# Sandeep Kumar

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#### Education

2024-present 2009 2009	Executive Potential Program Ph.D. Soil Science GIS Graduate Certificate		Graduate School USA University of Missouri-Columbia, Missouri University of Missouri-Columbia, Missouri			
2005	M.S. Soil Science		Himachal Pradesh Agriculture University-Palampur, India			
2003	B.S. Agriculture		Himachal Pradesh Agriculture University-Palampur, India			
Academic E	mploym	nent				
09-2024-present		Detail Duty (part-time) as Senior Advisor, Office of Chief Scientist,				
		USDA-National Institute of Food and Agriculture, Washington, DC				
08-2021-present		National Program Leader, USDA National Institute of Food and Agriculture, Kansas City, MO				
07-2018 to 07-2021		Associate Professor, Soil Biophysics and Soil Management				
		Department of Agron South Dakota State U	omy, Horticulture and Plant Science Iniversity (SDSU), Brookings, SD			
11-2012 to 06-2018		Assistant Professor, Soil Biophysics and Soil Management				
		Department of Agron	omy, Horticulture and Plant Science			
		South Dakota State U	Iniversity (SDSU), Brookings, SD			
04-2012 to 10-2012		<b>Research Scientist</b>				
		Carbon Management	and Sequestration Center, The Ohio State			
		University, Columbu	s, OH			
01-2010 to (	)3-2012	Post Doctoral Resea	rcher			
		Carbon Management	and Sequestration Center, The Ohio State			
		University, Columbu	s, OH			

# **Summary of Professional Experience**

- <u>National Program Leader (GS-15)</u>: Oversee and lead USDA programs with a \$30M annual budget, focusing on Soil Health, Agricultural Microbiomes in Plant Systems and Natural Resources, Small Business Innovation Research, Soil Health and Human Health Study, and Signals in Soils. Provide strategic direction to promote research, education, and extension activities within these programs, and provide leadership to advance food and agricultural research through partnerships with land-grant universities, professional societies, the private sector, other federal agencies, or other stakeholders.
- <u>Senior Advisor (detail duty)</u>: Provide strategic advice to the Office of Chief Scientist on policy development and operational planning related to climate change, regenerative agriculture, food nutrition, and per- and polyfluoroalkyl substances (PFAS). Conduct comprehensive reviews, evaluations, and critiques of a wide range of policy and program management issues pertaining to USDA's Bioenergy, Natural Resources, and Environment (BNRE) programs. Additionally, act as a liaison to facilitate oversight and coordination for participation in BNRE programs, while identifying and addressing high-priority issues within the USDA and across federal agencies.

- <u>Assistant (tenure-track) and Associate Professor (tenured)</u>: Outline objectives, plan and implement research plots; collect samples, lead laboratory work and data analyses and interpretation, and write manuscripts and present findings. Mentor students, research staff, and assistant professors (post-tenure); teach soils courses, write grant proposals to secure funding for research, lead research projects and organize workshops for producers and research professionals. Manage project budgets and reporting to funding agencies.
- <u>Postdoctoral Researcher</u>: Define and lead research objectives with a primary focus on assessing the impacts of conservation practices on soil health, greenhouse gas (GHG) emissions, and non-point source pollutants (NPSP) losses across different scales, from field to watershed. Teach soils lab, mentor part-time students, and develop grant proposals to secure funding for research.

# **Summary of Research Experience**

• Throughout my professional experience, I have been deeply engaged in research projects that evaluate the impacts of conservation practices on soil health, GHG emissions, and NPSP losses across various scales, from field to watershed. My research aims to promote sustainable agriculture by improving soil organic carbon (SOC), conserving soil moisture, and reducing GHG emissions. Specifically, my published work addresses the following questions: (i) How do different sustainable management systems affect soil properties (such as SOC, bulk density, water infiltration, and retention), GHG emissions (CO<sub>2</sub>, N<sub>2</sub>O, and CH<sub>4</sub>), and NPSP losses (e.g., runoff, nitrogen, and phosphorus)? (ii) What holistic and innovative conservation practices can enhance nutrient cycling and improve soil properties? (iii) How can process-based models be employed to tailor conservation practices to improve soil and environmental quality? (iv) What are the major effects of land use and climate change on plant production and soil health?

# **Summary of Teaching Experience**

• My primary goal for teaching is to facilitate critical thinking and problem-solving skills through the course curriculum. Teaching is an everlasting learning process which improves every time you share your knowledge with others and learn from them. A good teacher is a good listener. During my professional experience at SDSU, I developed and taught six courses (training over 232 students) that included one undergraduate/graduate course [Environmental Soil Management (Plant Science (PS)-562 and PS-562L)] and five graduate courses [Environmental Soil Physics (PS 743 and PS743L); Soil and Plant Analysis (PS 785 and PS785L), Hydrologic Modeling (PS723 and PS723L); Soils and Environmental Quality (PS791); Ecosystem Modeling (PS 794); and Research Seminar (PS792)]. These courses were highly rated with mean scores of 4.4/5.0 from IDEA (Interactive Distance Education Alliance). Students expressed appreciation for my ability to describe complex concepts with enthusiasm and concern for student success.

# Awards and Recognition

- Achievement Award, USDA-NIFA. 2023. This award underscores the collaborative efforts between the Department of Energy and our organization, enhancing our research portfolio and ensuring that our initiatives stay at the forefront of innovative practices.
- Achievement Award, USDA-NIFA. 2022. This award highlights NIFA's partnership with NSF, which has strengthened NIFA's research portfolio, and ensures that NIFA investments remain at the cutting-edge of innovative research that can be ultimately transferred and adopted within the natural resource, agriculture and food sectors.

- Achievement Award, USDA-NIFA Nutrition Security Team. 2022. This recognition highlights the team's (over 75 members) impactful work in addressing food insecurity, coordinating over \$200 million in investments across key nutrition NIFA programs.
- 2019 Gamma Sigma Delta Research Award, SDSU, Brookings, SD
- 2019 Excellence in Research Award, Department of Agronomy, Horticulture and Plant Science, SDSU, Brookings, SD.
- 2016 Young Scholar Award of the Soil Science Society of America (SSSA)-Soil and Water Conservation and Management Division.
- Early Career Researcher recognition received in a workshop organized by New Phytologist next generation scientists at John Innes Centre, Norwich, UK, 29-30 July 2014.

**Research Grants** (Total awards = \$8,278,979 [\$5,336,528 (PI); \$2,46,0451 Co-PI; \$482,000 as Collaborator]

Principal Investigator

- Back to the Future: Enhancing food security and farm production with integrated croplivestock production systems. USDA-CAP Grant (\$3,985,000). Project Duration: 03-01-2016 through 02-29-2022. *Transferred to Co-PI, Dr. Shaukat Ali on 07-2021*.
- Demonstrating the Impacts of Organic Crop Rotations on Corn Production and Soil Health. NRCS-CIG (\$75,000). Project Duration: 09-2019 through 12-2021. *Transferred to Co-PI, Dr. Peter Sexton on 07-2021*.
- Impacts of manure and inorganic fertilizer on Soil P availability, N losses, Fertility, and Crop Yield in South Dakota. Nutrient Research Education Council, SD (\$80,000). Project Duration: 01-01-2021 through 12-31-2021. *Transferred to Co-PI, Dr. Peter Kovacs on 07-2021*.
- Soil health management practices for alleviating compaction and enhancing water availability and retention. NRCS-CIG (\$75,000). Project Duration: 2020-2023. *Transferred to Co-PI, Dr. Christopher Graham on* 07-2021.
- Demonstrating the Impacts of No-Till and Cover Crops on Soil Moisture and Economics. NRCS-CIG (\$75,000). Project Duration: 2017-2020.
- Demonstrating the Impacts of Crop Diversification on Soil Health and Farm Profitability in South Dakota. NRCS-CIG (\$75,000). Project Duration: 09-2016 through 05-2019.
- Impacts of Cattle Manure and Inorganic Fertilizer on Soil Fertility, Water Quality, and Crop Yield in South Dakota. Nutrient Research Education Council, SD (\$74,998). Project Duration: 2017-2019.
- Integrated plan for drought preparedness and mitigation, and water conservation at the watershed scale. USDA-NIFA (\$227,135). Project Duration: 09-01-2014 through 08-31-2018.
- Agronomic, economic, and environmental performance of non-food oilseed crops in South Dakota. South Dakota Oilseed Initiative Project (\$174,500). 2013-2018.
- Demonstrating the short-term impacts of grazing cover crops on soil health. NRCS-CIG (\$74,895). Project Duration: 2014-2017.
- Evaluation of biomass and bioenergy production, environmental performance and life cycle analysis of Prairie Cordgrass. US. DOT-RITA-Earmark (\$240,000). Project Duration: 10-01-2014 through 06-30-2017.

• Testing the performance of humic substances on soil physical environment and corn yield (\$180,000). Helena Chemicals. 2013-2017.

Co-Principal Investigator on Graduate Student Proposal

• Jasdeep Singh\*, Sandeep Kumar, Peter Sexton, and Anthony Bly. Field evaluation of traffic-induced compaction and its potential impact on soil physical characteristics and crop yield. NCR-SARE, Graduate Grant. (\$14,982). Sept. 2019-Dec.2021.

**Co-Principal Investigator** 

- Soil Health Economics in South Dakota. NRCS/USGS. (\$1,466,459: PI-Tong Wang, SDSU: \$914,995, Dr. Kumar's share). Project Duration: September 20, 2017 through June 21, 2022. *Transferred to Co-PI, Dr. Peter Sexton on 07-2021*.
- Roadmap to Water Resilience-Valuing Water as a Resource for Improved Ag Land Profitability and Reduction of Downstream Flood Risk. J. McMaine, J. Kjaersgaard, D. Kringen, K. Blann, **S. Kumar**, M. Gardezi, D. Koladi, A. Bly, M. Diersen, and L. Fixen. NRCS. (\$887,687). Project Duration: September 01, 2020 through August 31, 2023. *Transferred to PI, Dr. J. McMaine on 07-2021*.
- Learning about the benefits of integrated crop-livestock systems on soil health. SARE Professional Development Program (\$74000: PI-Julie Walker, SDSU). Project Duration: October 1, 2015 through April 30, 2018.
- Evaluating Nutrient Best Management Practices to Conserve Water Quality (PI: Dr. L. Ahiablame; March 1, 2014 through December, 2016: SDWRI USGS 104b-\$32,305).

# Collaborator (grant developed during postdoc)

• Quantifying the spatial location of small-scale land management changes in large watershed using hydrological modeling. USDA-NIFA (\$482,000: PI-Dr. Rattan Lal; *Subcontract to Dr. Sandeep Kumar, SDSU*: \$60,000). Project Duration: 2011-2014.

**Graduate Students** (*Total Graduate Students* = 23; *MS* = 14, and *PhD* = 9 *Chaired/co-chaired*)

Name	Degree	Year	Thesis/Dissertation Title
Sagar Gautam	M.S.	2014	Runoff simulation using APEX from long-term no-till and
			grazed pasture watersheds
Brianna Wegner	M.S.	2015	Impacts of crop residue and cover crops on soil quality
			under a corn-soybean rotation in South Dakota
Saroop Sandhu	M.S.	2016	Restoration of eroded lands with biochar as soil
			amendment in South Dakota
Colin Tobin	M.S.	2016	Demonstrating short-term impacts of grazing cover crops
			on soil health
Ekrem Ozlu	M.S.	2016	Long-term impacts of annual cattle manure and fertilizer
			on soil quality under corn-soybean rotation in eastern
			South Dakota
Shikha Singh	M.S.	2016	Response of soil and water quality to winter manure
			application from small agricultural watersheds in South
			Dakota

Kopila Subedi	M.S.	2017	Impacts of crop residue and cover crops on soil
•			hydrological properties, soil water storage and water use
			efficiency of soybean crop
Hanxiao Feng	M.S.	2017	Soil response to cropping sequences and grazing under
			integrated crop-livestock system
Brant Douville	M.S.	2017	Impacts of integrated crop-livestock system on soil surface
			greenhouse gas emissions at a farm scale in South Dakota
Vishal Seth	M.S.	2018	Quantifying the short-term impacts of cover crops and
			grazing on soil health under an integrated crop-livestock
			system in South Dakota
Atilla Polat	M.S.	2018	Impacts of diverse crop rotations and integrated crop-
			livestock system on soil quality in South Dakota
Asmita Gautam	M.S.	2018	Long-term impacts of manure and inorganic fertilization
(Co-Advisee)			on soil physical, chemical and biological properties
Goutham Thotakuri <sup>1</sup>	M.S.	2022	Soil hydro-physical properties, computed tomography
			measured pore parameters, and soil health indicators as
2			influenced by tillage and crop rotation systems
Vaishnavi Varikuti <sup>2</sup>	M.S.	2022	Response of soil biochemical and physical properties to
			long-Term prairie cordgrass and kura clover intercropping
			system
Liming Lai	Ph.D.	2017	Impacts of landscape position and nitrogen fertilizer on
			soils, carbon and nitrogen leaching, and greenhouse gas
			fluxes from switchgrass production in South Dakota
Abdullah Alhameid	Ph.D.	2020	Response of soil properties to 23-25 years of diverse crop
		2020	rotations and tillage systems in South Dakota, USA
Navdeep Singh	Ph.D.	2020	Soil physical and hydrological properties, and greenhouse
			gas emissions under integrated crop-livestock
Landara Charl		2020	agroecosystems
Jasdeep Singh	Ph.D.	2020	Crop rotations, tillage and cover crops influences on soil
Hanniag Eang	որ ո	2020	Crop rotations and sover groups influences on soil
Halixiao relig	PII.D.	2020	biochamical properties, root characteristics and economic
			performance
Jachan Dhaliwal	Dh D	2021	Soil organic carbon bydro physical properties, pore
Jashali Dhaliwal	FII.D.	2021	structure and greenhouse gas fluxes under integrated gron
			livestock system
Arun Bawa	Ph D	2021	Quantifying the impacts of land use management and
Aluli Dawa	I II.D.	2021	climate change on water resources in Missouri river basin
Teerath Rai	Ph D	2021	Quantifying the impacts of an integrated cron-livestock
(Co-Advisee)	I II.D.	2021	system on plant nutrient accumulation crop yield and
(co navisec)			economic performance
Anuoluwa Sangotayo <sup>3</sup>	Ph D	2023	Soil profile properties and greenhouse gas emissions as
i maora na Sungolayo	1 11,12,	2025	influenced by long-term cattle manure and inorganic
			fertilizer applications under corn-sovbean-spring wheat
			rotation in eastern South Dakota
			rotation in eastern South Dakota

<sup>1,2,3</sup>Transferred to Drs. Sutie Xu, Navreet Mahal, and Péter Kovács due to job transition

#### **Undergraduate Students and Lab Assistants**

Shaun Ludwig (2013), Seth Owens (2013-2015), Brandon Splinter (2013), Pukar Duwadi (2013), Moraita Bryan (REU Student, 2013), Archana Wagle (2014), Yashira Valentin (REU Student, 2014), Danielle Platt (REU Student, 2015), Cody Hall (2016, Academic advisee), Hunter Pulsche (2016, Academic advisee), Jose Gonzalez (REU Student, 2017), Jordan Reiss (2017, Academic advisee), Blake Widvey (2017, Academic advisee), Andrew Schnabel (2017, Academic advisee).

#### **Research Assistants, Postdoctoral Researchers and Visiting Scholars**

- 1. Sangeeta Bansal, Postdoctoral Researcher (November 2020-July 2021)
- 2. Poulamee Chakraborty, Postdoctoral Researcher (January 2021-July 2021)
- 3. Avneet Singh (Spring 2021-Summer 2021), Graduate Research Assistant
- 4. Jemila Chellappa, Research Assistant I (February 2020-April 2021)
- 5. Kavya Laxmisagara Sagar, Research Assistant I (September 2018-December 2020)
- 6. Udayakumar Sekaran, Postdoctoral Researcher (December 2017-May 2020)
- 7. Gandura Abagandura, Postdoctoral Researcher (September 2018-December 2019)
- 8. Hyunho Lee, Research Assistant I (May 2019-October 2019)
- 9. Nagender Butail, Research Assistant I (June 2019-December 2019)
- 10. Denardin Luiz Gustavo, Research Assistant I (September 2018-March 2019)
- 11. Liming Lai, Research Associate I (June 2017-December 2018)
- 12. Shane Snyders, Agricultural Research Tech/Lab Manager (March 2018-January 2019)
- 13. Ning Li, Visiting Scientist (December 2017-December 2018)
- 14. Yunhua Liu, Visiting Scientist (December 2017- December 2018)
- 15. Bishal Kasu, Postdoctoral Researcher (August 2017-May 2018)
- 16. Juan Perez, Postdoctoral Researcher (June 2017-August 2018)
- 17. Lacey Julson, Lab Assistant (February 2017-January 2018)
- 18. Pardeep Kumar, Research Associate I (January 2018-June 2018)
- 19. Kunal Sood, Research Assistant-I (May 2016-December 2016)
- 20. Tess Owens, Temporary Employee (February 2018-August 2018)
- 21. David Ussiri, Postdoctoral Researcher (January 2016-December 2016)
- 22. Ruhollah Taghizadeh, Research Assistant-I (May 2016-August 2016)
- 23. Ram Neupane, Postdoctoral Researcher (2014-2016)
- 24. Amadou Maiga, Fulbright Scholar (2015-2016)
- 25. Mostafa Ibrahim, Visiting Scholar (2014-2015)

26. Eric Mbonimpa, Postdoctoral Researcher (2013-2014)

# **Professional Trainings**

- DSSAT Training at University of Georgia, Athens; May 19-24, 2014.
- DAYCENT Training at National Resource Ecology Laboratory (NREL) at Colorado State University; June 17-21, 2013.

# **Reviewer Activities**

- <u>Peer-reviewed Journals</u>
- Agroforestry Systems, Agronomy Journal, Catena, Geoderma, Global Change Biology-Bioenergy, Hydrological Processes, Journal of Soil Science and Plant Nutrition, Journal of Soil and Water Conservation, Journal of Asian Earth Sciences, Pedosphere, PLOS ONE, Plant Root, Soil Science, Soil and Tillage Research, Soil

Science Society of America Journal, Land Degradation and Development, Scientific Reports.

- Grant Proposals and other activities
  - Served as Review Panel for DOE, 2023 (Reducing Agricultural Carbon Intensity and Protecting Algal Crops)
  - Served as Review Panel for USDA (AFRI Bioenergy, Natural Resources, and Environment (BNRE) Foundational and Applied Science Program: Water Quantity and Quality) (2020)
  - o Served as Review Panel for NSF Food-Energy-Water nexus Track3 -2017
  - Served as Review Panel for USDA-NIFA (Water for Agriculture) 2015
  - California Department of Food and Agriculture
  - Reviewer for Graduate Students' Presentation for Sigma Xi
  - Judge for the 2013 Undergraduate Research Scholarship and Creative Activity Day, SDSU
  - Judge for the 2014 and 2015 Graduate Presentation competition organized by ASA-CSA-SSSA at Long Beach, California (2014), and Minneapolis, MN (2015)

# Service to Professional Organizations

- Chair-Elect for Soil and Water Conservation Division, SSSA (2024)
- Associate Editor for Soil Science Society of America (SSSA) Journal, Division S-6 (Soil and Water Conservation) (2021-2023 and 2023-2025)
- Associate Editor for European Journal of Soil Science (2024).
- Associate Editor for Agronomy Journal (2019-2021)
- Associate Editor for Global Change Biology Bioenergy (2021)
- Associate Editor for SSSA Journal, Division S-1 (Soil Physics and Hydrology) (2017-2019)
- Associate Editor for Journal of Agricultural Science (2020-2021)
- Vice-President of Soil Water Conservation Society South Dakota Chapter, 2020.
- Chair for Soils and Environmental Quality (SEQ) Division, SSSA (2023)
- Chair-Elect for SEQ Division, SSSA (2022)
- Chair for Animal Agriculture and the Environment, American Society of Agronomy (ASA) (2022)
- Vice-Chair for Animal Agriculture and the Environment, ASA (2021)
- Organized Symposium through SEQ Division (Cross Divisional): Impact of Soil Structure on Soil Moisture Dynamics and Agricultural Emissions. ASA/CSSA/SSSA International Annual Meeting, St. Louis, MO. October 29-November 01, 2023.
- Organized Symposium (Cross Divisional with SEQ Division): Honoring Dr. Warren Dick's Contributions to Agricultural System, ASA/CSSA/SSSA International Annual Meeting, St. Louis, MO. October 29-November 01, 2023.
- Organized Symposium (Cross Divisional with SEQ Division): Special Session and Panel Discussion-Carbon Farming; Insights from Soil Management, ASA/CSSA/SSSA 2023.
- Organized SEQ Oral Sessions, and Poster and 5-Minute Rapid Graduate Competition through SEQ Division, ASA/CSSA/SSSA 2023.
- Organized Session (Soil Physics and Hydrology Division): Assessing Soil Pore Structure and Linking it to Microscale. ASA/CSSA/SSSA Annual Meeting Baltimore, MD. Nov 6-9, 2022.
- Member of SSSA (2007-current)

- Member of ASA (2007-current)
- Member of Emil Truog Soil Science Award Committee, SSSA (2015-2016)
- Member (2012-2021) and Chair (2018) of Regional Research Committee NC1178. Hosted this meeting in 2018 at South Dakota State University, Brookings (July 24-25).

**Refereed Publications (142 total;** *citations indices; total citations 6938; h-index 45; i10-index 129; Source: Google Scholar as of February 21, 2025).* <sup>†</sup>*Graduate student and* <sup>‡</sup>*postdoctoral researcher/visiting scientist/research associate* 

- <sup>‡</sup>Bansal, S., Sanyal, D., Graham, C., Gonzalez Hernandez, J. L., and Kumar, S. 2024. Impacts of Stocking Densities on Soil Biochemical and Microbial Properties in a Mixed-Grass Prairie Ecosystem at Two Landscape Positions. Frontiers in Sustainable Food Systems 8:1254973.
- 2. <sup>†</sup>Varikuti, V., <sup>‡</sup>P. Chakraborty, N. Mahal, S. Xu, and **S. Kumar**. 2024. Soil Surface Greenhouse Gas Emissions and Hydro-Physical Properties as Impacted by Prairie Cordgrass Intercropped with Kura Clover. Canadian J. Soil. Sci. (*In Press*).
- 3. <sup>‡</sup>Chakraborty, P., G. Thotakuri, N. Singh, J. Dhaliwal, and **S. Kumar**. 2024. Crop-livestock integration influenced soil profile organic carbon and hydro-physical properties in converted grasslands to row crops. Soil and Tillage Research (*In Press*).
- 4. <sup>†</sup>Thotakuri, G., <sup>‡</sup>P. Chakraborty, <sup>†</sup>J. Singh, S. Xu, P. Kovacs, J. Iqbal, and **S. Kumar**. 2024. X-ray computed tomography–Measured pore characteristics and hydro-physical properties of soil profile as influenced by long-term tillage and rotation systems. CATENA, 237: 107801.
- 5. <sup>†</sup>Sangotayo. A.O., <sup>‡</sup>Chakraborty, P., Xu, S., Kumar, S., Kovacs, P. 2024. Changes in soil profile organic carbon and hydro-physical properties as impacted by long-term manure and inorganic fertilizer rates under a corn-soybean-spring wheat rotation. Soil Science Society of America Journal. <u>https://doi.org/10.1002/saj2.20621</u>.
- <sup>†</sup>Bawa, A., R. MacDowell, <sup>‡</sup>S. Bansal, J. McMaine, P. Sexton, and S. Kumar. 2023. Responses of leached nitrogen concentrations and soil health to winter rye cover crop under no-till corn–soybean rotation in the northern Great Plains. Journal of Environmental Quality, 52(3): 422-433.
- <sup>†</sup>Sangotayo, A.O., <sup>‡</sup>Chakraborty, P., Xu, S., Kumar, S. and Kovacs, P. 2023. Cattle Manure Application for 12-17 Years Enhanced Depth Distribution of X-Ray Computed Tomography-Derived Soil Pore Characteristics. Scientific Reports. doi.org/10.1038/s41598-023-50110-7.
- \*Sangotayo, A.O., J. Chellappa<sup>‡</sup>, U. Sekaran<sup>‡</sup>, S. Bansal<sup>‡</sup>, P. Angmo., P. Jasa, S. Kumar and J. Iqbal. 2023. Long-term conservation and conventional tillage systems impact physical and biochemical soil health indicators in a corn–soybean rotation. Soil Science Society of America Journal, 87(5): 1056-1071.
- 9. <sup>‡</sup>Abagandura, G.O., N.K. Mahal, N.P. Butail<sup>‡</sup>, J. Dhaliwal, S. Gautam, A. Bawa, P. Kovacs, and **S. Kumar**. 2023. Soil labile carbon and nitrogen fractions after eleven years of manure and mineral fertilizer applications. Archives of Agronomy and Soil Science, 69(6): 875-890.
- 10. <sup>‡</sup>Abagandura, G.O., Bansal, S., Karsteter, A. and Kumar, S. 2022. Soil greenhouse gas emissions, organic carbon and crop yield following pinewood biochar and biochar–manure applications at eroded and depositional landscape positions: A field trial in South Dakota, USA. Soil Use and Management, 38(1): 487-502.

- 11. Poudel, S., <sup>‡</sup>S. Bansal, S. Podder, B. Paneru, S. Karki, J. Fike, and **S. Kumar**. 2022. Conversion of open pasture to hardwood silvopasture enhanced soil health of an ultisol. Agroforestry Systems, 96(8): 1237-1247.
- Bagnall, D.K. et al., 2022. Selecting soil hydraulic properties as indicators of soil health: Measurement response to management and site characteristics. Soil Science Society of America Journal, 86(5): 1206-1226.
- <sup>‡</sup>Bansal, S., Chakraborty, P. and Kumar, S. 2022. Crop–livestock integration enhanced soil aggregate-associated carbon and nitrogen, and phospholipid fatty acid. Scientific Reports, 12(1): 2781.
- 14. <sup>‡</sup>Chakraborty, P., Singh, J., Singh, N. and Kumar, S., 2022a. Assessing the influence of cover crop on soil water dynamics using soil moisture measurements and hydrus-1D simulations. Soil Science Society of America Journal, 86(6): 1538-1552.
- 15. <sup>‡</sup>Chakraborty, P., N. Singh, S. Bansal, U. Sekaran, P. Sexton, A. Bly, S.H. Anderson, and S. Kumar. 2022b. Does the duration of no-till implementation influence depth distribution of soil organic carbon, hydro-physical properties, and computed tomography-derived macropore characteristics? Soil and Tillage Research, 222: 105426.
- <sup>†</sup>Dhaliwal, J.K. and Kumar, S. 2022. 3D-visualization and quantification of soil porous structure using X-ray micro-tomography scanning under native pasture and crop-livestock systems. Soil and Tillage Research, 218: 105305.
- 17. <sup>†</sup>Lai, L., Yilmaz, T., **Kumar, S.** Fennell, A. and Hernandez, J.L.G., 2022. Influences of grassland to cropland conversion on select soil properties, microbiome and agricultural emissions. Soil Research, 60(6): 561-579.
- 18. Liptzin, D. et al., 2022. An evaluation of carbon indicators of soil health in long-term agricultural experiments. Soil Biology and Biochemistry, 172: 108708.
- 19. Peng, Y. et al., 2023. Maximizing soil organic carbon stocks under cover cropping: insights from long-term agricultural experiments in North America. Agriculture, Ecosystems & Environment, 356: 108599.
- 20. <sup>†</sup>Rai, T., **Kumar, S.** Nleya, T. and Hoogenboom, G., 2022. Simulating the impact of croplivestock interaction on crop performance using DSSAT. Agrosystems, Geosciences & Environment, 5(4): e20303.
- 21. <sup>†</sup>Rai, T., Kumar, S. Nleya, T., Sexton, P. and Hoogenboom, G., 2022. Simulation of maize and soybean yield using DSSAT under long-term conventional and no-till systems. Soil Research, 60(6): 520-533.
- 22. Rieke, E.L. et al., 2022a. Evaluation of aggregate stability methods for soil health. Geoderma, 428: 116156.
- 23. Rieke, E.L. et al., 2022b. Linking soil microbial community structure to potential carbon mineralization: A continental scale assessment of reduced tillage. Soil Biology and Biochemistry, 168: 108618.
- 24. <sup>†</sup>Singh, J. and **S. Kumar.** 2022. Evaluation of the DNDCv. CAN model for simulating greenhouse gas emissions under crop rotations that include winter cover crops. Soil Research, 60(6): 534-546.
- 25. <sup>†</sup>Rai, T., T. Nleya, **S. Kumar**, P. Sexton, T. Wang, and Y. Fan. 2021. The medium-term impacts of integrated crop-livestock systems on crop yield and economic performance. Ag. J. 113:5207-5221.
- 26. <sup>†</sup>Bawa, A., Senay, G.B. and **Kumar, S.**, 2021. Regional crop water use assessment using Landsat-derived evapotranspiration. Hydrological Processes, 35(1): e14015.

- 27. Hyun HoLee, H.H., S. UnKim, H. RiHan, D. YeongHur, V.N. Owens, S. Kumar, and C.O. Hong. 2021. Mitigation of global warming potential and greenhouse gas intensity in arable soil with green manure as source of nitrogen. Environmental Pollution. 288: 117724.
- 28. Park, H.J., S.U. Kim, K.Y. Jung, S.H. Lee, Y.D. Choi, V.N. Owens, S. Kumar, S.W. Yun, and C.O. Hong. 2021. Cadmium Phytoavailability from 1976 through 2016: Changes in Soil Amended with Phosphate Fertilizer and Compost. Science of the Total Environ. 762:1-11.
- 29. <sup>†</sup>Singh, J., and **S. Kumar**. 2021. Seasonal changes of soil carbon fractions and enzyme activities in response to winter cover crops under long-term rotation and tillage systems. European Journal of Soil Science.72(2):886-899.
- 30. <sup>†</sup>Dhaliwal and S. Kumar. 2021. Hydro-physical Soil Properties as Influenced by Short and Long-Term Integrated Crop-Livestock Agroecosystems. Soil. Sci Soc A. J. 85(3):789-799.
- 31. <sup>†</sup>Bhattarai, D., G. Abagandura, T. Nleya, and S. Kumar. 2021. Responses of soil surface greenhouse gas emissions to nitrogen and sulfur fertilizer rates to *Brassica carinata* grown as a bio-jet fuel. Global Change Biology Bioenergy. 13(4):627-639.
- 32. <sup>†</sup>Singh, N., **S. Kumar**, R.P. Udawatta, S.H. Anderson, L.W. de Jonge and Sheela Katuwal. 2021. Grasslands conversion to croplands impacted soil pore parameters measured using x-ray computed tomography. Soil Sci Soc. Am. J. 85(1):73-84.
- 33. <sup>†</sup>Singh, N., S. Kumar, R.P. Udawatta, S.H. Anderson, L.W. de Jonge and Sheela Katuwal. 2021. X-ray micro-computed tomography characterized soil pore network as influenced by long-term application of manure and fertilizer. Geoderma. doi.org/10.1016/j.geoderma.2020.114872.
- 34. <sup>‡</sup>Sekaran, U., S. Kumar, and J. Gonzalez. 2021. Integration of crop and livestock enhanced soil biochemical properties and microbial community structure. Geoderma. doi.org/10.1016/j.geoderma.2020.114686
- 35. <sup>‡</sup>Sekaran, U., K.L. Sagar, and S. Kumar. 2020. Soil aggregates, aggregate-associated carbon and nitrogen, and water retention as influenced by short and long-term no-till systems. Soil Tillage Research. doi.org/10.1016/j.still.2020.104885.
- 36. <sup>†</sup>Singh, J., and S. Kumar. 2021. Responses of soil microbial community structure and greenhouse gas fluxes to crop rotations that include winter cover crops. Geoderma. doi.org/10.1016/j.geoderma.2020.114872.
- 37. Faust, D.R., M.A. Liebig, D. Toledo, D.W. Archer, S.L. Kronberg, J.R. Hendrickson, A. Bawa, and S. Kumar. 2020. Water quality of an integrated crop livestock system in the northern Great Plains. Agrosystems, Geosciences & Environment.3(1):e20129.261917
- 38. Sharma, S., P. Singh, and **S. Kumar**. 2020. Responses of soil carbon pools, enzymatic activity and crop yields to nitrogen and straw incorporation in a rice-wheat cropping system in north-western India. Frontiers in Sustainable Food Systems. 4:1-19.
- <sup>†</sup>Feng, H.X., G.O. Abagandura, S. Senturklu, D. Landblom, L. Lai, K. Ringwall, and S. Kumar. 2020. Soil quality indicators as influenced by five-year diversified and monoculture cropping systems. J. Agricultural Science. 158(7):594-605.
- 40. <sup>†</sup>Bhattarai, D. **S. Kumar**, and T. Nleya. 2020. Nitrogen and sulfur fertilizers effects on growth and yield of Brassica carinata in South Dakota. Ag. J. 113:1945-1960.
- 41. <sup>†</sup>Gautam, A., U. Sekaran, J. Guzman, P. Kovacs, J. Gonzalez, and **S. Kumar**. 2020. Responses of Soil Microbial Community Structure and Enzymatic Activities to Long-Term Application of Mineral Fertilizer and Beef Manure. Environmental and Sustainability Indicators.8:1-12.
- 42. Shrestha, P., R.A. Karim, H.L. Sieverding, D.W. Archer, **S. Kumar**, T. Nleya, C.J. Graham, and J.J. Stone. 2020. Life Cycle Assessment of wheat production and wheat-based crop rotations. J. Environ. Qual. 49(6):1515-1529.

- 43. <sup>†</sup>Lai, L., and **S. Kumar**. 2020. A global meta-analysis of livestock grazing impacts on soil properties. PLOS One. doi.org/10.1371/journal.pone.0236638.
- 44. <sup>†</sup>Sekaran, U., S. Sandhu, Y. Qiu, **S. Kumar**, and J. Gonzalez. 2020. Biochar and manure addition influenced soil microbial community structure and enzymatic activities at eroded and depositional landscape positions. Land Degradation and Development. 31:894-908.
- 45. <sup>†</sup>Singh, J., N. Singh, and **S. Kumar**. 2020. X-ray CT-Measured Soil Pore Parameters as Influenced by Crop Rotations and Cover Crops. Soil Sci. Soc. Am. J. 84(4):1267-1279.
- 46. <sup>†</sup>Abagandura, G. O., Sekaran, U., Singh, S., Singh, J., Ibrahim, M. A., Subramanian, S., Owens, V. N., and Kumar, S. 2020. Intercropping kura clover with prairie cordgrass mitigates soil greenhouse gas fluxes. Scientific Reports 10:1-11.
- 47. <sup>‡</sup>Sekaran, U., Loya, J. R., Abagandura, G. O., Subramanian, S., Owens, V., and Kumar, S. 2020a. Intercropping of kura clover (*Trifolium ambiguum* M. Bieb) with prairie cordgrass (*Spartina pectinata* link.) enhanced soil biochemical activities and microbial community structure. Applied Soil Ecology 147, 103427.
- 48. <sup>‡</sup>Sekaran, U., Sagar, K. L., Denardin, L. G. D. O., Singh, J., Singh, N., Abagandura, G. O., Kumar, S., Farmaha, B. S., Bly, A., and Martins, A. P. 2020. Responses of soil biochemical properties and microbial community structure to short and long-term no-till systems. European Journal of Soil Science. 71(6):1018-1033.
- 49. <sup>†</sup>Singh, N., G. Abagandura, and **S. Kumar**. 2020. Short-term grazing of cover crops and maize residue impacts on soil greenhouse gas fluxes in two Mollisols. J. Environ. Qual. DOI:10.1002/jeq2.20063.
- 50. Sieverding, H., E. Kebreab, J.M. Johnson, H. Xu, M. Wang, S.J.D. Grosso, S. Bruggeman, C.E. Stewart, S. Westhoff, J. Ristau, S. Kumar, and J.J. Stone. 2020. A life cycle analysis (LCA) primer for the agricultural community. Agron. J. 112(5):3788-3807.
- 51. <sup>†</sup>Tobin, C., S. Singh, S. Kumar, T. Wang, and Sexton, P. 2020. Demonstrating Short-Term Impacts of Grazing and Cover Crops on Soil Health and Economic Benefits in an Integrated Crop-Livestock System in South Dakota. Open Journal of Soil Science 20(10):109-136.
- 52. <sup>‡</sup>Neupane, R.P, and **S. Kumar**. 2020. Water 222Rn for evaluating the variation in groundwater inflows to discharge of the Big Sioux River in different flow periods. Sustainable Water Resources Management. 6(1):13.
- 53. <sup>†</sup>Ozlu, E., S. Kumar, and Arriaga, F. J. 2019. Responses of Long-term Cattle Manure on Soil Physical and Hydraulic Properties under a Corn-Soybean Rotation of Two Locations in Eastern South Dakota. SSSAJ. DOI: 10.2136/sssaj2019.03.0077.
- 54. Martins, A.P., L.G. de Oliveira Denardin, T. Tiecher, J.B. Moraes Borin, W. da Silva Schaidhauer, I. Anghinoni, P.C. de Faccio Carvalho, and S. Kumar. 2019. Nine-year impact of grazing management on soil acidity and aluminum speciation and fractionation in a longterm no-till integrated crop-livestock system in the subtropics. Geoderma. DOI:10.1016/j.geoderma.2019.113986.
- 55. <sup>†</sup>Alhameid, A., J. Singh, U. Sekaran, E. Ozlu, **S. Kumar**, and S. Singh. 2019. Crop rotational diversity impacts soil physical and hydrological properties under long-term no- and conventional-till soils. Soils Research. 58(1):84-94.
- 56. <sup>†</sup>Sandhu, S., U. Sekaran, E. Ozlu, N.O. Hoilett, and S.Kumar. 2019. Short-term impacts of biochar and manure application on soil labile carbon fractions, enzyme activity, and microbial community structure. Biochar. 1(3): 271-282.
- 57. <sup>†</sup>Alhameid, A., J. Singh, U. Sekaran, **S. Kumar**, and S. Singh. 2019. Soil biological health: influence of crop rotational diversity and tillage on soil microbial properties. Soil Sci. Soc Am. J. DOI:10.2136/sssaj2018.03.0125.

- 58. <sup>‡</sup>Taghizadeh-Mehrjardi, R., Bawa, A., S.Kumar, Zeraatpisheh, M., Amirian-Chakan, A., and Akbarzadeh, A. 2019. Soil Erosion Spatial Prediction using Digital Soil Mapping and RUSLE methods for Big Sioux River Watershed. Soil Systems. 3(3):43.
- 59. <sup>†</sup>Ozlu, E., S. Singh, **S. Kumar**, and Arriaga, F. J. 2019. Soil health indicators impacted by long-term manure and inorganic fertilizer of corn-soybean rotation in South Dakota. Scientific Reports. 9(1):1-1.
- 60. <sup>†</sup>Pérez-Gutiérrez, J., and **S. Kumar**. 2019. Simulating the influence of integrated croplivestock systems on water yield at watershed scale. J. Environ. Manage. 239:385-394.
- 61. <sup>‡</sup>Abagandura, G., S. Şenturklu, N. Singh, S. Kumar, D.G. Landblom, and K. Ringwall. 2019. Impacts of crop rotational diversity and grazing under integrated crop-livestock system on soil surface greenhouse gas fluxes. Plos One 14(5):1-18.
- 62. <sup>‡</sup>Abagandura, G., R. Chintala, S. Singh, T. Schumacher, and **S. Kumar**. 2019. Effects of Biochar and Manure Applications on Soil CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O Fluxes from Two Different Soils. JEQ. 48(6):1664-1674.
- 63. <sup>†</sup>Li, N., P. Kumar, L. Lai, G.O. Abagandura, S. Kumar, T. Nleya, H.L. Sieverding, J.J. Stone, and W. Gibbons. 2019. Response of Soil Greenhouse Gas Fluxes and Soil Properties to Nitrogen Fertilizer Rates Under Camelina and Carinata Nonfood Oilseed Crops. Bioenergy Research. 12(3):524-535.
- 64. <sup>‡</sup>Kumar, P., L. Lai, M.L. Battaglia, **S. Kumar**, V. Owens, J. Fike, J. Galbraith, C.O. Hong, R. Faris, R. Crawford, J. Crawford, J. Hansen, H. Mayton., and D. Viands. 2019. Impacts of nitrogen fertilization rate and landscape position on select soil properties in switchgrass field at four sites in the USA. CATENA. 180:183-193.
- 65. S. Kumar, H. Sieverding, L. Lai, N. Thandiwe, B. Wienhold, D. Redfearn, D. Archer, D. Ussiri, D. Faust, D. Landblom, E. Grings, J.J. Stone, J. Jacquet, K. Pokharel, M. Liebig, M. Schmer, P. Sexton, R. Mitchell, S. Smalley, S. Osborne, S. Ali, S. Şentürklü, S. Sehgal, V. Owens, and V. Jin. 2019. Facilitating crop-livestock reintegration in the Northern Great Plains. Ag. J. 111(5):2141-2156.
- 66. S. Kumar, L. Lai, P. Kumar, Y.M. Valentín Feliciano, M.L. Battaglia, C.O. Hong, V. Owens, J. Fike, R. Farris, and J. Galbraith. 2019. Impacts of nitrogen rate and landscape position on soils and switchgrass (*Panicum virgatum* L.) root growth parameters. Ag. J. 111(3):1046-1059.
- 67. Rahmati, O., Kornejady, A., Samadi, M., Deo, R.C., Conoscenti, C., Lombardo, L., Dayal, K., <sup>‡</sup>Taghizadeh-Mehrjardi, R., Pourghasemi, H.R., **S. Kumar**, and Bui, D.T. 2019. PMT: New analytical framework for automated evaluation of geo-environmental modelling approaches. Science of The Total Environment. 664:296-311.
- 68. Thies, S., S. Bruggeman, S. Clay, U. Mishra, S. Kumar, G. Hatfield, and D. Clay. 2019. Midmorning point sampling may not accurately represent nitrous oxide emissions following fertilizer applications. Soil Science Society of Am. J. 83(2):339-347.
- 69. Wang, T. J. Jacquet, <sup>†</sup>B. Kasu, and **S. Kumar**. 2019. Soil conservation practices adoption in Northern Great Plains: Economic vs. stewardship motivations. Journal of Agricultural and Resource Economics. 44(1835-2019-1561):404-421.
- <sup>‡</sup>Maiga, A., Alhameid, A., Singh, S., Polat, A., Singh, J., S. Kumar, and Osborne, S. 2019. Responses of soil organic carbon, aggregate stability, carbon and nitrogen fractions to 15 and 24 years of no-till diversified crop rotations. Soil Research. DOI:10.1071/SR18068.
- 71. <sup>‡</sup>Sekaran, U., C. McCoy, S. Kumar, and S. Subramanian. 2019. Soil microbial community structure and enzymatic activity responses to nitrogen management and landscape positions in switchgrass (*Panicum virgatum* L.). GCB Bioenergy.11(7):836-851.

- 72. <sup>†</sup>Singh, N., J. Dhaliwal, U. Sekaran, and **S. Kumar**. 2019. Soil hydrological properties as influenced by long-term nitrogen application and landscape positions under switchgrass seeded to a marginal cropland. GCB Bioenergy. DOI: 10.1111/gcbb.12611
- 73. Kim, S.U., C. Ruangcharus, S. Kumar, E.S. Jung, and C.O. Hong. 2019. Nitrous Oxide Emission from Upland Soil Amended with Different Animal Manures. Applied Biological Chemistry. DOI:10.1186/s13765-019-0409-5.
- 74. Alberti, P. S.L. Osborne, F. Mathew, S. Ali, H. Sieverding, S. Kumar, and T. Nleya. 2019. Nitrogen requirements of Ethiopian mustard (*Brassica carinata*) for biofuel feedstock in South Dakota. Ag. J. 111(3):1304-1311.
- 75. <sup>†</sup>Wegner, B.R., S.L. Osborne, R.M. Lehman, and S. Kumar. 2018. Seven Year Impact of Cover Crops on Soil Health When Corn Residue Is Removed. BioEnergy Research. 11 (2):239-248.
- 76. <sup>†</sup>Chalise, K.S., Singh, S., Wegner, B. R., Kumar, S., Pérez-Gutiérrez, J. D., Osborne, S. L., Nleya, T., Guzman, J., and Rohila, J.S. 2018. Cover Crops and Returning Residue Impact on Soil Organic Carbon, Bulk Density, Penetration Resistance, Water Retention, Infiltration, and Soybean Yield. Agronomy Journal.110 (6):1-10.
- 77. <sup>†</sup>Wegner, B.R., S.L. K.S. Chalise, S. Singh, L. Lai, G.O. Abagandura, S. Kumar, S. Osborne, R.M. Lehman, and S. Jagadamma. 2018. Response of Soil Surface Greenhouse Gas Fluxes to Crop Residue Removal and Cover Crops under a Corn–Soybean Rotation. J. Environ. Qual. DOI:10.2134/jeq2018.03.0093.
- 78. <sup>†</sup>Lai, L., S. Kumar, Osborne, S., and Owens, V.N. 2018. Switchgrass impact on selected soil parameters, including soil organic carbon, within six years of establishment. CATENA 163: 288-296.
- 79. <sup>†</sup>Ozlu, E., and S. Kumar. 2018. Response of Soil Organic Carbon, pH, Electrical Conductivity, and Water Stable Aggregates to Long-Term Annual Manure and Inorganic Fertilizer. Soil Science Society of Am. J. 82(5):1243-1251.
- 80. <sup>†</sup>Ozlu, E., and **S. Kumar**. 2018. Response of surface GHG fluxes to long-term manure and inorganic fertilizer application in corn and soybean rotation. Science of The Total Environment. 626:817-825.
- 81. <sup>†</sup>Lai, L., S. Kumar, Folle, S. M. and Owens, V. N. 2018. Predicting soils and environmental impacts associated with switchgrass for bioenergy production: a DAYCENT modeling approach. GCB Bioenergy, 10: 287-302. DOI:10.1111/gcbb.12490.
- 82. Fergen, J.T. Jacquet, J.B., <sup>†</sup>Kasu, B., Barnett, M. Junod, A. and **S. Kumar**. 2018. Out where the West Begins: Measuring Land Use preferences and Environmental Attitudes across the Great Plains Transition Zone. Journal of Great Plains Research.28(2):155-172.
- 83. Gautam, S., Mbonimpa, E., S. Kumar, and Bonta, J. 2018. Simulating Runoff from Small Grazed Pasture Watersheds Located at North Appalachian Experimental Watershed in Ohio. Rangeland Ecology & Management.71(3): 363-369.
- 84. <sup>†</sup>Lai, L., Oh Hong, C., S. Kumar, Osborne, S. L., Lehman, R. M. and Owens, V. N. 2018. Soil nitrogen dynamics in switchgrass seeded to a marginal cropland in South Dakota. GCB Bioenergy.10(1):28-38.
- Faust, D.R., S. Kumar, D.W. Archer, J.R. Hendrickson, S.L. Kronberg, and M.A. Liebig. 2017. Integrated Crop-Livestock Systems and Water Quality in the Northern Great Plains: Review of Current Practices and Future Research Needs. JEQ. DOI:10.2134/jeq2017.08.0306.
- 86. <sup>†</sup>Singh, S., N. Brandenburg, L. Ahiablame, A. Gonzalez, J. Kjaersgaard, T.P. Trooien, and S. Kumar. 2017. Response of Winter Manure Application on Surface Water Quantity and Quality from Small Watersheds in South Dakota. Water, Air and Soil Pollution. 228(10):389.

- 87. <sup>‡</sup>Neupane, R.P., J.F. Adamowski, J.D. White, and **S. Kumar**. 2017. Future streamflow simulation in a snow-dominated Rocky Mountain headwater catchment. Hydrology Research.49(4):1172-1190
- 88. <sup>‡</sup>Neupane, R., <sup>†</sup>S. Mehan, and S. Kumar. 2017. Use of geochemical tracers for estimating groundwater influxes to discharge of the Big Sioux River, eastern South Dakota. Hydrogeology Journal. 25(6):1647-1660.
- 89. Chakan, A., <sup>‡</sup>R. Taghizadeh-Mehrjardi, R. Kerry, **S. Kumar**, S. Khordehbin, and S. Yusefi Khanghah. 2017. Spatial 3D distribution of soil organic carbon under different land use types. Environmental Monitoring and Assessment. 189(3):131.
- 90. Sandhu, S., <sup>‡</sup>D. Ussiri, **S. Kumar**, S. Papiernik, <sup>‡</sup>R. Chintala, D. Malo and T. Schumacher. 2017. Analyzing the impacts of three types of biochar on soil carbon fractions and physiochemical properties in a corn-soybean rotation. Chemosphere 184:473-481.
- 91. Taghizadeh-Mehrjardi, R., R. Neupane, <sup>‡</sup>K. Sood and **S. Kumar**. 2017. Artificial bee colony feature selection algorithm combined with machine learning algorithms to predict vertical and lateral distribution of soil organic matter in South Dakota, USA. Carbon Management 8(3):1-15.
- 92. <sup>†</sup>Sandhu, S., and S. Kumar. 2017. Impact of Three Types of Biochar on Hydrological Properties of Eroded and Depositional Landscape Positions. Soil Science Society of Am. J. DOI:10.2136/sssaj2016.07.0230.
- 93. Ibrahim, M., C. Oh, <sup>†</sup>S. Singh, **S. Kumar**, S. Osborne, and V. Owens. 2017. Switchgrass biomass quality as affected by nitrogen rates, harvest time, and storage. Agronomy Journal. 109 (1):1-11.
- 94. <sup>†</sup>Alhameid, A., <sup>‡</sup>M. Ibrahim, S. Kumar, P. Sexton and T. Schumacher. 2017. Soil Organic Carbon Changes Impacted by Crop Rotational Diversity under No-Till Farming in South Dakota, USA. Soil Science Society of Am. J. DOI: 10.2136/sssaj2016.04.0121.
- 95. Mehan S, R.P., <sup>‡</sup>Neupane, and S. Kumar. 2017. Coupling of SUFI 2 and SWAT for Improving the Simulation of Streamflow in an Agricultural Watershed of South Dakota. Hydrology Current Research.8(3). DOI:10.4172/2157-7587.1000280.
- 96. Mehan, S., N. Kanan, <sup>‡</sup>R. Neupane, R. McDaniel, and S. Kumar. 2016. Climate Change Impacts on the Hydrological Processes of a Small Agricultural Watershed. Climate. 4, 56:1-22.
- Adhikari, P., S.H. Anderson, R.P. Udawatta, and S. Kumar. 2016. Analysis of CT-Measured Pore Characteristics of Porous Media Relative to Physical Properties. Procedia Computer Science. 95:442-449.
- 98. Nagaraja, M.S., A.K. Bhardwaj, G.V.P. Reddy, C.A. Srinivasamurthy, **S. Kumar**. 2016. Estimations of soil fertility in physically degraded agricultural soils through selective accounting of fine earth and gravel fractions. Solid Earth.7:897-903.
- 99. <sup>†</sup>Lai, L., S. Kumar, <sup>‡</sup>E. Mbonimpa, C. Oh, V. Owens, and <sup>‡</sup>R. Neupane. 2016. Evaluating the impacts of landscape positions and nitrogen rates on dissolved organic carbon under switchgrass land seeded on marginally yielding cropland. Journal of Environmental Management.171:113-120.
- 100. <sup>†</sup>Lai, L., S. Kumar, R. Chintala, V. Owens, R. Rafique, D. Clay, A. Nizami, S.S. Lee, and J. Schumacher. 2016. Modeling the impacts of temperature and precipitation changes on soil CO<sub>2</sub> fluxes from a switchgrass stand recently converted from cropland. Journal of Environmental Science.43:15-25.

- 101. <sup>‡</sup>Mbonimpa, E., S. Kumar, V. Owens, R. Chintala, H. Sieverding, and J. Stone. 2016. Nitrogen rate and landscape impacts on life cycle energy use and emissions from switchgrass-derived ethanol. Global Change Biology Bioenergy. 8:750-763.
- 102. Nizami, A.S., O.K.M. Oud, M. Rehan, A.M.O. El-Maghraby, J. Gardy, A. Hassanpour, and **S. Kumar**, I.M.I. Ismail. 2016. The potential of Saudi Arabian natural zeolites in energy recovery Technologies. Energy.108:162-171.
- 103. <sup>‡</sup>Neupane, R., and S. Kumar. 2015. Estimating the effects of potential climate and land use changes on hydrologic processes of a large-scale agriculture dominated watershed. Journal of Hydrology.529:418-429.
- 104. <sup>‡</sup>Ibrahim, M.A., <sup>†</sup>A.H. Alhameid, S. Kumar, R. Chintala, P. Sexton, D.D. Malo, and T.E. Schumacher. 2015. Long-term tillage and crop rotation impacts on a northern Great Plains mollisol. Advances in Crop Science and Technology.3(3):1-6.
- 105. <sup>‡</sup>Mbonimpa, E., <sup>†</sup>S. Gautam, <sup>†</sup>L. Lai, **S. Kumar**, J. Bonta, and S. Wang. 2015. Combined PEST and Trial–Error approach to improve APEX calibration. Computers and Electronics in Agriculture.114:296-303.
- 106. <sup>†</sup>Wegner, B., S. Kumar, S.L. Osborne, T.E. Schumacher, I.E. Vahyala, and A. Eynard. 2015. Soil response to corn residue removal and cover crops in eastern South Dakota. Soil Science Society of America Journal.79(4):1179-1187.
- 107. **S. Kumar**.2015. Estimating spatial distribution of soil organic carbon for Midwestern USA using historical database. Chemosphere.127:49-57.
- 108. Lee, S.S., H. S. Shah, Y. M. Awad, **S. Kumar**, and Y. S. Ok. 2015. Synergy effects of biochar and polyacrylamide on plants growth and soil erosion control. Environmental Earth Sciences. 74:2463-2473.
- 109. Rafique, R., **S. Kumar**, Y. Lou, G. Kiely, and G. Asrar. 2015. An algorithmic calibration approach to identify globally optimal parameters for constraining the DayCent model. Ecological Modelling.297:196-200.
- 110. <sup>‡</sup>Mbonimpa, E., C.O. Hong, V. Owens, R.M. Lehman, S.L. Osborne, T.E. Schumacher, D.E. Clay, and S. Kumar. 2015. Nitrogen fertilizer and landscape position impacts on CO2 and CH4 fluxes from a landscape seeded to switchgrass. Global Change Biology Bioenergy. 7:836-849.
- 111. <sup>†</sup>Gautam, S., <sup>‡</sup>E. Mbonimpa, S. Kumar, R. Lal, and J. Bonta. 2014. Agricultural Policy Environmental eXtender model simulation of climate change impacts on runoff from a small no-till watershed. Journal of Soil and Water Conservation.70:101-109.
- 112. **Kumar, S.,** T. Nakajima, A. Kadono, R. Lal, and N. Fausey. 2014. Long-term tillage and drainage influences on greenhouse gas fluxes from a poorly-drained soil of central Ohio. Journal of Soil and Water Conservation.69(6):553-563.
- 113. <sup>‡</sup>Chintala, R., T.E. Schumacher, S. Kumar, D.D. Malo, J. Rice, B. Bleakley, G. Chilom, S. Papiernik, J.L. Julson, D. Clay, and Z.R. Gu. 2014. Molecular characterization of biochar materials and their influence on microbiological properties of soil. Journal of Hazardous Materials.279:244-256.
- 114. Rafique, R., **S. Kumar**, Y. Luo, X. Xu, D. Li, W. Zhang, and Z. Asam. 2014. Estimation of greenhouse gases (N<sub>2</sub>O, CH<sub>4</sub> and CO<sub>2</sub>) from no-till cropland under increased temperature and altered precipitation regime: A DAYCENT model approach. Global and Planetary Change.118:106-114.
- 115. <sup>‡</sup>Chintala, R., G. Djira, M. Devkota, R. Prasad, and S. Kumar. 2014. Modeling the effect of temperature and precipitation on crop residue potential for the North Central Region of the United States. Agricultural Research.3(2):148-154.

- 116. S. Kumar, T. Nakajima, E. Mbonimpa, U.R. Somireddy, A. Kadono, R. Lal, R. Chintala, R. Rafique, and N. Fausey. 2014. Long-term tillage and drainage influences on soil organic carbon dynamics, aggregate stability, and corn yield. Journal of Soil and Plant Nutrition.60:108-118.
- 117. <sup>‡</sup>Chintala, R., R.K. Owen, T.E. Schumacher, K.A. Spokas, L.M. McDonald, S. Kumar, D.E. Clay, D.D. Malo, and B. Bleakley. 2014. Denitrification kinetics in biomass and biochar amended soils of different landscape positions. Environment Science Pollution Research:22(7):5152-5163.
- 118. **S. Kumar**. 2013.Soil organic carbon mapping at field and regional scales using GIS and remote sensing applications. Advances of Crop and Science Technology. DOI:10.4172/2329-8863.1000e105.
- S. Kumar., R. Lal, D. Liu, and R. Rafique. 2013. Mapping the spatial distribution of organic carbon density for the soils of Ohio, USA. Journal of Geographical Sciences. 23(2):280-296.
- Lewis, C., R. Rafique, N. Foley, P. Leahy, G. Morgan, J. Albertson, S. Kumar, and G. Kiely. 2013. Seasonal exports of phosphorus from intensively fertilized nested grassland catchment. Journal of Environmental Sciences.25:1847-1857.
- 121. Chintala, R., J. Mollinedo, T.E. Schumacher, D.D. Malo, S. Papiernik, D.E. Clay, S. Kumar, and D.W. Gulbrandson. 2013. Nitrate sorption and desorption by biochars produced from microwave pyrolysis. Microporous and Mesoporous Materials.179:250-257.
- 122. **S. Kumar**, A. Kadono, R. Lal, and W. Dick. 2013. Responses to "Comments on 'long-term no-till impacts on organic carbon and properties of two contrasting soils and corn yields in Ohio". Soil Science Society of America Journal.77:694–695
- 123. **S. Kumar**, R. Lal, and D. Liu. 2012. A geographically weighted regression kriging approach for mapping soil organic carbon stock. Geoderma.189-190:627–634.
- 124. **S. Kumar**, A. Kadono, R. Lal, and W. Dick. 2012. Long-term no-till impacts on organic carbon and properties of two contrasting soils and corn yields in Ohio. Soil Science Society of America Journal.76:1798–1809.
- 125. **S. Kumar**, R. Lal, and C.D. Lloyd. 2012. Assessing spatial variability in soil characteristics with geographically weighted principal components analysis. Computational Geosciences.16:827-835.
- 126. **S. Kumar**, A. Kadono, R. Lal, and W. Dick. 2012. Long-Term tillage and crop rotations for 47–49 years influences hydrological properties of two soils in Ohio. Soil Science Society of America Journal.76:2195-2207.
- 127. **S. Kumar**, P.K. Sharma, S.H. Anderson, and K. Saroch. 2012. Tillage and rice-wheat cropping sequence influences on some soil physical properties and wheat yield under water deficit conditions. Open Journal of Soil Science.2(02):71.
- 128. **S. Kumar**, S.H. Anderson, R.P. Udawatta, and R.L. Kallenbach. 2012. Water infiltration influenced by agroforestry and grass buffers for a grazed pasture system. Agroforestry Systems.84:325-335.
- 129. **S. Kumar**, and R. Lal. 2011. Mapping the organic carbon stocks of surface soils using local spatial interpolator. Journal of Environmental Monitoring.13(11):3128-3135.
- 130. **S. Kumar**, R.P. Udawatta, S.H. Anderson, A. Mudgal. 2011. APEX model simulation of runoff and sediment losses for grazed pasture watersheds with agroforestry buffers. Agroforestry Systems.83:51-62.
- 131. **S. Kumar**, S.H. Anderson, and R.P. Udawatta. 2010. Agroforestry and grass buffer influences on macropores measured by computed tomography under grazed pasture systems. 2010. Soil Science Society of America Journal.74:203-212.

- 132. **S. Kumar**, S.H. Anderson, R.P. Udawatta, and C.J. Gantzer. 2010. CT-measured macropores as affected by agroforestry and grass buffers for grazed pasture systems. Agroforest Systems.79:59-65.
- 133. **S. Kumar**, R.P. Udawatta and S.H. Anderson. 2010. Root length density and carbon content influenced by agroforestry and grass buffers under grazed pasture systems in a Hapludalf. Agroforestry Systems 80:85-96.
- 134. **S. Kumar**, S.H. Anderson, L.G. Bricknell, R.P. Udawatta, and C.J. Gantzer. 2008. Soil hydraulic properties influenced by agroforestry and grass buffers for grazed pasture systems. Journal of Soil and Water Conservation 63:224-232.

#### **Conference Proceedings and Other Publications**

- 135. Wang, T. Kasu, B., J. Jacquet, and **S. Kumar**. 2019. Tailoring Extension Effort for Promotion of Diversified Crop Rotation System. Journal of Extension (*In Press*).
- 136. Kumar, S., S.H. Anderson, R.P. Udawatta, and R.L. Kallenbach. Agroforestry and grass buffer influences on water infiltration for a grazed pasture system. *In* M.A. Gold and M.M. Hall (eds.). 2009. Agroforestry Comes of Age: Putting Science into Practice. Proceedings, 11th North American Agroforestry Conference. 191-200.
- 137. **Kumar, S.,** S.H. Anderson, and R.P. Udawatta. CT-measured macropores as affected by agroforestry and grass buffers for grazed pasture systems. *In* M.A. Gold and M.M. Hall (eds.). 2009. Agroforestry Comes of Age: Putting Science into Practice. Proceedings, 11th North American Agroforestry Conference. 163-172.
- 138. **Kumar, S.,** S.H. Anderson, L.G. Bricknell, R.P. Udawatta, and C.J. Gantzer. 2008. Benefits of agroforestry and grass buffers in grazed pasture systems. Journal of Soil and Water Conservation:63:135A.

#### **Book Chapters**

- 139. **Kumar, S.**, Chakraborty, P. and Anderson, S. 2022. X-ray Computed Tomography for Studying Solute Transport in Soils, X-ray Imaging of the Soil Porous Architecture. Springer, pp. 99-112.
- 140. Sekaran, U. and S. Kumar. 2021. Responses of soil carbon storage, compaction, and biological properties under no-till system compared to conventional till system. *In*. S. Jayaraman (Ed). Conservation Agriculture: A Sustainable Approach for Soil Health and Food Security. Springer Nature.
- 141. Sekaran, U., M. Ali, and **S. Kumar**. 2021. Soil health and Soil Water. *In*: H. Blanco, S. Kumar and S. Anderson (eds). Soil Management and Hydrology under Fluctuating Climates. CSIRO Publishing.
- 142. Alhameid, A., C. Tobin, A. Maiga, S. Kumar, S. Osborne, and T. Schumacher. 2017. Intensified agroecosystem and changes in soil carbon dynamics. p. 195-214. *In* M.M. Al-Kaisi and B. Lowery (ed). Soil Health and Intensification of Agroecosystems. Academic Press.
- 143. **Kumar, S.**, R. Chintala, J. Rohila, T. Schumacher, A. Goyal, and E. Mbonimpa. 2015. Soil and crop management for sustainable agriculture. *In*: Lichtfouse E., Goyal A. (eds) Sustainable Agriculture Reviews. 16. Springer, Cham.

#### Books

1. Blanco, H., **S. Kumar** and S. Anderson (eds). 2022. Soil Management and Hydrology under Fluctuating Climates. CSIRO Publishing.

2. Sharma, P.K. and **S. Kumar**. 2023. Soil Physical Environment and Plant Growth: Evaluation and Management. Springer Publishing.

# **News Articles in Professional Magazines**

- 1. Soil Properties and Crop–Livestock Integration. Crops & Soils 54, 24-27. https://doi.org/10.1002/crso.20151
- Bringing Cattle onto Cropland in the Northern Great Plains: Can Grazing Cover Crops with Cattle Benefit Producers and the Soil? CSA News 66, 3-9. <u>https://doi.org/10.1002/csan.20491</u>

#### Select Presentations at National and International Professional Meetings

- 1. Kumar, S. and J. Dobrowolski. 2022. Soil Health, and Water Quality and Quantity Programs of USDA-NIFA. ASA-CSSA-SSSA annual meeting, Baltimore, MD.
- Singh, N., Dhaliwal, J.K., Singh, J., Sekaran, U. and Kumar, S. 2020. Applying computed tomography scanning to study soil porosity for water conservation. Oral (Virtual) Presentation at the SWCS 75th International Annual Conference at Des Moines, IA, July 26-29, 2020.
- 3. Dhaliwal, J.K., Singh, N., Singh, J., Bawa, A., Sekaran, U., and Kumar, S. 2020. Soil physical properties and organic carbon in response to integrated crop-livestock system in South Dakota. Oral (Virtual) Presentation at 75th SWCS International Annual Conference at Des Moines, IA, July 26-29, 2020.
- 4. Singh, J., U. Sekaran, N. Singh, J.K. Dhaliwal, S. Kumar, and P. Sexton (2020) Soil quality response to tillage, rotation and cover crop practices. Oral (Virtual) Presentation at the 75th SWCS International Annual Conference at Des Moines, IA, July 27-29, 2020.
- Bawa, A., MacDowell, R., Singh, J., Pérez-Gutiérrez, J.D., McMaine, J., Sexton, P., Osborne, S.L., and Kumar, S. 2020. Changes in nutrient losses through tile drainage systems after planting winter rye cover crop. Oral (Virtual) Presentation at the 75th SWCS International Annual Conference at Des Moines, IA, July 27-29, 2020.
- 6. Singh J., N. Singh, S. Kumar, and P. Sexton (2019) Computed tomography-measured soil pores, and selected hydrological and physical properties as influenced by different rotations, tillage, and cover crop management. "Embracing the Digital Environment" ASA-CSSA-SSSA annual meeting, San Antonio, TX.
- Singh J., N. Singh, U. Sekaran, G.O. Abagandura, J.K. Dhaliwal, S. Kumar, and P. Sexton (2019) Responses of soil microbial community structure and greenhouse gas fluxes to crop rotations that include winter cover crops. "Embracing the Digital Environment" ASA-CSSA-SSSA annual meeting, San Antonio, TX.
- 8. Abagandura, G., and Kumar, S. 2019. Response of soil carbon and nitrogen fractions to intercropping kura clover (*Trifolium ambiguum* M. Bieb) with prairie cordgrass (*Spartina pectinata* Link.). Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Antonio, Texas.
- 9. Abagandura, G., Butail, N., Mahal, N., Gautam, A., Sekaran, U., Denardin, L.G.D., and Kumar, S. 2019. Carbon and nitrogen pools as affected by long-term manure and synthetic fertilizer application in corn and soybean rotation. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Antonio, Texas.
- Butail, N., U. Sekaran, and S. Kumar. 2019. Responses of Soil Hydrological, Physical, and Biological Properties to Short and Long-Term Cover Crops. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.

- 11. Dhaliwal, J., Abagandura, G., Singh, N., Sekaran, U., **Kumar, S.,** and Clay, D. 2019. Soil carbon and nitrogen fractions in response to integrated crop-livestock system in South Dakota. International Annual Meeting at San Antonio, Texas.
- 12. Dhaliwal, J., N. Singh, G. Abagandura, U. Sekaran, and S. Kumar. 2019. Short-Term Cover Crops and Grazing Under Integrated Crop-Livestock System Do Not Negatively Impact Soil Surface Greenhouse Gas Fluxes. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- Feng, H., U. Sekaran, S. Kumar, and S. Osborne. 2019. Impacts of Cover Crop Management on Soil Biochemical Properties. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 14. Gautam, A., Jose Guzman, Sandeep Kumar, Peter Kovacs and Peter Sexton. 2019. Long-Term Impacts of Manure Application and Inorganic Fertilization on Soil Aggregate Stability, Soil Organic Carbon and Nitrogen in Different Aggregate Factions in South Dakota. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 15. Gautam, A., Jose Guzman, Sandeep Kumar, Peter Kovacs and Peter Sexton. 2019. Long-Term Impacts of Manure Application and Inorganic Fertilization on Microbial Properties in South Dakota. Poster presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 16. Rai, T., Kumar, S., Nleya, T.M., Sexton, P.J., Shelia, V. and Hoogenboom, G., 2019. Simulating Long-Term Maize and Soybean Yields Under Conventional and No-till Systems. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 17. Rai, T., Nleya, T.M., Kumar, S. and Sexton, P.J., 2019. Impact of Integrated Crop-Livestock Production Systems on Crop Performance in South Dakota. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- Sekaran, U., Abagandura, G., Singh, J., Ibrahim, M., Subramanian, S., Owens, V., Kumar, S. 2019. Soil greenhouse gas fluxes from prairie cordgrass and kura clover mixture under different nitrogen fertilizer rates. International Annual Meeting at San Antonio, Texas.
- 19. Sekaran, U., K. Sagar, N. Butail, L. Denardin, J. Singh, N. Singh, A. Gandura, D. Sanyal, S. Kumar, B. Farmaha, A. Bly, and A. Martins. 2019. Responses of Soil Hydrological, Physical, and Biological Properties to Short and Long-Term No-till Systems. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 20. Sekaran, U., S. Kumar, S. Subramanian, and V. Owens. 2019. Kura Clover (Trifolium ambiguum M. Bieb) a Legume Crop with Prairie Cordgrass Improved Soil Health. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 21. Singh, N., Dhaliwal, J.K., Katuwal, S., Kumar, S., de Jonge L.W., Udawatta, R.P. and Anderson, S.H. 2019. Near surface soil hydrological properties using computed tomography and classical approaches under grazed pasture and croplands. Poster and 5-minute rapid Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Antonio, TX. November 10-13, 2019.
- 22. Singh, N., J. Dhaliwal, U. Sekaran, and S. Kumar. 2019. Assessing the Impacts of Cover Crops and Grazing Under Integrated Crop Livestock System on Soil Physical Quality. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 10-13, San Antonio, TX, USA.
- 23. Singh, N., Katuwal, S., Kumar, S., de Jonge L.W., Udawatta, R.P. and Anderson, S.H. 2019. Use of high-resolution CT scanning to characterize soil pore network as influenced by long

term application of cattle manure and synthetic fertilizers. Oral Presentation at the ASA-CSSASSSA. International Annual Meeting at San Antonio, TX. November 10-13, 2019.

- 24. **Kumar, S**. 2019. Impacts of integrated crop livestock system on soils and environmental quality. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Diego, CA, January 6-9, 2019.
- 25. Abagandura, G., Şentürklü, S., Singh, N., Kumar, S., Landblom, D. and Ringwall, K. 2019. Impacts of crop rotation and grazing under integrated crop-livestock system on soil surface greenhouse gas fluxes. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Diego, CA, January 6-9, 2019.
- 26. Polat, A., Abagandura, G., Singh, J., Kumar, S., Osborne, S. and Snyders, S. 2019. On-farm assessment of soil quality under integrated crop-livestock system in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Diego, CA, January 6-9, 2019.
- 27. Abagandura., G., Sekaran, U., Sagar, K., Bly, A., Singh, J., Dhaliwal, J., Wang, T., Kumar, S. and Farmaha, B. 2019. Response of soil biological health to short and long-term no-till systems in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Diego, CA, January 6-9, 2019.
- 28. Singh J., **S. Kumar**, and P. Sexton. 2019. "Inclusion of winter cover crops in long-term rotation and tillage system: Effect on soil biochemical properties" Soils Across Latitudes. SSSA 2019 annual meeting, San Diego, CA.
- 29. Singh J., T. Wang, **S. Kumar**, J. Davis, and P. Sexton. 2019. "Economics of Cropping Systems Featuring Different Rotations, Tillage and Cover Crops." Soils Across Latitudes. SSSA 2019 annual meeting, San Diego, CA.
- 30. Dhaliwal, J.K., Singh, N., Singh, J., Abagandura, G. and **Kumar, S**. 2019. Does grazing impact greenhouse gas fluxes? Oral Presentation at the SSSA International Soils Meeting at San Diego, CA, January 6-9, 2019.
- Dhaliwal, J.K., Singh, N., Singh, J., Sekaran, U. and Kumar, S. 2019. Can integrated crop livestock improve soils? Oral Presentation at the SSSA International Soils Meeting at San Diego, CA, January 6-9, 2019.
- 32. Singh, N., Dhaliwal, J.K., Singh, J., Sekaran, U., Wang, T., Bly, A.G., Owens, V.N. and Kumar, S. 2019. Soil Physical and Hydrological Properties As Influenced By Nitrogen Rates and Landscape Positions Under Switchgrass Seeded on Marginal Land. Oral Presentation at the SSSA International Soils Meeting at San Diego, CA, January 6-9, 2019.
- 33. Singh, N., Dhaliwal, J.K., Abagandura, G., Lai, L., Snyders, S. and **Kumar, S**. 2019. Impacts of grazing of cover crops under integrated crop-livestock system on soil surface greenhouse gas emissions. Oral Presentation at the SSSA International Soils Meeting at San Diego, CA, January 6-9, 2019.
- 34. Feng, H., S.L. Osborne, B.K. Chim, W.E. Riedell, T.E. Schumacher, and S. Kumar. 2019. Impacts of crop diversity and crop root characteristics on soil aggregate stability in South Dakota. Poster presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Diego, CA, January 6-9, 2019.
- 35. Sekaran U., J. Singh, N. Singh, J. Dhaliwal, A. Polat, L. Lai, S. Subramanian and S. Kumar 2019. Cover crop management and grazing effects on soil microbial community structure. Oral Presentation at the SSSA International Annual Meeting, Jan. 6-9, San Diego, CA, USA.
- 36. Gautam, A., J. Guzman, P. Sexton, **S. Kumar**, and P. Kovacs. Long term impact of manure and inorganic fertilizer on soil health in South Dakota. Poster Presentation at the SSSA International Annual Meeting, Jan. 6-9, San Diego, CA, USA.

- 37. Sekaran U., C. McCoy, J, Singh, N. Singh, J.K. Dhaliwal, L. Lai, S. Subramanian and S. Kumar. 2019. Effects of nitrogen management and landscape positions on soil microbial community structure in switchgrass (Panicum virgatum L.) Poster Presentation at the SSSA International Annual Meeting, Jan. 6-9, San Diego, CA, USA.
- 38. Kumar, S. 2018. Integrated Crop-Livestock Systems for Enhancing Soils and Water Quality in Northern Great Plains, USA. Oral Presentation at the 21st World Congress of Soil Science (WCSS) at Rio de Janeiro, Brazil August 12, 2018-August 17, 2018.
- 39. Ozlu, E., Arriaga, F., and Kumar, S. 2018. Intercorrelation in Mechanisms of Soil Aggregate Formation and Carbon Stabilization in Midwest Soils, USA. Oral Presentation at the 21st World Congress of Soil Science (WCSS) at Rio de Janeiro, Brazil August 12, 2018-August 17, 2018.
- 40. Kumar, S. 2017. Benefits of Integrating Crop-Livestock Systems on Soil Health and Farm Profitability. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 41. Pérez-Gutiérrez, J.D., Liming, L., and Kumar, S. 2017. Diurnal Pattern of Soil Moisture and Temperature under Corn and Soybean Fields in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. Annual International Meeting at Tampa, FL, October 22-25, 2017.
- 42. Sandhu, S.S., **S. Kumar**, N. Hoilett, E. Ozlu, and K.S. Chalise. 2017. Effect of biochar and manure on soil carbon fractions and microbial activity of eroded and depositional landscape positions. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 43. Sandhu, S.S., **S. Kumar**, E. Ozlu, C.T. Tobin, and A.H. Alhameid. 2017. Influence of biochar and manure on the hydrological properties of eroded and depositional landscape positions. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 44. Lai L., Kumar, S., Sexton, P. 2017. Soil Surface Greenhouse Gases in an Integrated Crop-Livestock System in South Dakota, USA. Oral Presentation at the ASA-CSSA-SSSA International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 45. Seth, V. M. Lehman, and Sandeep Kumar. 2017. Impacts of Cover Crop Management Under No-Tillage on Soil Microbial Parameters. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 46. Seth, V., S. Osborne, and S. Kumar. 2017. Impacts of Cover Crop Management Under No-Tillage on Soil Quality. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 47. Polat, A. Osborne, S., and Kumar, S. 2017. Impacts of Crop Diversity Under No-Till System on Soil Quality Parameters. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017
- 48. Lai L, Kumar S, Willoughby G, 2017. Evaluating the Impacts of Humic Acid Applied with Nitrogen Fertilizer on Corn Growth and Soil Quality in South Dakota. Poster Presentation at the ASA-CSSA-SSSA International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 49. Lai L, Singh N, Feng H, Landblom D, Senturklu S, Ringwall K, Kumar S, 2017. Effects of Crop Rotation and Grazing in an ICLS on Greenhouse Gas Emissions in Northern Great Plains. Poster Presentation at the ASA-CSSA-SSSA International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 50. Alhameid A., J. Singh, E. Ozlu and S. Kumar 2017. SOC Changes and Other Soil Properties as Impacted by Crop Rotational Diversity Under No-Till Farming in NGP. Oral Presentation at the 72nd Soil Water Conservation Society. International Annual Conference at Wisconsin-Madison, July 30 – August 02, 2017.

- 51. Singh J., S. Kumar and P. Sexton 2017. Impacts of Diverse Crop Rotations and Cover Crops Under different Tillage Systems on Soil Health in South Dakota. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting in Tampa, FL, October 22-25, 2017.
- 52. Singh N, Lai L, Perez-Gutierrez J, Kumar S. 2017. Impacts of Integrated Crop-Livestock System on soil surface greenhouse gases in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 53. Ozlu, E., A.H. Alhameid, **S. Kumar**, P. Sexton, and E. Cortus. 2016. Impact of Manure and Mineral Fertilizer Application on Soil Quality under a Corn-Soybean Rotation in South Dakota. Oral presentation at the ASA-CSSA-SSSA International Annual Meeting, Nov. 6-9, Phoenix, AZ.
- 54. Singh N, Lai L, Perez-Gutierrez J, Kumar S. 2017. Impacts of Integrated Crop-Livestock System on soil surface greenhouse gases in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL, October, 22-25, 2017.
- 55. Ozlu, E., S. Sandhu, S. Kumar, A.H. Alhameid, C. Tobin, and P. Sexton. 2016. Impact of Manure Application on Greenhouse Gas Emissions and Soil Microbial Activity under a Long-term Corn-Soybean Rotation in South Dakota. Oral Presentation at the 5th EUROSOIL International Congress, Oct. 16-21, Istanbul, Turkey.
- 56. Ozlu, E., C. Tobin, **S. Kumar**, S. Sandhu, and P. Sexton. 2016. Impacts of Grazing Cover Crops on Soil Health Parameters and Corn Yield. Oral Presentation at the 5th EUROSOIL International Congress, Oct. 16-21, Istanbul, Turkey.
- 57. Kumar, S., S. Gautam, E. Mbonimpa, L. Lai, J. Bonta, X. Wang, and R. Rafique. 2015. A new methodology for calibrating Apex model using combined PEST and Trial-Error approach for simulating surface runoff from small watersheds. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 58. Neupane, R., and S. Kumar. 2015. Assessing the effects of potential climate and land use changes on annual and seasonal hydrologic processes of a large-scale agriculture dominated watershed. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 59. Ozlu, E., **S. Kumar**, S. Berg, A. Bly, P. Sexton, and R. Gelderman. 2015. Impact of manure application on soil health and crop yield under corn-soybean rotation in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 60. Lai, L., **S. Kumar**, C.O. Hong, V.N. Owens. 2015. Evaluating effects of landscape position and N rates on dissolved organic carbon in switchgrass land in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 61. Lai, L., S. Kumar, V.N. Owens, D. Clay, D. Rastogi, M. Ashfaq, and J. Schumacher. 2015. Investigating impacts of multiple parameters on CO<sub>2</sub> Fluxes from a continuous corn field in South Dakota. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 62. Sandhu S., R. Chintala, S. Kumar, T. Schumacher, S.K. Papiernik, D. Malo, and D. Clay. 2015. Biochar impacts the physical properties of soils under corn-soybean rotation. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 63. Sandhu, S., M. Ibrahim, **S. Kumar**, and S. Sehgal. 2015. Impact of silicon fertilizer on the yield of spring wheat under drought conditions. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.

- 64. Chintala, R., S. Sandhu, T.E. Schumacher, J. Rice, **S. Kumar**, D. E. Clay, and D. Malo. 2015. Modification of surface functionality of biochars and their impacts on greenhouse gas emissions from eroded landscape. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN, November 15-18, 2015.
- 65. Chintala, R., T.E. Schumacher, R. Gelderman, S. Sandhu, S. Kumar, D. E. Clay, and D. Malo. 2015. Influence of biochars on nutrient uptake and yields of corn and soybean at two different landscape positions. Poster Presentation at the ASA-CSSA-SSSA International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 66. Chalise, K., B. Wegner, S. Sandhu, E. Ozlu, **S. Kumar** and S.L. Osborne. 2015. Evaluating the impacts of crop residue removal and cover crops on soil organic carbon and water infiltration. Poster Presentation at the ASA-CSSA-SSSA International Annual Meeting at Minneapolis, MN, November 15-18, 2015.
- 67. Alhameid, A.H., M.A. Ibrahim, S. Sandhu, E. Ozlu, S. Kumar, S.L. Osborne, P. Sexton, T.E. Schumacher, and S. Ali. 2015. Long-term tillage and diverse crop rotation systems impacts on organic carbon and selected soil properties. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 68. Singh, S., N. Brandenburg, A. Gonzalez, J. Kjaersgaard, T. Trooien, L. Ahiablame and S. Kumar. 2015. Response of winter manure application to surface water quantity and quality from small watersheds. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 69. Mehan, S., R.P. Neupane, and **S. Kumar**. Projecting climate change scenarios on surface hydrology of a small agriculture-dominated watershed. 2015. SWAT Conference at Purdue University, West Lafayette, October 15, 2015.
- 70. Tobin, C., S. Kumar, E. Grings, D.D. Malo, P. Sexton, S. Ali. 2015. Impacts of integrated crop-livestock system on soil health parameters. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Minneapolis, MN. November 15-18, 2015.
- 71. **Kumar, S.,** S. Mehan, R. Neupane, E. Mbonimpa, J. Kjaersgaard, A. Bly, J. Jacquet, and S. Scott. Integrated plan for drought preparedness and mitigation, and water conservation at the watershed scale. Poster Presentation at USDA PD meeting at Gainsborough, NC. July 26-28, 2015.
- 72. Kumar, S., B. Wegner, S. Singh, and T. E. Schumacher. 2015. Biofuel crops and their impacts on soils and environmental quality. Oral Presentation at NC1178 Meeting held at The Ohio State University, Columbus on June 23, 2015.
- 73. Kumar, S. 2015. Sustainable management systems for improving soils and water quality. Oral Presentation at 4<sup>th</sup> International Conference on "Applied Sciences, Environmental Engineering and Clean Energy Technologies for Sustainable Development" (ASECET-2015) to be held at Jawaharlal Nehru University, New Delhi, on 1st August, 2015.
- 74. Schumacher, T.E., R. Chintala, S. Sandhu, S. Kumar, D. Clay, R. Gelderman, S. Papiernik, D. Malo, S. Clay, and J. Julson. 2015. Differential effects of biochar on soils within an eroded field. Oral Presentation at European Geosciences Union General Assembly 2015, Vienna, Austria, 12-17 April 2015.
- 75. **Kumar, S.,** B. Wegner, I.E. Ahyala, S. Osborne, T. Schumacher, and M. Lehman. 2015. Cover crops and crop residue management under no-till systems improve soils and environmental quality. Oral Presentation at European Geosciences Union General Assembly 2015, Vienna, Austria, 12-17 April 2015.
- 76. **Kumar, S.,** E. G. Mbonimpa, C.O. Hong, V. Owens, and S. Osborne. 2014. Nitrogen fertilization rate and landscape positions impacts on root growth parameters of switchgrass.

Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.

- 77. Kumar, S., E.G. Mbonimpa, C.O. Hong, V. Owens, and S. Osborne. 2014. Switchgrass root growth parameters impacted by nitrogen fertilization rate and landscape positions. Poster Presentation at New Philologist next generation scientists workshop held from 29–30 July 2014 at the John Innes Conference Centre in Norwich, UK.
- 78. **Kumar, S.,** C.O. Hong, E.G. Mbonimpa, V. Owens, M. Lehman, S. Osborne, T. Schumacher, D. Clay and R. Chintala. 2014. Switchgrass root growth parameters impacted by nitrogen fertilization rate and landscape positions. Poster Presentation at Presentation at 20th World Congress Conference 2014, South Korea.
- 79. Gautam, S., S. Kumar, E.G. Mbonimpa and J. Bonta. 2014. A new methodology for calibrating APEX model using PEST to simulate agricultural runoff. Poster Presentation at ASABE/CSBE North Central Intersectional Meeting at South Dakota State University, Brookings, SD March 28-29, 2014.
- 80. Mbonimpa, E.G., **S. Kumar**, V. Owens, R. Chintala, and J. Stone. 2014. Assessing fertilization and landscape impacts on the overall life cycle of switchgrass used to produce cellulosic ethanol. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.
- 81. Mbonimpa E. G., S. Gautam, L. Lai, **S. Kumar**, J. Bonta. 2014. Improved calibration of Apex model for a small watershed managed with no-till system. ASA, CSSA and SSSA International Annual Meetings, Long Beach, CA, Nov 2014.
- 82. Mbonimpa, E.G, S. Kumar, L. Lai, R. Chintala, R. Rafique, and A. Glenn. 2014. Simulating climate change impacts on N2O fluxes in corn grown under a poorly drained soil. American Society of Agricultural and Biological Engineers (ASABE) Conference at SDSU, Brookings on March 28-29, 2014.
- 83. Gautam, S., **S. Kumar**, E.G. Mbonimpa, J. Bonta, R. Lal, J. H. Kjaersgaard, S.K. Papiernik, and J.R. Williams. 2014. Simulating runoff from small grazed pasture watersheds located at North Appalachian experimental watershed, Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.
- 84. Gautam, S., E.G. Mbonimpa, **S. Kumar**, J. Witter, and J. Bonta. 2014. Extending field-scale information to the watershed scale using the Apex and SWAT models. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014
- 85. Lai, L., S. Kumar, E.G. Mbonimpa, R. Chintala, V. Owens and J. Schumacher. 2014. Quantifying current and future CO2 fluxes using DayCent and PEST models from a marginal land seeded to switchgrass production in South Dakota. Oral Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.
- 86. Lai, L., E.G. Mbonimpa, C.H. Hong, S. Kumar, V. Owens, S. Osborne, and M. Lehman. 2014. DayCent Application to model greenhouse gas fluxes from switchgrass land managed with nitrogen fertilizer levels under different landscape positions. Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. November 2-5, 2014.
- 87. Kumar S., C.H. Hong, V.N. Owens, D.E. Clay, M. Lehman, S.L. Osborne, T.E. Schumacher, and E.G. Mbonimpa. 2013. Soil carbon dioxide fluxes from switchgrass land under nitrogen fertility management in South Dakota. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL. November 03-06, 2013.
- 88. Gautam, S., **S. Kumar**, R. Lal, J. Bonta, J. Witter, Y. Xie, R. Moore, E. Mbonimpa, and S. Jiang. 2013. APEX model simulation of runoff and non-point source pollutants from

watersheds managed with no-till management. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tampa, FL. November 03-06, 2013.

- 89. Gautam, S., S. Kumar, R. Lal, J. Bonta, J. Witter, Y. Xie, R. Moore, E.G. Mbonimpa, and S. Jiang. 2013. APEX model simulation of runoff and non-point source pollutants from watersheds managed with long-term no-till management, Poster Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Tempa, FL. November 3-6, 2013.
- 90. Gautam, S., S. Kumar, E. G. Mbonimpa, and J. Bonta. 2013. APEX model to assess no-till management effects on runoff and nutrient losses from a small agricultural watershed in Ohio. Oral Presentation at 2013 Eastern South Dakota Water Conference. October 30, 2013.
- 91. Cihacek, L., K. Olson, M. Al-Kaisi, F. Arriaga, H. Blanco, J. Jifon, S. Kumar, R. Lal, B. Lowery, R. Miles, D. Presley, M. Ruark, T. Schumacher, D. Stott, and K. Thelen. 2013. History of the NC-1178 regional research committee. Presentation at the International Union of Soil Scientists at Madison, WI, USA. June 3-6, 2013.
- 92. **Kumar, S.,** A. Kadono, T. Nakajima, and R. Lal. 2012. Greenhouse gas emissions influenced by no-tillage and chisel tillage under drainage and non-drainage systems. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Cincinnati, OH. October 21-October 24, 2012.
- 93. **Kumar, S.,** A. Kadono, R. Lal, and W. Dick. 2012. Influences of long-term tillage and cropping systems on corn yield and soil properties in two ecoregions of Ohio. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Cincinnati, OH. October 21-October 24, 2012.
- 94. **Kumar, S.,** T. Nakajima, and R. Lal. 2012. Effects of no-tillage and diverse cropping systems on soil organic carbon sequestration. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Cincinnati, OH. October 21-October 24, 2012.
- 95. **Kumar, S.,** J. Witter, R. Lal, R. Moore, J. Bonta, and Y. Xie. 2012. Simulation of runoff losses from watersheds managed under diverse land management. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Cincinnati, OH. October 21-October 24, 2012.
- 96. Nakajima, T., **S. Kumar**, A.B. Andrade, and R. Lal. 2012. Comparison of Green House gas fluxes monitored with photoacoustic spectroscopy and gas chromatograph. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Cincinnati, OH. October 21-October 24, 2012.
- 97. Lal, R., 2011. Agricultural mitigation of climate change: potential and challenges. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Antonio, TX. October 16-October 19, 2011 (*presented on behalf of Dr. Rattan Lal*).
- 98. Lal, R., 2011. Soil carbon sequestration and ecosystem services. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Antonio, TX. October 16-October 19, 2011 (presented on behalf of Dr. Rattan Lal).
- 99. **Kumar, S.,** and R. Lal. 2011. Estimating soil organic carbon in major land resource areas and land uses of midwestern region of USA. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at San Antonio, TX. October 16-October 19, 2011.
- 100. **Kumar, S.,** R. Lal, and D. Liu. 2010. Predicting spatial distribution of organic carbon pool in soils of Ohio using four statistical approaches. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. October 31-November 4, 2010.
- 101. Kumar, S., S.H. Anderson, R.P. Udawatta, and A. Mudgal. 2010. APEX model simulation of runoff and sediment losses from agroforestry buffers for watersheds under pasture management. Presentation at the ASA-CSSA-SSSA. International Annual Meeting at Long Beach, CA. October 31-November 4, 2010.

- 102. Anderson, S.H., R.P. Udawatta, S. Kumar\*, C.J. Gantzer, and A. Rachman. 2010. CT-measured macropore parameters for estimating saturated hydraulic conductivity at four study sites. The Physics of Soil Pore Structure Dynamics Symposium, pp. 13-16. *In* R.J. Gilkes and N. Prakongkep (eds.) Proceedings 19<sup>th</sup> World Congress of Soil Science, Soil Solutions for a Changing World. August 1-6, 2010, Brisbane, Australia.
- 103. Kumar, S., R.P. Udawatta, and S.H. Anderson. 2009. Root length density and carbon content influenced by agroforestry and grass buffers under grazed pasture systems in a Hapludalf. Poster presented at the ASA-CSSA-SSSA. International Annual Meeting at Pittsburgh, PA. November 1-5, 2009.
- 104. **Kumar, S.,** S.H. Anderson, and R.P. Udawatta. 2009. CT-measured macropores as affected by agroforestry and grass buffers for grazed pasture systems. Presentation presented at 11th North American Agroforestry Conference, Columbia, MO June 2009.
- 105. **Kumar, S.,** S.H. Anderson, R.P. Udawatta, and R.L. Kallenbach. 2009. Agroforestry and grass buffer influences on water infiltration under grazed pasture system. Poster presented at 11th North American Agroforestry Conference, Columbia, MO June 2009.
- 106. **Kumar, S.,** S.H. Anderson, and R.P. Udawatta. 2008. Computed tomographic analysis of soil pore characteristics for agroforestry and grass buffers in a grazed pasture system. Oran Presentation at GSA-ASA-SSSA. Joint Annual Meeting October 5-9, 2008, Houston, TX.
- 107. **Kumar, S.,** S.H. Anderson, and R.P. Udawatta. 2008. Influence of agroforestry and grass buffers on infiltration for a grazed pasture system. Poster presented at GSA-ASA-SSSA. Joint Annual Meeting October 5-9, 2008, Houston, TX.
- 108. Kumar, S., S.H. Anderson, L.G. Bricknell, R.P. Udawatta, and C.J. Gantzer. 2007. Soil hydraulic properties influenced by agroforestry and grass buffers for grazed pasture systems. Poster presented at the ASA-CSSA-SSSA 2007 International Annual Meeting at New Orleans, Louisiana.
- 109. Bricknell, L., S.H. Anderson, S. Kumar\*, and R.P. Udawatta. 2007. Animal traffic effects on soil hydraulic properties relative to agroforestry and grass buffers. Missouri Natural Resources Conference Abstracts, 31 January 2 February, Osage Beach, Missouri.

# **Extension and Outreach Activities**

- Tobin, C., W. Tong, and S. Kumar. 2016. Enhancing economic profit and soil health through integrated crop livestock systems. <u>https://www.farmforum.net/story/news/agriculture/2016/05/04/enhancing-economic-profit-and-soil-health-through-integrated-crop-livestock-systems/118974148/</u>
- Kumar, S. 2015. Demonstrating the benefits of integrated crop-livestock systems on soil health. Oral Presentation at the Southeast Research Farm, Beresford, SD.
- Kumar, S., and K. Reitsma. 2016. Soil tillage. Chapter 11. *In* Clay, D.E., C.G. Carlson, S.A. Clay, and E. Byamukama (*eds*). iGROW Corn: Best Management Practices. South Dakota State University.
- Kumar, S., D.E. Clay, and C.G. Carlson. 2016. Soil compaction impacts on corn yield. Chapter 14. *In* Clay, D.E., C.G. Carlson, S.A. Clay, and E. Byamukama (*eds*). iGrow Corn: Best Management Practices. South Dakota State University.
- Bly, A. D. Karki, N. Singh, and **S. Kumar**. 2021. X-Ray Scanning Confirms Soil Health Benefits from Conservation Practices. SDSU Extension. https://extension.sdstate.edu/sites/default/files/2021-03/P-00197.pdf.
- Bly, A. T. Wong, J. Mueller, T. White and **S. Kumar**. Farm Practices That Improve Soil Health: Cover Crops and Crop Residues. SDSU Extension.

 $\underline{https://extension.sdstate.edu/farm-practices-improve-soil-health-cover-crops-and-cropresidues.}$ 

- Bly, A. U. Sekaran, and **S. Kumar**. 2020. Organic Agronomy Starting to Impact. <u>https://extension.sdstate.edu/organic-agronomy-starting-impact</u>.
- D. Karki, A. Bly, J. Dhaliwal, and **S. Kumar**. 2021. *Do Cover Crops and Grazing Harm Soil Properties? https://extension.sdstate.edu/do-cover-crops-and-grazing-harm-soil-properties.*