

Anith K N

Professor of Microbiology,
 Department of Microbiology, College of Agriculture, Vellayani
 & Director of Research
 Kerala Agricultural University,
 Thrissur 680656, Kerala, India
 e-mail: anith.kn@kau.in
 mob: + 91-9446413861

Citizenship : Indian
Date of Birth : 25th May 1969
Gender : Male

Academic Qualification:

Degree	University/Institution	Year	Subjects	Grade (OGPA)
Ph.D	Indian Agricultural Research Institute, New Delhi, India	1997	Microbiology (major)	3.72/4.00
M.Sc	Indian Agricultural Research Institute, New Delhi, India	1993	Microbiology (major)	3.74/4.00
B.Sc. (Agri.)	Kerala Agricultural University, Kerala, India	1991	Agriculture	8.5/10.0

Title of Ph.D thesis : Molecular basis of antifungal activity of a fluorescent Pseudomonad

Postdoctoral training: North Florida Research and Education Centre, **University of Florida, USA** in the area of plant-microbe interactions. (March 2002- March 2003)

Areas of research interest: Plant-microbe interactions, biological control of plant diseases

Employment details

2012 April to till date	Professor, Kerala Agricultural University
2006 April – 2012 April	Associate Professor, Kerala Agricultural University
2003 March – 2006 April	Assistant Professor, Kerala Agricultural University
2002 April – 2003 March	Visiting Scientist, NFREC, University of Florida, USA
1997 April – 2002 March	Assistant Professor, Kerala Agricultural University

Major research achievements:

- Isolated, characterized and developed the biocontrol bacterial strain *Pseudomonas fluorescens* PN026, currently being commercially distributed by Kerala Agricultural University
- Developed a fungal-bacterial co-culture system in a single fermentation vessel, involving the beneficial endophytic fungus, *Piriformospora indica* and plant growth promoting bacterial strain *Bacillus pumilus*
- Devised a rapid and effective screening procedure for selection of efficient bacterial antagonists against the black pepper foot rot pathogen, *Phytophthora capsici*
- A coconut water based, farmer-friendly field level multiplication method for the biocontrol bacterium *Pseudomonas fluorescens* was developed
- A coconut water based liquid bioformulation for *Pseudomonas fluorescens* was developed
- Devised *in vitro* screening methods for testing antagonism of one or a couple of bacterial biocontrol isolate(s) against multiple fungal phytopathogens in a single agar plate

List of Scopus indexed publications:

1. Nayana Grace Koshy, S. Anu Rajan, **K. N. Anith**, N. Chitra, V. I. Soumya, Thanku Mariam Scaria and R. Beena (2025) Beyond the pink: uncovering the secrets of pink pigmented facultative methylotrophs. *Arch Microbiol* **207**, 80 <https://doi.org/10.1007/s00203-025-04280-9>
2. Mishra, Prashant, S. Shakespear, Sara C. D. Carpenter, S. Hamsa, S. Vig, **K. N. Anith**, Prasanta K. Dash, Adam J. Bogdanove, and Rihui Rai. 2025. PthXo2B Orthologue Tal7 of Xanthomonas Oryzae Pv. Oryzae Strain IX-221 Acts as a Major Virulence Factor in Indica Rice Without Activating a Clade III SWEET Gene. *Molecular Plant Pathology* 26, no. 3: e70067. <https://doi.org/10.1111/mpp.70067>.
3. Subhash, A.P., Veena, S.S., Makesh Kumar, T. and **K. N. Anith*** 2025. *Piriformospora indica* and Arbuscular Mycorrhizal Fungus suppress fungal root rot and mosaic diseases of cassava. *Symbiosis* <https://doi.org/10.1007/s13199-025-01044-3>
4. Rajeshwaran, B., Faizal, M.H., Themuh, M. and **Anith, K. N***. 2025. Harnessing endophytic allies: Defense priming in *Vigna unguiculata* (L) Walp. against *Spodoptera litura* (Fabricius) by bacterial endophytes. *Symbiosis*. <https://doi.org/10.1007/s13199-025-01034-5>
5. Varghese, E. M., Kour, B. S. Ramya, Krishna, P. D., Nazla, K.A, Sudheer, K., **Anith, K.N.**, Jisha, M.S. and Ramakrishnan. B. 2024. Rice in Acid Sulphate Soils: Role of Microbial Interactions in Crop and Soil Health Management. *Applied Soil Ecology*, 196, 105309. (IF 4.8).
6. Samyukta, S. M. S., Viji, M. M., Manju, R. V., **Anith, K. N.**, Nisha, S. K. and Beena, R. 2024. Synergy of biochar and biofertilizers to improve bell pepper fruit biochemical quality with increased soil carbon, *Azospirillum* population and mycorrhization. *Plant Science Today*, 11(4): 1605-1614.
7. Lekshmi, P. R. G., Aparna, G. S and **Anith, K. N.** 2024. Biochemical profiling and byproduct utilization of *Garcinia aril*. *Plant Science Today*, 11(sp3): 12-17.

8. Swathi, G. S., Thara, S. S., **Anith, K. N.**, Divya, S., Nair, C. B. and Jesna, N. B. 2024. Silver nanoparticles green synthesized using leaf extract of *Piper* spp. reduce *Phytophthora capsici* infection in black pepper (*Piper nigrum* L.). *Plant Science Today*, 11(sp3): 146-153.
9. ManjuBhargavi, Y., Rajan, S. A., Chitra, N., Soumya, V. I., Beena, R. and **Anith, K. N.** 2024. Pink Pigmented Facultative Methylootrophs (PPFMs) improve rooting in black pepper (*Piper nigrum* L.) cuttings and mitigate drought stress. *Plant Science Today*, 11(sp3): 43-53.
10. Shibana, S. N., Nair, D. S., Sreekala, G. S., Shalini, P. P., Alex, S., **Anith, K. N.** and Joseph, A. 2024. Growth, yield and secondary metabolite elicitation in response to chitosan application in turmeric (*Curcuma longa* L.). *Plant Science Today*, 11(sp3): 83-95.
11. Nandana, M. S. and **Anith, K. N.*** 2024. Biological management of rhizome rot in ginger (*Zingiber officinale*) plants and stored ginger seeds. *Plant Science Today*, 11(sp3): 124-136.
12. Amrutha, V., Reshma, M., Manju, R.V., **Anith, K.N.**, Gopinath, P.P., Sarada, S. and Beena, R., 2024. High temperature stress induced changes in physiological, biochemical, hormonal and gene expression patterns in contrasting tomato genotypes. *Plant Physiology Reports*, 29: 872–888.
13. Mani, K. M., Ameena, M., **Anith, K. N.**, Pratheesh, P. G., Adarsh, S. and Shifina, S. 2024. Altered physiological response in drought stressed rice plants upon root colonization with the beneficial endophytic fungus *Piriformospora indica* under field conditions. *Plant Science Today*, 11: 576-582.
14. Biji, C.L., Dagala, A.K., Sinha, M.G., Priyanka, N.D., Dhanasekaran, G., Suresh, S., Shahina, K., Nair, A.S., Sabu, K.K. and **Anith, K.N.** 2024. Transcriptome sequencing and differential expression analysis in bacterial wilt tolerant and susceptible clones of tomato (*Solanum lycopersicum* L.) following *Ralstonia solanacearum* infection. *Physiological and Molecular Plant Pathology*, 133, p.102360.
15. Varghese, E.M., Manirajan, B.A., **Anith, K.N.** and Jisha, M.S. 2024. Physicochemical properties of acid sulphate soil profoundly influence the composition of rhizobacterial community of rice (*Oryza sativa* L.). *Rhizosphere*, p.100971.
16. Siva, M., Sreeja, S.J., Thara, S.S., Heera, G. and **Anith, K.N.*** 2024. Screening and evaluation of bacterial endophytes of cowpea [*Vigna unguiculata* (L.) Walp.] for plant growth promotion and biocontrol potential. *Plant Science Today*, 11: 44-57. (IF 0.9).
17. Jacob, M.E., Nair, D.S., Sreekala, G.S., **Anith, K.N.**, Alex, S., Rani, T.S. and Viji, M.M. 2024. Chitosan seed priming enhanced germination and seedling growth in Ashwagandha (*Withania somnifera* (L.) Dunal.). *Medicinal Plants*, 16: 119-127.
18. Mani, K.M., Ameena, M., Johnson, J.M., **Anith, K.N.**, Pillai, P.S., John, J. and Beena, R., 2023. Endophytic fungus *Piriformospora indica* mitigates moisture stress in rice by modifying root growth. *Rhizosphere*, 28, p.100799. (IF 3.129).
19. Anjana, H.N., **Anith, K.N.** and Sabu, K.K. 2023. Growth promoting effects of endophytic fungus *Piriformospora indica* in small cardamom (*Elettaria cardamomum* Maton). *Symbiosis* 91: 79-89. <https://doi.org/10.1007/s13199-023-00949-1> (IF 2.5).

20. Siva, M., Sreeja, S. J., Susha S. Thara. Heera, G. and **Anith, K. N.*** 2023. Endophytic *Bacillus* spp. suppress *Rhizoctonia solani* web blight of bush cowpea. *Rhizosphere*, 25, 100682. (IF 3.129).
21. Bhavya, M.S.P., Manju, R.V., Viji, M.M., Roy, S., **Anith, K.N.** and Beena, R., 2023. Impact of biofertilisers on iron homeostasis and grain quality in the rice variety Uma under Elevated CO₂. *Frontiers in Plant Science*, 14, 1144905. (IF 6.627)
22. Divya, S., Anusree, A.R., Vigi, S., Jiji, S.G., Das, P.A., Dev, A.R., Thara, S.S., Varghese, E.M., Gopinath, P.P. and **Anith, K.N.*** 2023. Silver nanoparticles green synthesized with leaf extract of disease-resistant amaranthus genotypes effectively suppress leaf blight (*Rhizoctonia solani* Kühn) disease in a susceptible red amaranthus cultivar. *3 Biotech*, 13: 196. (IF 2.406).
23. Anju, A.B., Natarajan, C., Preetha, R., Rajan, S.A., Soumya, V.I. and **Anith, K. N.*** 2023. Bacterization with Endospore-forming *Bacillus* spp. Promotes Plant Growth and Suppresses Foot Rot Disease in Black Pepper (*Piper nigrum* L.) in the Nursery. *J Pure Appl Microbiol.* 17(2):768-779. doi: 10.22207/JPAM.17.2.02 (IF 0.8)
24. Nysanth, N.S., Rajan, S.A., Sivapriya, S.L., **Anith, K.N.*** 2023. Pink Pigmented Facultative Methylophiles (PPFMs): Potential Bioinoculants for Sustainable Crop Production. *J Pure Appl Microbiol.* 17(2):660-681. doi: 10.22207/JPAM.17.2.17 (IF 0.8)
25. Lekshmi, R. S., Sora, S., **Anith, K. N.**, and Soniya, E. V. 2022. Root colonization by the endophytic fungus *Piriformospora indica* shortens the juvenile phase of *Piper nigrum* L. by fine tuning the floral promotion pathways. *Frontiers in Plant Science*. <https://doi.org/10.3389/fpls.2022.954693> (IF 6.627)
26. Nysanth, N.S., Divya, S., Chitra B. Nair, Anju, A.B., Praveena, R. and **Anith, K. N.*** 2022. Biological control of foot rot (*Phytophthora capsici* Leonian) disease in black pepper (*Piper nigrum* L.) with rhizospheric microorganisms. *Rhizosphere* **23**: 100578. (IF 3.129)
27. Yshaswini, M.S., Nysanth, N.S. and **Anith, K. N.*** 2022. Endospore-forming phyllosphere bacteria from *Amaranthus* spp. suppress leaf blight (*Rhizoctonia solani* Kuhn) disease of *Amaranthus tricolor* L. *Journal of Tropical Agriculture* **60**: 95-108.
28. Benny, A., Alex, S., Soni, K.B., **Anith, K.N.**, Kiran, A.G. and Viji, M.M., 2022. Improved transformation of Agrobacterium assisted by silver nanoparticle. *BioTechnologia. Journal of Biotechnology Computational Biology and Bionanotechnology*, **103**:311-317.
29. Nysanth, N.S., Sivapriya, S.L., Natarajan, C. and **Anith, K. N.*** (2022) Novel *in vitro* methods for simultaneous screening of two antagonistic bacteria against multiple fungal phytopathogens in a single agar plate. *3 Biotech* **12**: 140. (IF 2.406).
30. Bijula, B.L., Alex, S., Soni, K.B., **Anith, K. N.**, Joy, M., Nair, D.S., Beena, R. and Benny, A. (2022) Algicidal Effects of Green Synthesized Silver Nanoparticles using *Tinospora cordifolia* on *Chlamydomonas reinhardtii*. *Journal of Pure and Applied Microbiology* **16**, 1122-1129. doi: 10.22207/JPAM.16.2.38 (IF 0.8)
31. Innazent, A., Jacob, D., Bindhu, J.S., Joseph, B., **Anith, K.N.**, Ravisankar, N., Prusty, A.K., Paramesh, V. and Panwar, A.S. (2022) Farm typology of smallholders integrated farming

- systems in Southern Coastal Plains of Kerala, India. *Scientific Reports* **12**: 1-14. (IF 4.379). <https://doi.org/10.1038/s41598-021-04148-0>
32. Yashaswini, M.S., Nysanth, M.S., and **Anith, K.N.*** (2021) Endospore-forming bacterial endophytes from *Amaranthus* spp. improve plant growth and suppress leaf blight (*Rhizoctonia solani* Kühn) disease of *Amaranthus tricolor* L. *Rhizosphere* **19**: 100387. (IF 3.129). <https://doi.org/10.1016/j.rhisph.2021.100387>
 33. **Anith, K.N.***, Nysanth, N.S., and Natarajan, C. (2021) Novel and rapid agar plate methods for *in vitro* assessment of bacterial biocontrol isolates' antagonism against multiple fungal phytopathogens. *Letters in Applied Microbiology* **73**: 229-236. (IF 2.858). <https://doi.org/10.1111/lam.13495>
 34. Rajkumari, N., Alex, S., Soni, K.B., **Anith, K.N.**, Viji, M.M. and Kiran, A.G. (2021) Silver nanoparticles for biolistic transformation in *Nicotiana tabacum* L. *3 Biotech* **11**: 1-7. (IF 2.406). <https://doi.org/10.1007/s13205-021-03043-9>
 35. Vyshakhi, A.S. and **Anith, K.N.*** 2021. Co-inoculation with the root endophytic fungus *Piriformospora indica* and endophytic bacteria improves growth of solanaceous vegetable seedlings. *International Journal of Vegetable Science* **27**:536-551.
 36. Paul, T., Nysanth, N.S., Yashaswini, M.S. and **Anith, K.N.*** (2021) Inoculation with bacterial endophytes and the fungal root endophyte, *Piriformospora indica* improves plant growth and reduces foliar infection by *Phytophthora capsici* in black pepper. *Journal of Tropical Agriculture* **59**: 224-235.
 37. Athira, P.V., Radhakrishnan, N.V. and **Anith, K.N.*** (2021) Seed biopriming and spraying at fruit set with microbial agents suppress anthracnose disease and improve growth and yield in chilli. *Journal of Tropical Agriculture* **59**: 273-285.
 38. Raj, S.K., Syriac, E.K., Kumari, K.S. and **Anith, K.N.** (2021) Compatibility of Pre-mix Herbicide Mixture, Penoxsulam 1.02%+ Cyhalofopbutyl 5.1% OD with Bio-fertilizer Organisms and Biocontrol Agents. *Pesticide Research Journal* **33**: 66-71. <https://doi.org/10.1080/19315260.2021.1885555>
 39. Gopi, G. K., Meenakumari, K. S., **Anith, K. N.**, Nysanth, N. S., and Subha, P. (2020) Application of liquid formulation of a mixture of plant growth promoting rhizobacteria helps reduce the use of chemical fertilizers in *Amaranthus* (*Amaranthus tricolor* L.). *Rhizosphere* **15**: 100212. (IF 3.129). <https://doi.org/10.1016/j.rhisph.2020.100212>
 40. Kollakkodan, N., **Anith, K.N.***, and Nysanth, N. S. (2021) Endophytic bacteria from *Piper colubrinum* suppress *Phytophthora capsici* infection in black pepper (*Piper nigrum* L.) and improve plant growth in the nursery. *Archives of Phytopathology and Plant Protection* **54**: 86-108. <https://doi.org/10.1080/03235408.2020.1818493> (IF 1.0)
 41. Athira, S., and **Anith, K.N.*** (2020) Plant growth promotion and suppression of bacterial wilt incidence in tomato by rhizobacteria, bacterial endophytes and the root endophytic fungus *Piriformospora indica*. *Indian Phytopathology* **73**: 629-642. <https://doi.org/10.1007/s42360-020-00283-2>

42. Nagamani, G., Alex, S., Soni, K. B., **Anith, K. N.**, Viji, M. M., and Kiran, A. G. (2019) A novel approach for increasing transformation efficiency in *E. coli* DH5α cells using silver nanoparticles. *3 Biotech* **9**: 113. (IF 2.406). <https://doi.org/10.1007/s13205-019-1640-9>
43. Jisha, S., **Anith, K. N.**, and Sabu, K. K. (2019) The protective role of *Piriformospora indica* colonization in *Centella asiatica* (L.) *in vitro* under phosphate stress. *Biocatalysis and Agricultural Biotechnology* **19**: 101088. <https://doi.org/10.1016/j.bcab.2019.101088> (IF 4.0)
44. **Anith, K. N.***, Aswini, S., Varkey, S., Radhakrishnan, N. V., and Nair, D. S. (2018) Root colonization by the endophytic fungus *Piriformospora indica* improves growth, yield and piperine content in black pepper (*Piper nigrum* L.). *Biocatalysis and Agricultural Biotechnology* **14**: 215-220. <https://doi.org/10.1016/j.bcab.2018.03.012> (IF 4.0)
45. Varkey, S., **Anith, K. N.***, Narayana, R., and Aswini, S. (2018) A consortium of rhizobacteria and fungal endophyte suppress the root-knot nematode parasite in tomato. *Rhizosphere* **5**: 38-42. (IF 3.129). <https://doi.org/10.1016/j.rhisph.2017.11.005>
46. Jisha, S., Gouri, P. R., **Anith, K. N.**, and Sabu, K. K. (2018) *Piriformospora indica* cell wall extract as the best elicitor for asiaticoside production in *Centella asiatica* (L.) Urban, evidenced by morphological, physiological and molecular analyses. *Plant Physiology and Biochemistry* **125**: 106-115. (IF 4.270). <https://doi.org/10.1016/j.plaphy.2018.01.021>
47. Binseena, S.R., Anitha, N., Paul, A., Amritha, V.S. and **Anith, K.N.** (2018) Management of rice weevil, *Sitophilus oryzae* using essential volatile oils. *Entomon* **43**: 277-280.
48. Kollakkodan, N., **Anith, K. N.***, and Radhakrishnan, N. V. (2017) Diversity of endophytic bacteria from *Piper* spp. with antagonistic property against *Phytophthora capsici* causing foot rot disease in black pepper (*Piper nigrum* L.). *Journal of Tropical Agriculture* **55**: 63-70.
49. Kumar, A. S., Meenakumari, K. S., and **Anith, K. N.*** (2016) Screening for Zn solubilisation potential of soil bacteria from Zn deficient soils of Kerala. *Journal of Tropical Agriculture* **54**: 194-200.
50. **Anith, K. N.***, Vaishakhi, A. S., Viswanathan, A., Varkey, S., and Aswini, S. (2016) Population dynamics and efficiency of coconut water based liquid formulation of *Pseudomonas fluorescens* AMB-8. *Journal of Tropical Agriculture* **54**: 184-189.
51. Lakshmipriya, P., Nath, V. S., Veena, S. S., **Anith, K. N.**, Sreekumar, J., and Jeeva, M. L. (2016) *Piriformospora indica*, a Cultivable Endophyte for Growth Promotion and Disease Management in Taro (*Colocasia esculenta* L.). *Journal of Root Crops* **42**: 107-114.
52. **Anith, K. N.***, Sreekumar, A. and Sreekumar, J. (2015) The growth of tomato seedlings inoculated with co-cultivated *Piriformospora indica* and *Bacillus pumilus*. *Symbiosis* **65**: 9-16. (IF 2.268). <https://doi.org/10.1007/s13199-015-0313-7>
53. **Anith, K. N.***, Soumya, V. G., Sreekumar, A., Raj, A. R. and Radhakrishnan, N. V. (2014) A cheap and farmer friendly method for mass multiplication of *Pseudomonas fluorescens*. *Journal of Tropical Agriculture* **52**: 145-148.
54. Lekshmi, R.S., Soni, K.B., Alex, S., Rajmohan, K. and **Anith, K.N.** (2014) Callus induction and *Agrobacterium tumefaciens* mediated transfer of hydroxy methyl glutaryl CoA reductase (HMGR) gene in *Centella asiatica* L. *Journal of Tropical Agriculture* **52**: 67-73.

55. Satheesan, J., **Anith, K. N.** and Sakunthala, M. (2012) Induction of root colonization by *Piriformospora indica* leads to enhanced asiaticoside production in *Centella asiatica*. *Mycorrhiza* **22**: 195-202. (IF 3.387). <https://doi.org/10.1007/s00572-011-0394-y>
56. **Anith, K. N.***, Faseela, K. M., Archana, P. A. and Prathapan, K. D. (2011) Compatibility of *Piriformospora indica* and *Trichoderma harzianum* as dual inoculants in black pepper (*Piper nigrum* L.). *Symbiosis* **55**: 11-17. (IF 2.268). <https://doi.org/10.1007/s13199-011-0143-1>
57. Nair, C. B. and **Anith, K. N.*** (2009) Efficacy of the plant activator, acibenzolar-S-methyl and rhizobacteria for the management of foliar blight disease of amaranthus. *Journal of Tropical Agriculture* **47**: 43-47.
58. **Anith, K. N.*** (2009) Mature coconut as a bio-fermentor for multiplication of plant growth promoting rhizobacteria. *Current Science* **97**: 1647-1653. (IF 1.102)
59. **Anith, K. N.*** and Roy Stephen (2009) Alginate entrapped bacteria for better root colonization and plant growth promotion in black pepper in the nursery. *Journal of Plantation Crops* **37**: 94-96.
60. Prathapan, K.D., Faizal, M.H. and **Anith, K.N.** (2009) *Cleonaria bicolor* Thomson (Coleoptera: Cerambycidae): a new pest of Ixora. *Entomon* **34**: 201-204.
61. Prathapan, K.D., **Anith, K.N.**, Faizal, M.H., Lekha, M. and Dhanya, M.K., 2008. A report on *Sipyloidea stigmata* Redtenbacher (Diapheromeridae: Necrosciinae) as the first phasmid crop pest in India and its redescription. *Zootaxa* **1959**: 58-64. (IF 1.091). DOI: 10.11646/ZOOTAXA.1959.1.3
62. Nair, C. B., **Anith, K. N.*** and Sreekumar, J. (2007) Mitigation of growth retardation effect of plant defense activator, acibenzolar-S-methyl in amaranthus plants by plant-growth promoting rhizobacteria. *World Journal of Microbiology and Biotechnology* **23**:1183-1187. (IF 3.312). <https://doi.org/10.1007/s11274-006-9333-z>
63. Faizal, M.H., Prathapan, K. D., **Anith, K. N.**, Mary, C. A., Lekha, M. and Rini, C. R. (2006) *Erythrina* gall wasp *Quadrastichus erythrinae*, yet another invasive pest new to India. *Current Science* **90**: 1061-1062. (IF 1.102)
64. Prathapan, K.D., Faizal, M.H. and **Anith, K.N.** (2005) A new species of Longitarsus (Coleoptera: Chrysomelidae) feeding on Chinese potato, *Plectranthus rotundifolius* (Lamiaceae) in southern India. *Zootaxa* **966**: 1-8. (IF 1.091)
65. **Anith, K. N.**, M. T. Momol, J. W. Kloepper, J.J. Marois, S. M. Olson and J. B. Jones (2004) Efficacy of plant growth promoting rhizobacteria, acibenzolar-S-methyl and soil amendment for integrated management of bacterial wilt on tomato. *Plant Disease* **88**: 669-673. (IF 4.438). <https://doi.org/10.1094/PDIS.2004.88.6.669>
66. **Anith, K. N.***, Radhakrishnan, N. V. and Manomohandas, T. P. (2003) Screening of antagonistic bacteria for biological control of nursery wilt of black pepper (*Piper nigrum* L.) *Microbiological Research* **158**: 91-97. (IF 5.415). <https://doi.org/10.1078/0944-5013-00179>
67. **Anith, K. N.***, Radhakrishnan, N. V. and Manomohandas, T. P. (2002) Management of nursery wilt of black pepper (*Piper nigrum*) with antagonistic bacteria. *Current Science* **83**: 561-562. (IF 1.102)
68. **Anith, K. N.*** and Manomohandas, T. P. (2001) Combined application of *Trichoderma* and *Alcaligenes* sp. strain AMB 8 for controlling nursery rot (*Phytophthora capsici*) of black pepper (*Piper nigrum*). *Indian Phytopathology* **54**: 335-339.

69. **Anith, K.N.***, Manomohandas, T.P., Jayarajan, M., Vasanthakumar, K. and Aipe, K.C., 2000. Integration of soil solarization and biological control with a fluorescent *Pseudomonas* sp. for controlling bacterial wilt *Ralstonia solanacearum* (EF Smith) Yabuuchi et al. of ginger. *Journal of Biological Control* **14**: 25-29.
70. **Anith, K. N.***, Tilak, K. V. B. R. and Manomohandas, T. P. (1999) Analysis of mutation affecting antifungal property of a fluorescent *Pseudomonas* sp. during cotton *Rhizoctonia* interaction. *Indian Phytopathology* **52**: 366-369.
71. **Anith, K. N.***, Tilak, K. V. B. R. and Khanuja, S. P. S. (1999) Molecular basis of antifungal toxin production by fluorescent *Pseudomonas* sp. strain EM85 – A biological control agent. *Current Science* **77**: 671-677. (IF 1.102)
72. **Anith, K. N.***, Tilak, K. V. B. R., Khanuja, S.P.S. and Saxena, A. K. (1998) Cloning of genes involved in the antifungal activity of a fluorescent *Pseudomonas* sp. *World Journal of Microbiology and Biotechnology* **14**: 939-941. (IF 3.312).

***Corresponding Author**

Other journal publications (not indexed by Scopus)

1. Sivapriya, S. L. and **Anith, K, N.** 2024. Isolation, Characterization, and Screening of Endospore Forming Endophytic Bacteria from Cowpea [*Vigna unguiculata* (L.) Walp.] for Plant Growth Promotion and Abiotic Stress Mitigation. *International Journal of Plant & Soil Science*, 36, 214-227.
2. Satheesh, A., Raj, S.K., Jacob, D., Pillai, S. and **Anith, K.N.**, 2024. Co-composting: A Comprehensive Review of Its Potential in Transforming Coir Pith Waste into Nutrient-rich Manure. *International Journal of Environment and Climate Change*, 14: 208-218.
3. Divya, S., Das, A., Anusree, A.R. and **Anith, K.N.** (2022) The root endophytic fungus *Piriformospora indica* as a bio-hardening agent for tissue cultured plantlets. *Biotica Research Today*, **4**: 69-271.
4. Nandana, M.S., Subhash, A.P., Sivapriya, S.L. and **Anith, K.N.** (2022) Impact of climate change on plant-microbe interactions. *Biotica Research Today* **4**: 275-277.
5. Sivapriya, S.L., Subhash, A.P., Nandana, M.S., Vigi, S. and **Anith, K.N.** (2021) Plant Microbiome: The unseen lifeforms helping crops cope with biotic and abiotic stress. *Biotica Research Today* **3**: 1008-1010.
6. Nysanth, N.S., Sivapriya, S.L., Yashaswini, M.S. and **Anith, K.N.** (2021) Pink Pigmented Facultative Methylophs (PPFMs): Bioinoculants for sustainable green agriculture. *Biotica Research Today* **3**: 975-978.
7. Yashaswini, M.S., Nysanth, N.S. and **Anith, K.N.** (2021) Bacterial endophytes: Potential role in plant growth promotion. *Biotica Research Today* **3**: 733-736.
8. Subhash, A.P., Nandana, M.S., Sivapriya, S.L. and **Anith, K.N.** (2021) Microbial inoculants for mineral nutrient solubilization and mobilization. *Biotica Research Today* **3**: 957-960.
9. Visveswaran, S., George, T., Aparna, B., **Anith, K.N.** and Visal, S. (2021) Dissipation kinetics and distribution of fipronil and its toxic metabolites in Banana, cv. Nendran (AAB). *International Journal of Chemical Studies* **9**: 449-452.
10. Akhilraj, B.C., Nair, D.S., Sreekala, G.S., **Anith, K.N.** and Sajitharani, T. (2020) Effect of physical seed pretreatments on morphology and yield of *Ocimum basilicum* L. *Journal of Pharmacognosy and Phytochemistry* **9**: 2631-2635.

11. Nandana, M.S. and **Anith, K.N.** (2020) Growth promotion in chilli (*Capsicum annuum* L.) on inoculation with co-cultured *Piriformospora indica* and *Pseudomonas fluorescens*. *International Journal of Current Microbiology and Applied Sciences* **9**: 2015-2027.
12. Mampallil, L.J., Faizal, M.H. and **Anith, K.N.** (2019) Bioefficacy and characterization of bitter gourd phylloplane bacteria against chewing pests. *Bulletin of Environment, Pharmacology and Life Science* **8**: 106-112.
13. Jisha, S., **Anith, K. N.** and Sabu, K.K. (2019) Acid/alkaline phosphatase and super oxide dismutase activities in *Centella asiatica* on *Piriformospora indica* co-cultivation. *Trends in Biosciences* **12**: 96-99.
14. Mampallil, L.J., Faizal, M.H. and **Anith, K.N.** (2017) Bacterial bioagents for insect pest management. *Journal of Entomology and Zoology Studies* **5**: 2237-2244.
15. Raj, S.K., Syriac, E.K., **Anith, K.N.** and Meenakumari, K.S. (2017) Compatibility of biocontrol agents and N fixing organisms with post emergence pre-mix herbicide-bispyribac sodium+ metamifop 14% SE. *Journal of Applied and Natural Science* **9**: 1510-1514.
16. Naik, M.R., Ajithkumar, K., Santhoshkumar, A.V. and **Anith, K.N.** (2017) Flowering and physiological traits of Dendrobium Cv. earsakaul as influenced by various nutrients and microclimatic conditions. *Bulletin of Environment, Pharmacology and Life Sciences* **6**: 50-54.
17. Dhinesh, D., Ajithkumar, K., Naik, M.R., Sureshkumar, P., Santhoshkumar, A.V. and **Anith, K.N.** (2015) Influence of *Piriformospora indica* on growth and flowering of tropical orchid Dendrobium. *International Journal of Tropical Agriculture* **33**: 487-492.
18. George, G.M., Lekshmi, P.G., Mini, C., **Anith, K.N.** and Manju, R.V. (2015) Evaluation of sanitization treatments for red amaranthus (*Amaranthus tricolor* L.). *International Journal of Processing and Post Harvest Technology* **6**: 144-149.
19. Faizal, M.H., **Anith, K.N.**, Prathapan, K.D., Stephen, R. and Faseela, K.M. (2006) Beetle-fungus association leads to death of gall wasp infested *Erythrina* trees. *Insect Environment* **12**: 117-118.
20. Manomohandas, T.P., **Anith, K.N.**, Gopakumar, S. and Jayaranja, M. (2001) Kodampuli—a fruit for all reasons. *Agroforestry Today* **13**: 7-8.
21. Pradeepkumar, T., Vasanthkumar, A.K., Kumaran, K., Susamma, P.G., Manmohandas, T.P. and **Anith, K.N.** 1999. Studies on yielding behaviour of black pepper CV Panniyur-I. *Indian Journal of Arecanut, Spices and Medicinal Plants* **1**: 88-90.

Other publications

Book Chapter

1. Zargar, M.Y. and **Anith, K. N.** (2004) Biological control of plant diseases with plant growth promoting rhizobacteria (PGPR): Role of induced systemic resistance (ISR). Khan, M.A. and Zargar, M.Y (eds) *Agriculture and Environment*. APH Publishing House, New Delhi, India. pp 59-66. ISBN 10: 9788176486033
2. Girija, V. K. and **Anith, K. N.** (2006) *Bacillus* as biological control agents of plant diseases. Trivedi, P. C. (ed) *Applied Microbiology*. Agribios (India), Jodhpur. pp 97-111. ISBN 10: 8177542842

3. Eapen, S.J., Anith, K.N., Praveena, R. and Dinesh, R., 2023. Microbial Inoculants for Sustainable Plant Health. In *Handbook of Spices in India: 75 Years of Research and Development* (pp. 4055-4105). Singapore: Springer Nature Singapore.

Publication credentials

1. Authored 68 Scopus indexed research publications with 799 citations (<https://www.scopus.com/authid/detail.uri?authorId=57224335155>)
2. Highest *h* index in Scopus among the scientists currently working in KAU
3. 1501 citations with an *h* index of 23 in Google Scholar (<https://scholar.google.com/citations?user=j41jFA4AAAAAJ&hl=en>)

Fellowships and awards received:

- | | |
|-----------|---|
| 1991-1993 | Indian Agricultural Research Institute- Junior fellowship for M. Sc in Microbiology |
| 1993-1997 | Indian Agricultural Research Institute- Senior fellowship Ph. D in Microbiology |
| 2002-2003 | BOYSCAST (Better opportunity for Young Scientists in Chosen Areas of Science and Technology) fellowship instituted by Department of Science and Technology, Government of India to do post-doctoral research abroad (University of Florida, USA). |

Research Projects: Completed

1. Exploitation of the endosymbiotic fungus *Piriformospora indica* for biotic and abiotic stress management in black pepper (*Piper nigrum* L.). Funded by Kerala State Council for Science Technology and Environment, Government of Kerala, India
2. Role of bacterial endophytes in plant defense mechanisms against *Phytophthora capsici* in black pepper (*Piper nigrum* L.). Funded under Department of Science and Technology, Government of India
3. Development of bacterial endophytes for insect pest management. Funded by Kerala Biotechnology commission, Kerala State Council for Science Technology and Environment, Government of Kerala, India
4. Exploitation of bacterial endophytes of *Piper* spp. from western Ghats for the management of *Phytophthora capsici* infecting black pepper (*Piper nigrum* L.). Funded by Western Ghat Development Program, Government of Kerala.

Research Projects: Ongoing

1. Network project on Utilization of Beneficial endophytes for plant growth promotion and management of plant diseases in important crops of Kerala. Funded by Planning Board, Government of Kerala.
2. All India Network Project on Soil Biodiversity and Biofertilizers. Funded by Indian Council of Agricultural Research.

Student Guidance (As Major Advisor):

M.Sc: Completed: 16 **Ph.D:** Completed: 1 On-going: 5

Courses Taught:

- UG:** Agricultural microbiology (2+1)- Odd Semester
PG: Principles of Microbiology (3+1)- Odd Semester
Microbial Physiology and Metabolism (3+1)- Odd Semester
Microbial Genetics (2+1)- Even Semester
Food Microbiology (2 +1)- Even Semester
Ph.D: Advanced Microbial Physiology (2+0) -Even Semester
Current Topics in Soil Microbiology (2+0)- Odd Semester
Plant Microbe Interaction (3+0)- Odd Semester

Other activities responsibilities

1. Currently holding full additional charge of Associate Director of Research, Regional Agricultural Research Station (Southern Zone), Vellayani from 05.09.2022
2. Worked as Assistant Warden of Undergraduate Men's hostel from 2003 to 2012
3. Currently Chairman of committee to monitor "Prevention of Caste-based Discrimination in Higher Education Institutions" at College of Agriculture, Vellayani campus.

Membership in Professional Associations

1. Three Year full Global Outreach membership in International Symbiosis Society (starting March 2022).