

**Anil Somenahally**

Assistant Professor of Soil Microbiology  
Texas A&M AgriLife Research

The Department of Soil and Crop Sciences, Texas A&M University

Phone: (903) 834-6191; Fax: (903) 834-7140;

[Anil.Somenahally@ag.tamu.edu](mailto:Anil.Somenahally@ag.tamu.edu)

**Education and Training**

2010	Ph D	Texas A&M University	Soil Microbiology
2006	MS	Tarleton State University	Soil Science
2001	BS and MS	University of Agricultural Sciences, Bangalore	Soil Chemistry

**Professional Experience**

11/2013-present	Assistant Professor, Texas A&M AgriLife Research and Department of Soil and Crop Sciences, Texas A&M University
2/2012-11/2013	Postdoctoral Research Associate, Oak Ridge National Laboratory
12/2010-1/2012	Postdoctoral Research Associate, Texas A&M University
08/2001-12/2004	Senior Research Fellow, IIHR, Bangalore, India

**Technical expertise:** Conduct basic and applied research to improve plant-microbe interactions that are beneficial for soil fertility and soil health in agriculture systems and bioremediation of contaminated soils. Understanding rhizosphere microbiome interactions in response to agriculture management and environmental conditions and develop effective strategies to improve microbial diversity and beneficial functions. Identify novel microbial inoculants for nitrogen and phosphorus fertilization. Current research projects focus on harnessing plant beneficial microbial interactions for increasing nitrogen use efficiency, increase P availability in tropical soils and improving soil health and disease suppression properties in low productive soils.

**Refereed/Peer-Reviewed Publications (last 5 years):**

1. Somenahally A., DuPont J.I., Brady J., McLawrence J., Sarkar R., Rouquette Jr F.M. (2020) Root-mycorrhizae interactions contributed to organic carbon density in the sandy soil profiles of adapted grazing lands. *Applied Soil Ecology* (Accepted).
2. Sarkar R, Corriher V., Long C.R. and Somenahally A, (2020). Challenges and Potentials for Soil Organic Carbon Sequestration in Forage and Grazing Systems. *Rangeland Ecology & Management* (Accepted).
3. Aiosa M.L., Neely C.B., Morgan C., Jessup R.W., Corriher-Olsen V.A., Somenahally A.C., Smith G.R., Rouquette Jr F.M. (2020). Cowpeas as a summer cover crop and green manure for forage rye. *Agrosystems, Geosciences and Environment* (Accepted).
4. Singh H., Kandel T.P., Gowda P.H., Somenahally A., Northup B.K., Kakani V.G. (2019) Influence of contrasting soil moisture conditions on carbon dioxide and nitrous oxide emissions from terminated green manures. *Agrosystems, Geosciences & Environment*, 2.
5. Christensen G.A., Gionfriddo C.M., King A.J., Moberly J.G., Miller C.L., Somenahally A.C., Callister S.J., Brewer H., Podar M., Brown S.D. (2019) Determining the reliability of measuring mercury cycling gene abundance with correlations with mercury and methylmercury concentrations. *Environmental Science & Technology* 53:8649-8663

6. Hu P, Wu L, Hollister E B, Wang A S, Somenahally A C, Hons F M and Gentry T J. (2019). Fungal community structural and microbial functional pattern changes after soil amendments by oilseed meals of *Jatropha curcas* and *Camelina sativa*: a microcosm study. *Frontiers in Microbiology*, 10, 537.
7. Somenahally.A, DuPont J.I., Brady J., McLawrence J., Northup B., Gowda P. (2018) Microbial communities in soil profile are more responsive to legacy effects of wheat-cover crop rotations than tillage systems. *Soil Biology and Biochemistry*: 123:126-135. DOI:
8. Kandel T.P., Gowda P.H., Somenahally A., Northup B.K., DuPont J., Rocateli A.C. (2018) Nitrous oxide emissions as influenced by legume cover crops and nitrogen fertilization. *Nutrient Cycling in Agroecosystems*. 112, Issue 1, pp 119–131. DOI: 10.1007/s10705-018-9936-4.
9. Christensen G.A., Somenahally A.C., Moberly J.G., Miller C.M., King A.J., Gilmour C.C., Brown S.D., Podar M., Brandt C.C., Brooks S.C., Palumbo A.V., Wall J.D., Elias D.A. (2017) Carbon amendments alter microbial community structure and net mercury methylation potential in sediments. *Applied and Environmental Microbiology*. DOI: 10.1128/aem.01049-17.
10. +M. Podar, C. C. Gilmour, C.C. Brandt, A.Soren, S. D. Brown, B. R. Crable, A.V. Palumbo, A. Somenahally and D.A. Elias. 2015. Global prevalence and distribution of mercury-methylating microorganisms. *Science Advances*, 1(9):e1500675.
11. Hu, P.; Hollister, E. B.; Somenahally, A. C.; Hons, F. M.; Gentry, T. J., 2014. Soil bacterial and fungal communities respond differently to various isothiocyanates added for biofumigation. *Frontiers in Microbiology*, doi: 10.3389/fmicb.2014.00729
12. Somenahally, A, Mosher J.A., Podar M., Phelps T.J., Brown S.D., Yang, Z.K., Hazen T.C., Arkin A.P., Palumbo A.V. and Elias D.A. 2013. Hexavalent chromium reduction under fermentative conditions with lactate stimulated native microbial communities. *PLOS One*, 8(12): e83909.
13. C. Gilmour, M. Podar, A. Bullock, A. Graham, S. Brown, A. Somenahally, R. Hurt, A. Johs, K. Bailey and Dwayne Elias. 2013. Mercury methylation by novel microorganisms from new environments. *Environmental Science & Technology*, 47 (20), 11810-11820.

#### **Book chapter:**

Anil Somenahally. (2017). Root-Microbe Interactions in Response to Soil Conditions. In *Global Soil Security*. D. J. Field, C. L. S. Morgan and A. B. McBratney (Editors). Springer International Publishing. 137-144.

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#### **Conference presentations/abstracts (last 4 years only)**

1. Priya, S.; Gentry, T.; Adams, C.; McLawrence, J.; Case, C.; Brady, J.; Somenahally, A. 2019. Evaluating soil and plant amendments for improving symbiotic AMF interactions in acidic soils. In *ASA-CSA-SSSA National Meetings*, San Antonio, TX, Nov 9-13, 2019.
2. McLawrence, J.; Case, C.; DuPont, J. I.; Brady, J.; Rouquette Jr, F. M.; Somenahally, A. 2019. Quantifying changes in root biomass, microbial biomass and soil organic pools under long term grazing and nitrogen management strategies. In *ASA-CSA-SSSA National Meetings*, San Antonio, TX, Nov 10-13, 2019.
3. Abdu Masrahi, Anil Somenahally and Terry J. Gentry. 2018. Interactions of arbuscular mycorrhizal fungi with hyphosphere microbial communities in saline soils: implications on

- alkaline phosphatase gene abundance and phosphorus availability. Enhancing Productivity in a Changing Climate, ASA and CSSA Meeting | Nov. 4-7 | 2018 Baltimore., MD.
4. Nevada King, Sara Janssen, Javid F. McLawrence, Cara L. Case, John R. Reinfelder, Anil Somenahally, Ri-Qing Yu. 2018. Microbial Hg methylation communities characterized by illumina sequencing in Caddo Lake, TX. Poster presentation at Spring meeting of ASM-TX Branch in New Braunfels, Texas from 3/22/2018 - 03/24/2018
  5. Tanka Kandel, Prasanna H. Gowda, Brain K. Northup, Jesse DuPont, Anil Somenahally and Alex Rocateli. 2017. Effects of cover crops incorporation and nitrogen fertilization on N<sub>2</sub>O and CO<sub>2</sub> Emissions. At AGU Fall Meetings, New Orleans, LA, December 11-14, 2017.
  6. Onder Ozal, Terry J. Gentry, Partson Mubvumba, Paul DeLaune and Anil Somenahally. 2017. Impact of cover crops on soil microbial populations and mycorrhizal diversity in dryland cotton. ASA, CSSA, and SSSA Annual Meetings in Tampa, FL, Oct 22-25th, 2017
  7. Anil Somenahally, Jesse DuPont and Prasanna Gowda, 2017. Enhancing climate resiliency and sustainability of soil health in grazing lands. International Scientific Conference on Environment and Agriculture 2017, Hammamet, Tunisia, April 24th -25th 2017.
  8. Maura Purcell\*, Jesse DuPont, Prasanna Gowda, Javid F. McLawrence, Cara L. Case, Nevada King, Ri-Qing Yu and Anil Somenahally, 2016. Impacts of grazing land management on methane production by soil microbial communities. *ASM Texas Branch Fall Meetings*, Nov 14-15, 2016, Richardson, TX. (Received second place undergraduate student competition)
  9. Anil Somenahally, Javid McLawrence, Cara Case, Riqing Yu, Maura Purcell, Prajwal Gowda, Jesse I. DuPont, Francis M. Rouquette Jr. 2016. Methane cycling microbial communities in soil profile of pasture lands under different grazing and nitrogen management scenarios. *ASA, CSSA, and SSSA Annual Meetings* in Phoenix AZ, Nov 6-9, 2016.
  10. Jesse I. DuPont, Nisha Srinivas, Brian K. Northup, Prasanna H. Gowda and Anil Somenahally. 2016. Expanding soil health assessment methods for agricultural systems of the Southern Great Plains. at *ASA, CSSA, and SSSA Annual Meetings* in Phoenix AZ, Nov 6-9, 2016.
  11. Prasanna H. Gowda, Jean L. Steiner, Pradeep Wagle, Brain K. Northup, Jesse DuPont, Tanka Kandel and Anil Somenahally. 2016. GRL-FLUXNET: A network of integrated flux measurement systems in the Southern Great Plains at *AGU Fall meetings* at San Francisco, CA, Dec 12-16, 2016.

### **Honors and Synergistic Activities**

- 2018-2020 Associate Editor, *Agrosystems, Geosciences and Environment (AGE) Journal*, Published by American Society of Agronomy and Crop Science Society of America.
- 2017 Conference session chair: 'Water and soil conservation and management' under 'natural resources management' at the International Scientific Conference on Environment and Agriculture, Hammamet, Tunisia, April 24th -25th 2017.
- 2016-2017 Organizer, International workshop on 'Sustainable Soil Resource Management in Tunisia', Jan 19-21st 2016; June 1st -4th 2016, College Station, TX; April 25-28th. 2017, Tunis, Tunisia (Funded by The US Department of State and Tunisia Ministry of Agriculture)
- 2014 Travel Grant Award by Bill & Melinda Gates Foundation and the Biosciences East and Central Africa (BeCA)-ILRI Hub to attend 'Agriculture Research Connections Workshop', Nairobi, Kenya, June 20th-28th, 2014.
- 2009 Tom Slick Fellowship for outstanding graduate research, Texas A&M University

- 2010 First Place, PhD Research Competition, 4<sup>th</sup> Texas A&M AgriLife conference, Graduate Student Poster Competition, College Station, TX. Jan 11-13, 2010.
- 2009 First Place, Graduate Student Research Poster Competition of Soil Biology and Biochemistry, ASA-CSA-SSSA National Meetings, Pittsburgh, PA. Nov 1- 5, 2009
- 2006-2008 Pathways Fellowship to PhD program, 2006-2008, Office of Graduate School, Texas A&M University