February 16, 2023

Facilitated a meeting between Ernest Fulford, Clay Fulford and Dr. David Wright’s team to select on-farm demonstration site for nitrogen calibration strip (NCS) trial. Two fields were selected to test NCS on non-irrigated cotton.

Florida Cattlemen Association Meeting, NFREC-SV, Live Oak, February 11, 2023

Discussed the importance of pasture and cattle grazing on row crop land. Presented on the title “Resilient cropping systems: pathway for sustainable future”.

Peanut: In-Service Training, Jackson County Extension Office, Marianna, January 31, 2023

Provided an update on two studies “Controlled release potassium on peanuts” and “Chelated iron applications on peanuts” to enhance stakeholder knowledge on the latest peanut trials.

Hamilton County Corn Meeting, Jasper, FL, January 26, 2023

Provided an update on the 4Rs project in 2023. Two on-farm demonstration sites with growers Alex Murphy and Mike Adams where integration of several precision ag techniques will be implemented to demonstrate enhancement of nitrogen use efficiency.

Row Crop Agronomy In-Service Training, NFREC-Quincy, Quincy, FL, Jan. 18, 2023

Presented on the title “An update and vision for 4Rs project” to educate county agents on the development and progress of 4Rs project which pertains to using Miller High Boy to side dress nitrogen at the front end of corn production and planting cover crops at the back end for optimum nitrogen use and uptake.

Soil Health Field Day, NFREC-SV, Live Oak, Jan. 11, 2023

Demonstrated sod-based rotation project and cattle grazing on this demonstration farm on bahiagrass during summer and winter grazing on cover crops. Winter grazing is an intermediate step that a row crop grower can incorporate into his crop rotations to observe beneficial impacts of cattle grazing if introduction of bahiagrass pasture is not feasible. Also discussed infrastructure needs such as water troughs, fencing, and cost share options to assist integrated crop-livestock cropping systems.

Streaming Science Project, NFREC-SV, Live Oak, FL, Nov. 3, 2022

Participated in the “Streaming Science Project” organized by Dr. Jamie Loizzo and her graduate students in the Department of Agricultural Education and Communication, UF. As part of this project, we conducted virtual field tours for middle and high school students on topics related to precision ag, cropping systems, and use of soil moisture probes to improve soil health and water quality. We developed a video session [“From the Ground Up: Electronic Field Trip”](#) which was also live streamed to the school kids from across the state.

Suwanee River Partnership Steering Committee Meeting, NFREC-SV, Live Oak, Oct. 4, 2022

Provided an update on the 4Rs project focusing on the use of Miller High Boy to demonstrate liquid N banding in corn crop and its use in planting cover crop after corn. Shared my vision for the future of nutrient management to improve quality of FL ground water comparing banding approach versus a narrow row (optimized plant spacing) corn production system to overcome barriers associated with use of specialized equipment such as a High Boy.

Grower Outreach-Brooks Garland, Lee Peanut Farms, Lee, FL, Sep. 9, 2022

Brooks Garland needed advice on the use of capacitance-based soil moisture probes on his farm in relation to pod-rot and other microbial diseases. We talked over the phone about the need to set field capacity and other stress parameters for his soil moisture probes for each field instead of relying on the parameters provided by dealerships. I helped him to adjust these parameters and assist him in comprehending the moisture probe data.

Outreach to USDA Farm Service Agency-Suwannee, Hamilton, and Lafayette Counties Sep. 8, 2022

Kathryn Driver, County Executive Director-USDA Farm Service Agency for Suwannee, Hamilton, and Lafayette Counties was introduced to me via email by Keith Wynn, Hamilton County Agricultural Extension Agent to assist her with irrigation requirements for cover crops and row crops. I provided her the necessary information and shared with her two UF-IFAS EDIS documents for her perusal.

Suwannee River Water Mgmt. District-Field Visit, NFREC-SV, Live Oak, Aug. 18, 2022

Provided a farm tour to a team from Suwannee River Water Management District led by Katelyn Potter, Director-Division of Outreach and Operations. Discussed the sod-based rotation study and impacts that introduction of bahiagrass and cattle grazing have on ground water quality and nutrient cycling. Demonstrated the setup and use of drain gauge lysimeters to monitor water quality from the rotational project. Demonstrated the use of Miller High Boy in banding liquid N in corn and its potential use in seeding cover crop before corn harvest and the impact of early cover cropping on nitrogen leaching.

Cotton Advisory Committee Field Day, NFREC-Marianna, Marianna, FL, Aug. 9, 2022

Facilitated discussions on the progress of the first year's nitrogen rate trial at NFREC-Marianna. Recruited Mr. Larry Ford to provide a quarter of a pivot to conduct 2023 rate trials at his farm to represent the sandy soils of FL panhandle.

Junior Naturalist Camp-Suwannee County 4-Hers Visit, NFREC-SV, Live Oak, June 29, 2022

Organized the visit of young campers from Suwannee County with 4-H agent Katie Jones. The young campers were introduced to general plant nutrition with nitrogen being the most important "plant food" which is absorbed by different plant species in different forms. The campers were also introduced to various techniques used to track the nitrogen movement within soil profile particularly drain gauge lysimeters and use of vacuum pumps to drain out leachate samples. The campers were made aware of the use of laboratory equipment in analyzing leachate samples for quantifying various nutrients.

Florida Department of Environmental Protection Secretary Visit, NFREC-SV, Live Oak, June 17, 2022

Hosted Florida DEP Secretary Shawn Hamilton along with Suwannee River Water Management District Executive Director Hugh Thomas to a tour of all the nutrient management projects underway at NFREC-SV. The highlights of the tour were corn N rate trials, Florida STEP program, 4Rs project for banding N in corn using Miller High Boy, sod-based rotation study, and nitrogen calibration study. The two-hour tour of the facilities led to productive discussions on the future pathways for nutrient management and water quality related projects in the state of Florida.

Grower Outreach-Stuart Adams, DSA Acres LLC, Jennings, Hamilton County, June 17, 2022

Stuart Adams, a citrus grower in Hamilton County placed a call to discuss the use of soil moisture probes for his citrus grove. He needed information on cost-share programs, vendors, price point, and subscription packages for the use of capacitance-based soil moisture probes. He was provided necessary information along with contact information of suppliers of different products in Suwannee Valley, FL.

NRCS-Area 2 meeting and Farm Tour, NFREC-SV, Live Oak, June 10, 2022

Organized a trolley tour for the NRCS-Area 2 members to showcase several projects and crop variety trials underway at NFREC-SV. Demonstrated the use “Miller High Boy” for banding nitrogen fertilizer in corn as one of the BMPs. Discussed the technology behind the capacitance-based soil moisture probes and its growing adoptability with specialty and row crop growers in Suwannee Valley, FL.

NFREC-SV Advisory Committee Meeting, NFREC-SV, Live Oak, FL, June 9, 2022

Presented on the current projects related to resilient cropping systems, nutrient management, advanced fertilizer technologies, improved irrigation strategies to the advisory committee. Shared my future vision of extension center’s role on advancement of research needed to support agriculture in the region for coming years. Discussed and asked for committee’s input to assist in prioritizing needs for the NFREC-SV campus such as office space for growing farm crew, space for parking new equipment, student break area, and a proper parking lot for visitors.

Suwannee River Partnership Field Visit, Brookins Farm, Chiefland, FL, June 3, 2022

Demonstrated use of capacitance-based soil moisture probes in watermelons to regulatory agencies and environmental groups. Discussed advantages of soil moisture probes and the principle behind this technology. Educated growers on understanding of graphical interface of these moisture probes. Demonstrated use of these probes for tracking nutrient movement down the soil profile to assist growers develop fertilizer applications through drip irrigation system.

Florida Department of Environmental Protection Deputy Secretary Visit, NFREC-SV, Live Oak, May 20, 2022

Hosted Florida DEP Deputy Secretary (ecosystem restoration) Adam Blalock along with UF/IFAS Government Affairs team to a trolley tour of all the nutrient management projects underway at NFREC-SV. The highlights of the tour were 4Rs project for banding N in corn using Miller High Boy, sod-based rotation study, corn N rate trials, Florida STEP program, nitrogen x irrigation trial in potatoes, and controlled release N fertilizer in snap beans. The four-hour tour of the facilities led to productive discussions on the future pathways for nutrient management and water quality related projects in the state of Florida.

Community Day at The Farm, NFREC-SV, Live Oak, FL, May 7, 2022

Hosted local community to visit and learn about various research and educational activities at NFREC-SV. I arranged trolley tours for general public to demonstrate research projects such as tomato breeding program, corn nutrient management, Florida STEP program, potato nitrogen and irrigation trials, soil moisture probes, variable rate irrigation systems, malting barley variety testing, watermelon research, snap bean controlled release fertilizer study, and sod-based rotation study. Tours to greenhouse, orchard, and hydroponic vegetable systems were also provided by NFREC faculty. Various equipment used in precision nutrient management research such a GPS-guided tractors and Miller “High Boy” were also on display for the visitors.

Suwannee CARES 21st Annual Celebration, NFREC-SV, Live Oak, FL, May 5, 2022

Participated in a trolley tour with Florida State legislatures and regulatory officials to discuss various nutrient management research projects being conducted on crops such as corn, potato, watermelons, snap beans, and carrots. Assisted in hosting growers from 16 counties in Suwannee River Basin and recognizing growers with outstanding environmental stewardship.

Cover Crop Field Day, Terrell County, Dawson, GA, May 4, 2022

The University of Georgia extension agents attended an irrigation IST that I organized on April 20th and 21st, 2022 and were impressed by the “blue dye” demonstration under drip and overhead irrigation to understand water movement in soil profile. This led them to invite me to demonstrate water infiltration and percolation in soil profile under cover crops using a “blue dye”.

On-farm Trouble Shooting-Donald Graham, High Springs, FL, May 3, 2022

I was contacted by Jay Capasso, row crop agent for Columbia County to assist Mr. Graham in understanding soil moisture probe data. During this meet, I successfully trained him in managing drip irrigation on watermelons and succeeded in making him reduce his drip irrigation cycle from 1 hour 45 minutes to 40 minutes per zone per irrigation/fertigation event.

Florida Certified Crop Adviser Educational Program, UF/IFAS, 2022

Participated in UF/IFAS sponsored Continuing Education Units (CEUs) educational training sessions, a 10-hour event, twice a year. I presented on “Nitrogen Calibration Strip as an on-farm tool for in-season nitrogen recommendation in cotton and corn”, a one hour talk for 1 CEU.

UF/IFAS Administrative Staff-Farm Tour, NFREC-SV, Live Oak, FL, April 18, 2022

Participated in field demonstration of rotational study site at NFREC-SV. Demonstrated different cropping systems and their impact on ground water quality utilizing drain gauge lysimeters.

International Student Tour of NFREC with Dr. Wysocki, NFREC-SV, Live Oak, April 1, 2022

Participated in a trolley tour with international students and discussed different cropping systems under sod-based rotation demonstration site at NFREC-SV. Demonstrated use of drain gauge lysimeters for collecting leachate samples to analyze nutrient concentration and load in ground water in crops grown under different cropping systems.

Retired Extension Agents Meeting-Farm Tour, NFREC-SV, Live Oak, FL, March 28, 2022

Demonstrated sod-based rotation study and its impact on overall water quality. Demonstrated the use of drain gauge lysimeters in accessing nutrient load in ground water in different cropping systems.

On-farm Trouble Shooting-Doyle and Karl Williams Farms, Alachua, FL, March 23, 2022

I was contacted by Tatiana Sanchez (Alachua County agent) to help these growers with low pressure on their drip irrigation system at certain high spots in their watermelon field. The elevation difference was about 20 feet in the field. Bob Hochmuth, Tatiana Sanchez, and I visited on-site to observe the situation. After inspecting field slope, main line from water pump, and floor plan of lay-flat, I made my suggestions to cut the elevated zones into lower acreage blocks to solve their irrigation issue. I received a confirmation of success from Tatiana Sanchez a couple of days later.

Grower Outreach-Connie Maxwell, Dragonfly Trace Farm, Alachua, FL, March 23, 2022

I was contacted by Jay Capasso (Alachua County agent) to help Connie Maxwell with her soil moisture probe data. We met at my office, and I went over several scenarios of high to low rainfall and irrigation events. I educated her on interpretation of data and graphs and in terms of moisture content at several depths. I also trained her on interpreting salinity data in terms of nutrient movement down the soil profile and how she could utilize salinity data to make informed fertigation decisions. She was satisfied after our one-hour meeting.

Grower Outreach-Brooks Garland, Lee Peanut Farms, Lee, FL, March 22, 2022

I met with Brooks Garland with Dr. David Wright and Joel Love to help him develop his nutrient management protocol for cotton production. Brooks will venture into growing 1600 acres of cotton this year in Madison County. We discussed about timings for his split applications of in-season nitrogen (three splits from squaring stage to mid bloom). This recommendation was provided by me and supported by Dr. Wright based on the sandy soil texture on his farm.

Follow the Water Group-Field Visit, NFREC-SV, Live Oak, FL, March 16, 2022

Toured a demonstration site showcasing potential cropping systems in Suwannee Valley, FL. Demonstrated the use of drain gauge lysimeter for capturing nitrate movement in conventional and sod-based rotations. The conventional rotations include corn-peanut and peanut-corn-carrot whereas sod-based rotation includes bahia-bahia-peanut-corn and bahia-bahia-peanut-corn-carrot.

Cotton Advisory Committee, NFREC-Marianna, Marianna, FL, March 7, 2022

Assisted in developing cotton nitrogen rate trial protocols for year 2022. Two sites for the rate trials were selected by the committee: a non-irrigated site at West Florida REC and an irrigated site at NFREC-Marianna. The in-season nitrogen application splits, nitrogen rates, cotton variety, and growth regulator applications were agreed upon during this meeting.

Corn Advisory Committee, NFREC-SV, Live Oak, FL, March 2, 2022

Facilitated our discussion on finalizing protocols for corn nitrogen rate trial study for the year 2022. On suggestions from the committee members, I accepted the responsibility of establishing three on-farm rate trials mimicking rates from small plot research trials. The corn advisory committee consists of growers, crop consultants, UF-IFAS research and extension faculty. Dr. Tom Obreza was invited to address queries regarding PNOC procedures to update nutrient rates for different crops.

Floridan Aquifer Collaborative Engagement for Sustainability (FACETS)-Field Visit, NFREC-SV, Live Oak, FL, February 4, 2022

Demonstrated different cropping systems to modeling group from the FACETS team to help them develop models to study nutrient losses from different systems. This team was introduced to summer grazing on bahiagrass pasture and winter grazing on winter cover crops. The FACETS team also visited Starling Farms to observe both winter and summer grazing systems.

Agricultural Row Crops In-Service Training, NFREC-Quincy, Quincy, FL, January 19, 2022

Presented on the title “Nitrogen calibration strip: An on-farm tool for site-specific in-season nitrogen application decisions in cotton” to educate county agents on the development and progress of nitrogen calibration strips in cotton.

NFREC-Quincy 100th Anniversary Field Tour, Quincy, FL, October 1, 2021

Demonstrated beneficial impacts of sod-based rotation system consisting of a 4-year rotation bahiagrass-bahiagrass-peanut-cotton when compared with a conventional crop rotation system comprising of cotton-cotton-peanut on soil health and plant roots of the summer crops.

Florida Department of Agriculture and Consumer Services-Field Visit, Malone, FL, 2019

Demonstrated progress and issues related to on-farm installation of drain gauges for capturing nitrate movement in conventional and sod-based rotation cropping systems. Demonstrated on farm trials of nitrogen calibration strip as an on-farm tool for in-season nitrogen recommendation.

Peanut Diseases and Pests Tri-State Tour, NFREC-Quincy, Quincy, FL, 2018

Demonstrated field research plots equipped with soil moisture probes at sod-based rotation (SBR) site in Quincy, FL. Discussed the use of soil moisture probes in understanding crop water consumption at various depths for conventional crop rotations as compared to SBR summer crops. Discussed the role of moisture probes in helping develop irrigation strategies to optimize water use and improve water quality in summer crops. Interacted with industry representatives, extension agents, and growers on a one-on-one basis. Discussed the impacts of sod-based rotation on suppression of pests and diseases on summer crops-peanut and cotton.

National Fish and Wildlife Foundation-Field Visit, NFREC-Marianna, Marianna, FL, 2018

Field tour of sod-based rotation (SBR) demonstration research site on a farmer's field (160 acre) in Marianna, FL. Demonstrated use of cattle grazing on SBR in terms of management and equipment need. Prepared handouts for the visitors to discuss the beneficial impacts of SBR on soil properties, crop root characteristics, and water and nutrient cycling.

Turfgrass Field Day, The University of Georgia, Griffin, GA, 2010-2014

Prepared research bulletins for the UGA turfgrass field day guide. Demonstrated field research plots of laccase dethatching experiments on creeping bentgrass, bermudagrass, and zoysiagrass. Discussed use of laccase enzyme as a new technique to facilitate biodethatching with golf course superintendents and local commodity groups. Served as a tour guide for guided tours. Conducted survey for data collection regarding annual expenditure of golf courses on thatch management using cultural techniques. Utilized this data to design laccase optimization studies to lower cost associated with application of laccase.

Extension and Training Workshops, The University of Georgia, Griffin, GA, 2010-2013

Interacted with golf course superintendents and industry personnel regarding the science behind using laccase enzyme as an alternate method to manage thatch in turfgrass systems. Delivered lectures and seminars on the progress of the new biodethatching research at these extension workshops:

1. Georgia Golf Environmental Foundation - Golf Course Management Training, The University of Georgia, Griffin, GA, Feb 2013
2. Georgia Golf Environmental Foundation - Golf Course Management Training, The University of Georgia, Griffin, GA, Jan. 2012
3. Urban Ag. Council - Edge Expo, Duluth, GA, Dec. 2011
4. Georgia Golf Environmental Foundation and GGCSA Workshop, The University of Georgia, Griffin, GA, Mar. 2010

Farmers' Fair, Punjab Agricultural University, Ludhiana, Punjab, India, 2001-2007

One-on-one interaction with farmers from across the state, organized training sessions for collecting soil and water samples. Demonstrated research plots and greenhouse studies to update growers on the latest research. Assisted faculty members in organizing laboratory tours for farmers to update them on the latest techniques used in analyzing soil and water samples. Discussed latest research conducted in the Department of Soils to educate farmers and organized sessions displaying latest farm implements used for research.

Village Training Program, Punjab Agricultural University, Ludhiana, India, Spring 2005

Six-month extension training program aimed to improve interaction skills with growers. Prepared audio-visual aids and organized meetings to educate farmers about the latest research. Conducted door-to-door campaign to generate data regarding the latest problems faced by farmers in an assigned village. Interpreted data collected from different villages to generate reports for department of Extension. Assisted extension faculty members to deliver solutions to the issues faced by growers.

EXTENSION PUBLICATIONS**Peer Reviewed Articles**

1. Acharya, B., C. Barrett, and **S.S. Sidhu**, L. Zotarelli, M. Dukes, and V. Sharma. 2023. Methods to quantify in-field nutrient leaching. University of Florida Institute of Food and Agricultural Sciences EDIS. <https://edis.ifas.ufl.edu/publication/AE581>
2. Wright, D.L., D. Rowland, and **S.S. Sidhu**. 2022. Water use and irrigation management of agronomic crops. University of Florida Institute of Food and Agricultural Sciences EDIS. <https://edis.ifas.ufl.edu/publication/AA131>

Peer Review Articles Under Review

1. Kumar, Shivendra., K. Athearn, R. Hochmuth, **S.S. Sidhu**, K. Aue, J. Love, C.D. Court, M. Olexa, and A. Lindsey. 2023. Post-hurricane recovery and assistance for agriculture in Florida. University of Florida Institute of Food and Agricultural Sciences EDIS.
2. Singh, H., E. Carter, L. Sharma, and S.S. Sidhu. 2023. Sulfur fertilization in cotton. University of Florida Institute of Food and Agricultural Sciences EDIS.

Popular Articles / Magazine Article

1. Mackowiak, C., E. Nafi, S.S. Sidhu, T. Stansly, I. Small, S. George, and D. Wright. 2022. Nitrogen Calibration Strip-A tool to better manage in-season nitrogen fertilization for cotton production in Florida. Panhandle Ag e-News. UF/IFAS Extension. <https://nwdistrict.ifas.ufl.edu/phag/2022/12/09/nitrogen-calibration-strip-a-tool-to-better-manage-mid-season-nitrogen-fertilization-for-cotton-production-in-florida/>
2. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, and P.L. Raymer. 2012. Managing thatch with fungal laccase. Golf Course Mgt. 80 (12): 84-90.

EXTENSION TALKS**Invited Talks**

1. **Sidhu, S.S.** (April 25, 2023). The critical issue of water in Florida agricultural production. The Institute for Learning in Retirement, Gainesville, FL.

2. **Sidhu, S.S.**, and R. Hochmuth. (Jan. 7, 2023). Utilizing data to determine soil moisture sensor placement in vegetable beds. Southeast Fruit and Vegetable Conference, Savannah, GA.
3. **Sidhu, S.S.** (Oct. 11, 2022). An update and vision for 4Rs project: Use of Miller High Boy for nutrient management and beyond. Suwannee River Water Management District Board Meeting and Workshop, Live Oak, FL.
4. **Sidhu, S.S.** (Oct. 6, 2022). Soil regeneration for water quantity and quality conservation. Marion County Water School-Water Quality in Rural Communities, Ocala, FL.
5. **Sidhu, S.S.** (Oct. 4, 2022). Vision for the future direction of nutrient management in FL ecosystems. Suwannee River Partnership Steering Committee, NFREC-SV, Live Oak, FL.
6. **Sidhu, S.S.** (Sep. 12, 2022). Water management in grazed systems: Impacts on water use, quality, and soil nutrients. Agricultural Alliance of Citrus County, FL (Virtual).
7. **Sidhu, S.S.** (March 31, 2022). Nitrogen Calibration Strip as an on-farm tool for in-season nitrogen recommendation in cotton and corn. UF/IFAS Florida Certified Crop Adviser Educational Program (Virtual).
8. **Sidhu, S.S.** (Dec. 7, 2011). Thatch management: Exploring new options. Urban Ag Council Georgia EDGE Expo. Gwinnett Center, Duluth, GA.

Presentations (Oral) and Demonstration Talks

1. **Sidhu, S.S.**, S. Kumar, and S. Williams. (Aug. 22, 2023). Effect of controlled release potassium in comparison to conventional potassium on soil and plant availability in peanuts. Peanut Field Day, NFREC-SV, Live Oak, FL.
2. **Sidhu, S.S.**, S. Kumar, and S. Williams. (Aug. 22, 2023). Efficacy of different methods of application of chelated iron on peanut yield and quality. Peanut Field Day, NFREC-SV, Live Oak, FL.
3. **Sidhu, S.S.** (July 18, 2023). Use of soil moisture probes for efficient nutrient and irrigation management in corn production. Corn Field Day, NFREC-SV, Live oak, FL.
4. **Sidhu, S.S.**, and R. Hochmuth. (Mar. 10, 2023). What is the UF/IFAS strategy in Suwannee Valley to meet BMAP requirements. Florida Department of Agriculture and Consumer Services Visit, NFREC-SV, Live Oak, FL.
5. **Sidhu, S.S.**, L. Sharma, and D. Arruda Huggins De Sa Leitao. (Mar. 2, 2023). Corn fertilizer management: Corn rate study. Florida Stakeholder Engagement Program (STEP) In-Service Training, NFREC-SV, Live Oak, FL.
6. **Sidhu, S.S.** (Feb. 11, 2023). Resilient cropping systems: Pathway for sustainable future. The North Florida Cattlemen's Association meeting, NFREC-SV, Live Oak, FL.

7. **Sidhu, S.S.** (Jan. 26, 2023). 4Rs demonstration project in Hamilton County in 2023. Hamilton County Field Corn Meeting, UF/IFAS Hamilton County Extension Office, Jasper, FL.
8. Sharma, L., **S.S. Sidhu**, D. Arruda Huggins De Sa Leitao. (Jan. 26, 2023). First year progress on nitrogen recommendations for Florida corn growers. Hamilton County Field Corn Meeting, UF/IFAS Hamilton County Extension Office, Jasper, FL.
9. Sharma, L., **S.S. Sidhu**, D. Arruda Huggins De Sa Leitao. (Jan. 23, 2023). Developing improved nitrogen recommendations for Florida corn growers. Corn Advisory Committee Meeting, NFREC-SV, Live Oak, FL.
10. **Sidhu, S.S.** (Jan. 18, 2023). An update and vision for 4Rs project. In-Service Training-Agronomic Row Crops, NFREC-Quincy, Quincy, FL.
11. **Sidhu, S.S.** (Jan. 11, 2023). Use of ‘Miller High Boy’ for banding liquid nitrogen and early cover crop planting before corn harvest. Soil Health and Cover Crop Field Day, NFREC-SV, Live Oak, FL.
12. **Sidhu, S.S.** (Jan. 11, 2023). Overview of long-term integrated crop-livestock rotational production system for improving soil health and water quality in FL ecosystems. Soil Health and Cover Crop Field Day, NFREC-SV, Live Oak, FL.
13. **Sidhu, S.S.** (Aug. 23, 2022). Impacts of controlled release potassium on peanuts. Annual Suwannee Valley Peanut Field Day, NFREC-SV, Live Oak, FL.
14. **Sidhu, S.S.** (Aug. 23, 2022). Impacts of chelated iron on peanut decline. Annual Suwannee Valley Peanut Field Day, NFREC-SV, Live Oak, FL.
15. Sharma, L., and **S.S. Sidhu** (July 7, 2022). BMP nitrogen fertilizer rate study. Annual Suwannee Valley Corn Field Day, NFREC-SV, Live Oak, FL.
16. Stansly, T., E. Nafi, and **S.S. Sidhu** (July 7, 2022). Nitrogen calibration strip in corn. Annual Suwannee Valley Corn Field Day, NFREC-SV, Live Oak, FL.
17. Sharma, L., D. Arruda Huggins De Sa Leitao, H. Singh, N. Kaur, **S.S. Sidhu**, and Z. Brym (June 7, 2022). Implementing nitrogen BMPs in selected row cropping systems in Florida. In-Service Training-Working with clients to measure water savings and nutrient load reductions associated with their BMP implementation. Sarasota, FL.
18. **Sidhu, S.S.** (April 20, 2022). Soil-Water-Plant relations. In-Service Training-Agricultural water management for row and specialty crops. NFREC-SV, Live Oak, FL.
19. **Sidhu, S.S.** (March 16, 2022). Implications of a resilient cropping system on efficient nutrient uptake. Follow the Water Group farm visit, NFREC-SV, Live Oak, FL.
20. **Sidhu, S.S.**, D. Wright, S. George, and I. Small (Jan. 19, 2022). Nitrogen Calibration Strip: An on-farm tool for site-specific in-season nitrogen application decisions in cotton. In-Service Training-Agronomic Row Crops (Virtual Presentation).

21. **Sidhu, S.S.**, and D.L. Wright (Oct. 1, 2021). A resilient cropping system: Pathway for sustainable future. NFREC Quincy 100th Anniversary, Quincy, FL.
22. **Sidhu, S.S.**, and D.L. Wright (June 22, 2021). Nitrogen Calibration Strip: An on-farm tool for in-season nitrogen requirements in cotton. Precision Ag for Nutrient Management Field Day, Monticello, FL.
23. Wright, D.L., and **S.S. Sidhu** (June 22, 2021). Nitrogen and PGR management in cotton. Precision Ag for Nutrient Management Field Day, Monticello, FL.
24. Burger, M., T. Stansly, and **S.S. Sidhu** (June 22, 2021). Use of Veris MSP3 for capturing soil variability and field mapping. Precision Ag for Nutrient Management Field Day, Monticello, FL.
25. **Sidhu, S.S.**, and D.L. Wright (June 16, 2021). Nitrogen Calibration Strip: An on-farm tool to optimize nitrogen requirements in cotton. Precision Ag for Nutrient Management Field Day, Hatcher Farms, Marianna, FL.
26. Wright, D.L., and **S.S. Sidhu** (June 16, 2021). Nitrogen needs on cotton. Precision Ag for Nutrient Management Field Day, Hatcher Farms, Marianna, FL.
27. Burger, M., T. Stansly, and **S.S. Sidhu** (June 16, 2021). Use of Veris MSP3 for capturing field variability and mapping. Precision Ag for Nutrient Management Field Day, Hatcher Farms, Marianna, FL.
28. **Sidhu, S.S.** and D.L. Wright (Aug. 2019). Nitrogen calibration strip to inform in-season nitrogen application in cotton. Florida Department of Agriculture and Consumer Services-Field Visit, Larry Ford Farms, Malone, FL.
29. **Sidhu, S.S.**, D.L. Wright, and A. Albertin (Aug. 2019). Lessons learned from on-farm installation of drain gauges to capture nitrate leaching in Florida ecosystems. Florida Department of Agriculture and Consumer Services-Field Visit, Larry Ford Farms, Malone, FL.
30. **Sidhu, S.S.**, and D.L. Wright (Sep. 2018). Sod-based rotation impact on pests, water use, and yield. Peanut Diseases and Pests Tri-State Tour, NFREC-Quincy, Quincy, FL.
31. Wright, D.L., and **S.S. Sidhu** (Jan. 2018). Impacts of cattle-grazing and sod-based rotation on soil and plant properties. National Fish and Wildlife Foundation-Field Visit, NFREC-Marianna, Marianna, FL.
32. Huang, Q., and **S.S. Sidhu** (Feb. 2013). Use of laccase enzyme for thatch management. Georgia Golf Environmental Foundation: Golf Course Management Training, The University of Georgia, Griffin, GA.
33. **Sidhu, S.S.**, and P.L. Raymer (Aug. 2012). Optimizing laccase application rate and frequency to manage thatch. Turfgrass Research Field Day, The University of Georgia, Griffin, GA.

34. **Sidhu, S.S.**, P.L. Raymer, Q. Huang, and R.N. Carrow (Jan. 2012). Thatch management using laccase enzyme. Georgia Golf Environmental Foundation: Golf Course Management Training, The University of Georgia, Griffin, GA.
35. **Sidhu, S.S.**, and Q. Huang (Aug. 2010). Control of thatch using wood decaying fungi. Turfgrass Research Field Day, The University of Georgia, Griffin, GA.
36. **Sidhu, S.S.** (Mar. 2010). Thatch management using fungal laccases. Georgia Golf Environmental Foundation and GGCSA Workshop, The University of Georgia, Griffin, GA.

Posters and Handouts

1. Nafi, E., **S.S. Sidhu**, T. Stansly, I. Small, S. George, D. Wright, and C. Mackowiak. (Jan. 18, 2023). Nitrogen calibration strip as an on-farm tool for cotton production. In-Service Training-Agronomic Row Crops, NFREC-Quincy, Quincy, FL.
2. Treadwell, D., D. Campbell, and **S.S. Sidhu**. (Jan 11, 2023). Optimizing nitrogen returns from your cover crops. Soil Health and Cover Crop Field Day, NFREC-SV, Live Oak, FL.
3. **Sidhu, S.S.**, and D.L. Wright (Feb 4, 2022). A resilient cropping system: Impacts on root system a key to nutrient management. Floridan Aquifer Collaborative Engagement for Sustainability (FACETS) Team-Field Visit, NFREC-SV, Live Oak, FL.
4. Burger, M., T. Stansly, and **S.S. Sidhu** (June 22, 2021). Veris MSP3: A guide for processes involved in capturing soil variability to field mapping. Precision Ag for Nutrient Management Field Day, Monticello, FL.
5. Burger, M., T. Stansly, and **S.S. Sidhu** (June 16, 2021). A guide for processes involved in capturing soil variability to field mapping using Veris MSP3. Precision Ag for Nutrient Management Field Day, Hatcher Farms, Marianna, FL.
6. **Sidhu, S.S.**, and D.L. Wright. (Aug. 2019). Integrating precision agriculture techniques to optimize in-season nitrogen application in cotton. Florida Department of Agriculture and Consumer Services-Field Visit, NFREC-Marianna, Marianna, FL.
7. **Sidhu, S.S.**, I. Small, and D.L. Wright. (Sep. 2018). Beneficial impacts of sod-based rotation on pests, water use, and crop yield. Peanut Diseases and Pests Tri-State Tour, NFREC-Quincy, Quincy, FL.
8. **Sidhu, S.S.**, S. George, I. Small, and D.L. Wright. (May 2018). An overview of sod-based rotations and conservation tillage. National Institute of Food and Agriculture-Field Visit, NRFEC-Quincy, Quincy, FL.
9. **Sidhu, S.S.**, S. George, I. Small, and D.L. Wright. (Apr. 2018). Sod-based rotations and conservation tillage - An overview. Association of Florida Conservation Districts-Field Visit, NRFEC-Quincy, Quincy, FL.

10. **Sidhu, S.S.**, S. George, I. Small, and D.L. Wright. (Jan. 2018). Sod-based rotations and conservation tillage. National Fish and Wildlife Foundation-Field Visit, NRFEC-Marianna, Marianna, FL.

TEACHING EXPERIENCE

Field Visit and Equipment Training, Florida A&M University, Quincy, FL, 2021

Organized a hands-on training for Florida A&M University graduate students registered for course SWS 4427 “Soil and Plant Analysis”. The students were trained on different cropping systems established on long-term research trials at University of Florida NFREC, Quincy, FL. Students were provided hands on training on use of Veris MSP3, a tractor mounted GPS guided equipment used for field mapping based on soil electrical conductivity, pH, and organic matter. Students were trained to collect deep core soil samples using a geoprobe soil sampling system.

Science and Careers in Agriculture Program, University of Florida, Quincy, FL, 2018

This program was in conjunction with Robert F. Moore Day School, Quincy, FL where students are delivered a weekly lecture on different aspects of agriculture and food production. Delivered one-hour lecture on ‘Soil Properties’ to high school students. Prepared questionnaire to assess background knowledge of the group related to soils. Lecture included PowerPoint presentation and demonstration of different soil textural classes and organic matter.

Young Scholars Program, The University of Georgia, Griffin, GA, 2010-2012

Duties: Supervised high school students for 30 hours per week for summer research projects. Designed short-term field and laboratory trials for students to make contributions to overall research goals. Collaborated with students in research poster presentation.

Laboratory Teaching Assistant, The University of Georgia, Griffin, GA, Fall 2009

Duties: Taught course CRSS 6660 “Chemical Analysis of Environmental Samples.” Collected and analyzed soil and water samples, prepared and delivered lectures, and conducted laboratory experiments. Assisted my major professor and students with laboratory assignments.

Private Tutoring, Ludhiana, Punjab, India, 2004-2007

Provided mathematics and science tutoring for high school students.

AWARDS AND HONORS

- Educational Aids Blue Ribbon Award for EDIS Publication “Methods to quantify in-season nutrient leaching”, American Society of Agricultural and Biological Engineers, 2023
- Gerald O. Mott Meritorious Graduate Student Award, Crop Science Society of America, 2012
- First place, graduate student poster competition-Crops Division, ASA Southern Regional Branch Annual Meeting, Birmingham, AL, 2012
- First place, graduate student oral competition-Crops Division, ASA Southern Regional Branch Annual Meeting, Corpus Christi, TX, 2011

- First Place, industry committee student award-oral competition, turfgrass science, Annual ASA-CSSA-SSSA International Meetings, Long Beach, CA, 2010
- Clint Tolbert Student Enhancement Award, Department of Crop and Soil Sciences, The University of Georgia, Athens, GA, 2010
- Nominated for Broadus Browne Award, College of Agricultural and Environmental Sciences, The University of Georgia, Athens, GA, 2010
- Dept. of Crop and Soil Sciences Graduate Assistantship, The University of Georgia, Athens, GA, May 2010-Aug. 2012
- Selected and received Graduate School Research Assistantship, The University of Georgia, Athens, GA, May 2008-April 2010
- Dr. K.S. Kahlon Gold Medal for overall best M.S. student, Punjab Agricultural University, Ludhiana, India, 2007
- Merit Certificate awarded for academic achievements in Soil Science, Punjab Agricultural University, Ludhiana, India, 2007
- University Merit Scholarship, Punjab Agricultural University, Ludhiana, India, 2005-2006
- Ranked 1st for interview based on entrance exam for M.S. admission to the Department of Soils, Punjab Agricultural University, Ludhiana, India, 2005
- Dr. J.S. Kanwar Merit Scholarship, Department of Soils, Punjab Agricultural University, Ludhiana, India, 2004
- University Merit Scholarship, Punjab Agricultural University, Ludhiana, India, 2001-2003
- Ranked 1st for interview through an entrance exam for B.S. admission to College of Agriculture, Punjab Agricultural University, Ludhiana, India, 2001

PROFESSIONAL DEVELOPMENT

Journal Editor

Guest Editor for special issue of 'Sustainability' Journal-Smart Farming and Bioenergy Feedstock Crops.

Invited Reviewer of Scientific Journals

- Energy
- Soil Biology and Biochemistry
- Crop Science
- Agronomy Journal

- Peanut Science
- Weed Science
- Agronomy for Sustainable Development
- Agrosystems, Geosciences & Environment

Invited Reviewer of Extension Journals

- University of Florida, IFAS-Extension Data Information Source (EDIS)

Professional Memberships

- Member of National Association of County Agricultural Agents, Maroa, IL, 2022-Present
- Member of Florida Association of County Agricultural Agents, 2022-Present
- Member of Extension Professional Associations of Florida, 2022-Present
- Member of Crop Science Society of America, Madison, WI, 2010-Present
- Member of American Society of Agronomy, Madison, WI, 2010-Present
- Member of Soil Science Society of America, Madison, WI, 2010-Present
- Member of Weed Science Society of America, Lawrence, KS, 2013-2014
- Member of Southern Weed Science Society, Las Cruces, NM, 2013-2014
- Member of Indian Society of Soil Science, New Delhi, India, 2005-2007

Letters of Recommendation and References Provided

1. Bibek Acharya, Graduate Student, Ag. Biological Engineering: application for the Richard A. Herbert Memorial Scholarship, University of Florida, 2023
2. Shivendra Kumar, Postdoctoral Research Associate, Iowa State University for the position of Regional Specialized Agent in Row Crops at University of Florida NFREC-SV, 2022

Leadership and Travel Awards

- Department of Crop and Soil Sciences (UGA) travel award to attend the ASA Southern Regional Branch Annual Meeting, 2012
- Selected and attended Georgia Collegiate Leadership Conference, The University of Georgia, Athens, GA, 2012
- Selected and attended Emerging Leaders Program, Graduate School, The University of Georgia, Athens, GA, 2011
- Graduate School and Department of Crop and Soil Sciences (UGA) travel awards to attend Annual ASA-CSSA-SSSA International Meetings, 2010-2011

CAMPUS/ SOCIETY INVOLVEMENT

- Elected as a member of Faculty Senate, University of Florida, Fall 2023-Present

- Member, search and screen committee for NFREC-Quincy Farm Manager, Fall 2023
- Voting member of Peanut Cultivar Release Advisory Committee, UF-IFAS, 2022-Present
- Serve on the UF-IFAS BMP Mini-Grants Review Panel, 2022-Prsesnt
- Represent UF-IFAS at inter-agency monthly meetings, 2022-Present
- Serve on the Suwannee River Partnership Steering Committee, 2022-Present
- Member of Suwannee River Partnership, a partnership consisting of educators, regulators, growers, and conservationists to provide science-based solutions to protect Florida waters, 2022-Present
- Serve on Corn Advisory Committee, a committee consisting of growers, crop consultants, county extension faculty, regional specialized agents, and extension specialists to assist and guide in small plot and on-farm corn nitrogen rate trials in FL panhandle, 2022- Present
- Serve on Cotton Advisory Committee, a committee consisting of growers, crop consultants, county extension faculty, regional specialized agents, and extension specialists to assist and guide in small plot and on-farm cotton nitrogen rate trials in FL panhandle, 2022- Present
- Served as UGA Griffin Ambassador, The University of Georgia, Griffin, GA, 2011-2012 This organization represented UGA Griffin campus student community on various social and academic events.
- Member, UGA Service Dawgs, The University of Georgia, Griffin, GA, 2011-2012 This student organization served Griffin, GA community in different ways.
- President, post graduate hostel canteen committee, Punjab Agricultural University, Ludhiana, India, 2006-2007
- Vice President, post-graduate hostel mess committee, Punjab Agricultural University, Ludhiana, India, 2006-2007
- Member, post-graduate hostel mess committee, Punjab Agricultural University, Ludhiana, India, 2005-2007