SUDEEP SINGH SIDHU, Ph.D.

Curriculum Vitae
August 6, 2022

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EDUCATION

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

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

B.S. Agriculture (Honors), Punjab Agricultural University, Ludhiana, Punjab, India, June 2005
Elective Subject: Soil Science

PROFESSIONAL AND RESEARCH EXPERIENCE (Overview)

Regional Specialized Agent II, University of Florida, Live Oak, FL, Jan. 2022-Present
Research Assistant Scientist, University of Florida, Quincy, FL, Feb. 2021-Jan. 2, 2022
Postdoctoral Research Associate, University of Florida, Quincy, FL, Dec. 2017-Feb. 2021
Crop Consultant/Agronomist, Snyder Family Farms, Yerington, NV, Sep. 2017-2019
Agronomist, Nevada Fresh Pak, Yerington, NV, Oct. 2014-Aug. 2017
Postdoctoral Research Associate, The University of Georgia, Griffin, GA, Oct. 2012-Oct. 2014
Education Program Specialist, The University of Georgia, Griffin, GA, Aug. 2012-Sep. 2012
Graduate Research Assistant, The University of Georgia, Griffin, GA, May 2008-Aug. 2012
Graduate Student, Punjab Agricultural University, Ludhiana, Punjab, India, 2005-2007

CURRENT PROJECTS AND EXTENSION ACTIVITIES

- On-farm trials demonstrating side-dress nitrogen in corn, integrated crop-livestock systems, and cover crops as BMPs for efficient nutrient management and improved water quality.
- On-farm trials evaluating nitrate losses using drain gauges in corn, cotton, and peanut grown under conventional and sod-based rotation systems with and without cattle grazing.
- Farm visits to assist growers with establishing drip and overhead sprinkler systems and to educate growers in efficient use of soil moisture probes for informed irrigation needs.
- Manage a YouTube channel with grower testimonials and latest research activities at NFREC

RESEARCH		EXTENSION		GRANTSMANSHIP		PATENTS	
Google Scholar		Talks:	31	Award Amount:	$12+ M	Utility Patents	2
Publications:	29	On-farm trials across 7 counties:	16	Grants Funded:	28	Patent Pending	1
Citations:	193			Grants Pending:	6		
Conference abstracts:	36	Events organized:	10				

AWARDS AND HONORS

- 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 AND RESEARCH EXPERIENCE

Regional Specialized Agent II *In* Agricultural Water Management, Northeast Extension District, University of Florida, NFREC-Quincy, FL, Jan. 2022-Present

Projects:

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 nitrogen recommendations for Florida corn growers.
4. Developing improved nitrogen recommendations for Florida cotton growers.
5. Florida Soil Moisture Sensor Network: Program evaluation and expansion.
6. Accelerating Florida Innovative Agricultural Stakeholder Engagement Program to enhance best management practices
7. Testing a controlled release potassium fertilizer to bolster peanut health on farms impacted by peanut decline
8. Is peanut decline caused by carbonates in well water?
9. Peanut high pH/bicarbonate irrigation water and leathery hull investigation

Duties: Conduct on-farm trials to demonstrate impacts of cropping systems on underground water quality. Establish on-farm demonstration trials and sites to educate growers with efficient nitrogen management such as side-dress nitrogen in corn using Miller High boy. Establish demonstration sites in parallel small plot research trials to develop improve nitrogen recommendations for corn and cotton in Florida panhandle. Organize farm tours and in-service trainings for multi-state county faculty with an emphasis on efficient water management and water quality. Support row- and specialty crop growers with drip or over-head irrigation systems. Plan farm visits when requested by the 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. Serve on corn and cotton advisory committees consisting of UF faculty, growers, and county agents to steer nitrogen rate studies in Florida.

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 Sentek moisture probes.
3. Evaluate the 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 Sentek 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-Present
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 caneberries, watermelons, melons, onions, 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 manage crop production practices of 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 ^{14}C-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 optimize 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.

PUBLICATIONS AND INTELLECTUAL PROPERTIES:

Refereed Journal Publications

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

1. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, D. Jesperson, 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. https://doi.org/10.1002/its2.138

2. 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. https://doi.org/10.1016/j.soilbio.2022.108708

3. 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

4. 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. https://doi.org/10.1016/j.soilbio.2022.108618

5. **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

6. **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

7. **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

8. **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 doi: https://doi.org/10.19080/CTBEB.2019.19.556002

9. **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

10. 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

11. 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

12. 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

13. Liu, J., **S.S. Sidhu**, M.L. Wang, B. Tonnis, 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

14. 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

15. Singh, R., **S.S. Sidhu**, M.A. Czarnota, and P.E. McCullough. 2015. Differential behavior of two phoyosystem II inhibitors in seashore paspalum. Agron. J. 107: 997-1001. https://doi.org/10.2134/agronj14.0467

16. **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

17. **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

18. **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

19. 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

20. 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

21. 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

22. 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

23. 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

24. **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

25. 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

26. **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

27. **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

28. 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.

29. 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 Under Review

1. Seepaul, R., **S.S. Sidhu**, I.M. Small, S. George, and D.L. Wright. 2022. Growth, yield, and chemical composition responses of rainfed Carinata to tillage and nitrogen nutrition. *Submitted to* Agron. J.

2. Rieke, E.L., D.K. Bagnall, C.L.S. Morgan, K.L.H. Grueb,….**S.S. Sidhu**….C.W. Honeycutt. 2022. Evaluation of aggregate stability methods for soil health. *Submitted to* Geoderma.

3. Bagnall, D.K., C.L.S. Morgan, G.M. Bean, D. Liptzin, S.B. Cappellazzi, M. Cope, K.L.H. Grueb,….**S.S. Sidhu**,…..C.W. Honeycutt. 2022. Selecting soil hydraulic properties as indicators of soil health: Measurement response to management and site characteristics. *Submitted to* Soil Sci. Soc. Am. J.

4. Liptzin, D., E.L. Rieke, S.B. Cappellazzi,…**S.S. Sidhu**…. C.W. Honeycutt. 2022. An evaluation of nitrogen indicators for soil health in long-term agricultural experiments. *Submitted to* Soil Sci. Soc. Am. J.

Manuscripts In Preparation

1. **Sidhu, S.S.***, and D.L. Wright. 2022. Testing nitrogen calibration strip in FL panhandle. To be submitted to Crop Science.

2. **Sidhu, S.S.***, and D.L. Wright. 2022. Impact of cattle grazing on nitrogen use efficiency in livestock-crop integrated systems. *To be submitted to* Agron. J.

3. **Sidhu, S.S.***, Q. Huang, R.N. Carrow, and P.L. Raymer. 2022. Residual effect of laccase application on thatch layer characteristics of bermudagrass and zoysiagrass. To be *submitted to* HortScience.

4. Yu, J., C.R. Johnston, **S.S. Sidhu,** and P.E. McCullough. 2022. Absorption and degradation rate influence turfgrass susceptibility to mesotrione. To be *Submitted to* Weed Sci.

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 Pending

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 Projects: Principal Investigator

1. **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: **Sudeep S. Sidhu** (University of Florida). Co-PIs: Jay

Capasso, Amanda Phillips, Tyler Pitman, Dan Fenneman, Emily Beach, Mark Warren, Keith Wynn, and Kevin Korus
Awarded: $30,640.60

2. **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: **Sudeep S. Sidhu** (University of Florida). Co-PIs: Lakesh Sharma, Kelly Aue, Amanda Phillips, and Dan Fenneman.
Budgeted: $11,892.59

3. **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

4. **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: V. Sharma and R. Hochmuth
Awarded: $1,208,978.

5. **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.

6. **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.

7. **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 Projects: 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. **UF/IFAS Specific Appropriations 1480A for Nutrient Management Research (2022):** Equipment needs for precision ag. Research at NFREC-SV to fulfil knowledge gaps in nutrient

management. PIs: R.C. Hochmuth and **S.S. Sidhu** (University of Florida). Co-PIs: V. Sharma, L. Sharma, and Vacant NFREC-SV agronomic crop RSA
Awarded: $786,271.84

2. **UF/IFAS Specific Appropriations 1480A for Nutrient Management Research (2022):** 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

3. **UF/IFAS Specific Appropriations 1480A for Nutrient Management Research (2022):** 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

4. **USDA-National Institute of Food and Agriculture (2017-2023):** Floridan Aquifer Collaborative Engagement for Sustainability. PI: Wendy Graham (University of Florida). Co-PIs: Faculty of University of Florida, University of Georgia, Albany State University, and Auburn University. **Sudeep S. Sidhu (Co-PI)**
Awarded:

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. **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

9. **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

10. **[$]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

11. **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

12. **[$]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

13. **[$]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

14. **[$]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

15. **[$]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

16. **[$]Florida Peanut Producers Association (2020-2021):** Investigating the role of soil pH and plant nutrition in peanut decline. 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.

17. **[$]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

18. **[$]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

19. **$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

20. ***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

21. ***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. **Southern Sustainable Agriculture Research and Education (Pre-Proposal 2022):** Novel Remote Sensing-Based Water and Nutrient Management Models for Sustainable Agriculture. PI: Ebrahim Babaeian (University of Florida). Co-PIs: Lakesh Sharma, Samuel Smidt, Michael Dukes, **Sudeep S. Sidhu**, and Andrea Albertin
   Budgeted: 400,000.00

2. **USDA-AFRI's Sustainable Agricultural Systems (2022):** Safeguarding National Bio-Security and Bio-diversity (SNBIO2) to Ensure Sustainability of Integrated Crop-Livestock Systems (ICLS). PI: Brad Heins (University of Minnesota). Co-PIs: Teams from University of Florida, Texas, Utah State, and Iowa State
   Budgeted: 15,000,000.00

3. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2022-2023):** Demonstrating controlled release nitrogen use in Snap Beans. PI: Robert Hochmuth (University of Florida). Co-PIs: Lakesh Sharma and **Sudeep S. Sidhu**
   Budgeted: $17,513

4. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2022-2023):** Developing and demonstrating the 6th R-Right row spacing (15-inch) and population density corn production system. PI: **Sudeep S. Sidhu** (University of Florida). Co-PIs: Lakesh Sharma, Diego Leitao, and Robert Hochmuth.
   Budgeted: $38,906.08

5. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2022-2023):** Demonstrating impacts of nematodes on nitrogen use efficiency in corn. PI: **Sudeep S. Sidhu** (University of Florida). Co-PIs: Lakesh Sharma, Diego Leitao, and Robert Hochmuth.
   Budgeted: $35,867.08

6. **Florida Department of Agriculture and Consumer Services (BMP Mini-Grant Program) (2022-2023):** Demonstrating impacts of cover crops and mustard on soil

nematodes and nitrogen use efficiency in corn. PI: Lakesh Sharma (University of Florida). Co-PIs: Sudeep S. Sidhu, Diego Leitao, and Robert Hochmuth.
Budgeted: 40,799.00

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.**, V. Sharma, B. Acharya, R. Hochmuth, and L. Sharma. (Nov. 2022). Impacts of cropping systems on crop yields and FL water quality. *Submitted to* ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.

2. **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. *Submitted to* ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.

3. Leitão, D., **S.S. Sidhu**, W. Griffin, H. Muehleisen, and L. Sharma. (Nov. 2022). Irrigated new hybrid corn yield response to different nitrogen rates in Florida. *Submitted to* ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.

4. Leitão, 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. *Submitted to* ASA-CSSA-SSSA Annual International Meetings, Baltimore, MD.

5. **Sidhu, S.S.**, Q. Huang, R.N. Carrow, D. Jesperson, 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.

6. 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.

7. 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

8. **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/

9. **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.

10. Seepaul, R., **S.S. Sidhu**, I.M. Small, S. George, J.J. Marois, ad 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.

11. 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.

12. 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.

13. **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).

14. 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.

15. 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.

16. **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.

17. **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.

18. 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.

19. **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.

20. 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.

21. **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.

22. 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.

23. **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.

24. **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.

25. **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.

26. **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.

27. 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.

28. **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***

29. **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. 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

2. Annual report to UF-Agronomy Department Head, Dr. Gopal Kakani, for peanut checkoff grant “Peanut decline caused by carbonates in water?”, July 2022

3. Quarterly reports for Florida Department of Agriculture and Consumer Services for the project “On-Farm Application of Best Management Practices: Timing, Rate and Placement of Nutrients with Cover Cropping”, Spring 2022-Present.

4. 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”, Spring 2022-Present.

5. Yearly and quarterly reports for Florida Department of Agriculture and Consumer Services for the project “Nitrogen calibration strip as a tool to reduce fertilizer nitrogen input in cotton”, 2021.

6. Yearly and quarterly reports for Florida Department of Agriculture and Consumer Services for the 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.

7. Final report for Northwest Florida Water Management District- 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.

8. Final report for National Peanut Board-Comparison on nematicides/insecticides in peanut with an optimal vs less optimal rotation, 2018-2019.

9. Final report for Northwest Florida Water Management District-Development of a sod-based rotation system, 2018-2019.

10. Prepared bi-annual progress reports for the Golf Course Superintendents Association of America, 2008-2010.

11. Prepared annual progress reports and research presentations for Georgia Golf Environmental Foundation, 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, Sentek technologies 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

ON-FARM DEMONSTRATION/RESEARCH TRIALS

4R 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 Suwanee 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 Brooks Garland 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 nitrate, ammonium, and total nitrogen fate 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 utilizing NCS in each zone for in-season N recommendation.

EXTENSION AND OUTREACH MEETINGS/ TRAININGS ORGANIZED

Corn Advisory Committee Field Day, NFREC-SV, Live Oak, FL, July 15, 2022
Organized a field day with members of the 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 showcased 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 (Joel Love) and 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). https://www.eventbrite.com/e/regional-corn-field-day-tickets-360808547077

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 the 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 the on-going nutrient management and cropping systems research focusing on water quality and efficient nutrient management in FL ecosystems. The students were demonstrated the use of drain gauge lysimeters and 16-year rotational production study to investigate impacts of bahiagrass on row crop yield and fate of nutrients in soil profile.

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 laboratory 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 field demonstrations 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. Link to the program agenda.

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 to educate the stakeholders on the latest research and equipment being utilized by faculty at University of Florida 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 the 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, University of Florida, Quincy, FL, Mar. 2019
Organized a meeting of UF faculty with 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.

EXTENSION AND OUTREACH ACTIVITIES

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 Suwanee 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.

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 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.

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 the future vision of the extension center on the 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 the use of capacitance- based soil moisture probes in watermelons to regulatory agencies and environmental groups. Discussed the advantages of soil moisture probes and the principle behind the technology. Educated the growers on understanding of graphical interface of the data collected and transmitted by the moisture probes. Demonstrated the 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 control 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 various 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 per zone per event to 40 minutes per zone per 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 the trolley tour with international students and discussed different cropping systems under the sod-based rotation system demonstration site at NFREC-SV. Demonstrated the 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 the field, the main line from the pump, and the floor plan of lay-flat, I made my suggestions to cut the elevated zones into lower acreage blocks to solve the 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 in nutrient movement down the soil profile and how she could she utilize the salinity data to make informed irrigation decisions. She was satisfied after our one-hour meeting.

Grower Outreach-Brooks Garland, Birdsong Peanut, 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 soils 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.

Floridan Aquifer Collaborative Engagement for Sustainability (FACETS)-Field Visit, NFREC-SV, Live Oak, FL, February 4, 2022
Demonstrated different cropping systems to the modeling group from the FACETS team to help them develop models to study nutrient losses from different systems. The team was introduced to summer grazing on bahiagrass pasture included as part of row crop rotation and winter grazing on winter cover crops. The FACETS team was also visited Starling Farms to observe both winter and summer grazing systems.

Agricultural In-Service Training-Northwestern District (Virtual), 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 the 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, University of Florida, 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, University of Florida, 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 the laccase dethatching experiments on creeping bentgrass, bermudagrass, and zoysiagrass. Discussed the 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 the 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 the faculty members in organizing laboratory tours for the 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 the 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 the 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 the 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 the farmers.

EXTENSION PUBLICATIONS

Peer Reviewed Articles

1. Acharya, B., C. Barrett, **S.S. Sidhu,** L. Zotarelli, M.Dukes, and V. Sharma. (2022). Methods to quantify in-field nutrient leaching. *Submitted to* University of Florida Institute of Food and Agricultural Sciences EDIS.

Popular Articles / Magazine Article

1. **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.** (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).

2. **Sidhu, S.S.** (Dec. 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.** (August 2022). Demonstrate impacts of controlled release potassium on peanuts. Annual Suwannee Valley Peanut Field Day, NFREC-SV, Live Oak, FL.

2. **Sidhu, S.S.** (August 2022). Impacts of chelated iron on peanut decline. Annual Suwannee Valley Peanut Field Day, NFREC-SV, Live Oak, FL.

3. Sharma, L., and **S.S. Sidhu** (July 2022). BMP nitrogen fertilizer rate study. Annual Suwannee Valley Corn Field Day, NFREC-SV, Live Oak, FL.

4. Stansly, T., E. Nafi, and **S.S. Sidhu** (July 2022). Nitrogen Calibration Strip in corn. Annual Suwannee Valley Corn Field Day, NFREC-SV, Live Oak, FL.

5. Sharma, L., D. Leitao, H. Singh, N. Kaur, **S.S. Sidhu**, and Z. Brym (June 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.

6. **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.

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)-Nutrient Management.

8. **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.

9. **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 Crops (Virtual Presentation), NFREC-Quincy, Quincy, FL.

10. **Sidhu, S.S.,** and D.L. Wright (Oct. 1, 2021). A resilient cropping system: Pathway for sustainable future. NFREC Quincy 100th Anniversary, Quincy, FL.

11. **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.

12. 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.

13. 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.

14. **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, Monticello, FL.

15. 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.

16. 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.

17. **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.
18. **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.

19. **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, North Florida Research and Education Center, University of Florida, Quincy, FL.

20. Wright, D.L., and **S.S. Sidhu** (Jan. 2018). Impacts of cattle-grazing and sob-based rotation on soil and plant properties. National Fish and Wildlife Foundation-Field Visit, North Florida Research and Education Center, University of Florida, Marianna, FL.

21. 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.

22. **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.

23. **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.

24. **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.

25. **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. **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.

2. **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-University of Florida, Marianna, FL.

3. **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, North Florida Research and Education Center, University of Florida, Quincy, FL.

4. **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-University of Florida, Quincy, FL.

5. **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-University of Florida, Quincy, FL.

6. **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-University of Florida, 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 the 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 is 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 the background knowledge related to soils of the group. 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 the overall research goals. Collaborated with students in the 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.

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

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. Shivendra Kumar, Postdoctoral Research Associate, Iowa State University for the position of Regional Specialized Agent in Row Crops at University of Florida NFREC-SV.

Leadership and Travel Awards

- UF Leadership Short Course, Institute of Food and Agricultural Sciences, 2022
- Department of Crop and Soil Sciences (UGA) travel award to attend the ASA Southern Regional Branch Annual Meeting, 2012
- Selected and attended the 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

- Serve on the North Florida Research and Education Center-Suwannee Valley Advisory Committee
- Serve on the steering committee of Suwannee River Partnership, 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
- Selected as a 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 the 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