Mrs. Divya S

Assistant Professor,
Department of Plant Pathology,
College of Agriculture, Vellayani

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Summary

Plant Pathologist specialized in the biological control of plant diseases. Expertise in research on biocontrol agents, their mass multiplication and their effect on plant disease management. Future work plans are to develop a farmer-friendly endophytic microbial formulation for plant disease management and to study the biochemical and molecular mechanisms involved in disease management and plant growth promotion. In addition, now working in the field of nanotechnology for plant disease management.

Research Highlights

Developed vermicompost-based medium for mass multiplication of *Trichoderma harzianum* and *Glomus fasciculatum* as part of the masters program under the guidehip of Dr S K Nair ,Professor,Microbiology.

Experience

More than 20 years experience in teaching.

- Joined Kerala Agricultural University as **Assistant Professor** (Plant Pathology) in 2021(From 17/02/2021 onwards)
- Served as **Agricultural Officer** for 3 years and 11 months in the Department of Agriculture Development and Farmer's Welfare (From 07/04/2003 to 07/06/2007)
- Served as **Vocational Teacher in Agriculture** for 13 years,8 months in VHSE Department (From 08/06/2007 to 16/02/2021) &as **Principal**
- Worked as **Junior Research Fellow** in the STED research project on 'Vermicompost based mycoinoculants for plant disease control' (2000-2002).

Education

- Graduated in Agricultural Science from Kerala Agricultural University (2000) (**First Rank)**
- Post Graduation in Plant Pathology from Kerala Agricultural University (2002) (**First Rank)**

Area of Specialization

Biological Control of Plant Diseases, Nanotechnology in Plant Disease Management

Awards & Recognitions

- **Best Teacher-State Award 2015** (while working as Principal in the Vocational Higher Secondary Education Department)
- **First Rank** for B Sc (Agriculture), KAU(2000)
- **First Rank** for M Sc(Plant Pathology),KAU(2002)
- **First Rank** for PSC examination for the post of Agricultural Officer (2002)
- **Dr. Abraham Thomas Memorial award** for securing the highest mark in B Sc (Agriculture)
- **Dr. N. Kunjan Pillai Memorial award** for securing the highest mark in B Sc (Agriculture)
- **Kerala Agricultural University Merit Scholarship** (1995-2000)
- **KSCSTE fellowship** for doing M.Sc in Plant Pathology
- **Best poster award** in the delegate category under the Agri and food science section in the 35th Kerala Science Congress held during 12-14 February 2023 at Mar Baselios Christian College of Engineering and Technology, Kuttikkanam, Idukki.

Research Projects (as Principal Investigator)

Completed :**1**

Green synthesized nanoparticles using extracts of disease-resistant Amaranthus genotypes for leaf blight management in red Amaranthus- State Plan project 2022-23

Observational Trial

Completed :**1**

'Management of leaf blight disease of Amaranthus with green synthesized silver nanoparticles using leaf extracts of disease resistant Amaranthus genotypes'2022-23

Research Projects (as Co-PI)

Ongoing: 2

Publications

Journal Articles

1. **Divya, S.,** Anusree, A. R., Vigi, S., Jiji, S. G., Akshaya Das, P., Rahul Dev, A. S., Susha S. Thara., Edna Mary Varghese., Pratheesh P. Gopinath. 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.

2. Nysanth, N.S., **Divya, S**., Nair, C.B., 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: 100578-100588.

3. Gokulapalan, C., Girija. and **Divya, S.** 2006. *Fusarium pallidoroseum* causes fasciation and yield loss in vegetable cowpea (*Vigna unguiculata* var. *sesquipedalis*). *Journal of Mycology and Plant Pathology*.36(1):36-37.

4. Amritha S. Kartha., Susha S. Thara. and **Divya, S.** 2023. Evaluation of *in vitro* efficacy of fungicides against *Fusarium proliferatum* inciting root rot of cassava. *The pharma Innovation Journal*.12 (5): 3261-3263

Book chapters

1. **Divya, S.,** Vyshnavi, A.S., Nandana, M.S., Aashitha Joy. and Anith, K.N.2023.Impact of Climate Change on Plant-Microbe Interactions with Special Emphasis on Plant Pathogens.India and climate change -Issues and challenges (ed. Deepika, V. S.)-Published by Serials Publications Pvt. Ltd. New Delhi-110002. 175-193
2. Akhil, G. L., **Divya, S.,** Aashitha Joy. and Susha S. Thara.2023. Comparative assessment of different species of Pleurotus for the presence of bioactive compounds. Proceedings of International Conference on Recent Advances in Biological Science (ed. Suhara Beevy, S., Darsan B. Menon., Saranya, M. K., Anil Kumar, T. R. and Mariamma Cherian.) -Published by iCEIB, University of Kerala, Kariavattom, Thiruvananthapuram. 12-19.
3. **Divya, S**., Nair, S. K., Anith, K.N., Aashitha Joy. and Susha S. Thara. 2022. Vermicompost-based carrier materials for the mass multiplication of biocontrol agents.In Trends in Advanced Biology (ed. Suhara Beevy, S., Mariamma Cherian., Darsan B. Menon., Anil Kumar, T. R. and Mini, V.S.) -Published by iCEIB, University of Kerala, Kariavattom, Thiruvananthapuram. 399-407.
4. Susha S. Thara., Deepthi S. Nair., **Divya S**. and Aashitha Joy. 2022. Etiology of fungi causing leaf rot disease of coconut in Kerala. In Trends in Advanced Biology (ed. Suhara Beevy, S., Mariamma Cherian., Darsan B. Menon., Anil Kumar, T. R. and Mini, V.S.) -Published by iCEIB, University of Kerala, Kariavattom, Thiruvananthapuram. 95-105.

Popular articles

1. **Divya, S.,** Susha S. Thara. and Aashitha Joy.2023. *Pachakarivilakalile Mazhakkala Rogangalum Niyanthrana Margangalum*.Kalpadhenu. April – June 2023, p:13 - 21.
2. **Divya, S.,** Susha S. Thara. and. Aashitha Joy. 2022. *Venelkala Sasyarogangalum Niyanthrana margangalum*. Kalpadhenu. January - March 2022, p:21-25.
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. **Divya, S.**2000.*Thenginu idavila engane nadanam*. Karshakasree. September 2000, p:22.
5. **Divya, S**.2000.*Veettu valappile pachakkari Krishi.* Kerala.Karshakan. November 2000, p:31-32.
6. **Divya, S**.2000.*Purple niramulla nelchedi*. Kerala Karshakan. November 2000, p:10.
7. **Divya, S**.2000.*Rasavamillathe veettuvalappil pachakkarikrishi*. Mathrubhumi daily.05 January 2001.

Papers in Seminars and Symposiums

Full paper

1. **Divya, S.** and Nair, S. K. 2003. Influence of vermicompost based mycoinoculants on plant growth and management of foot rot disease in black pepper. In: *Abstracts and short papers of 6th international workshop on PGPR*, 5-10 October 2003, Calicut,p:24-29.
2. Susha S. Thara., Binitha, N. K., Mubarack, O. P., Aashitha Joy. and **Divya, S**. 2022. Caterpillar mushroom fungi - an innovative approach for crop diversification in farming systems of Kerala. In: *Proceedings of International seminar on sustainable urban Agricultural systems and community resilient cities*, 22 March 2022, College of Agriculture, Vellayani,p:73-80.

Abstracts:

1. Vigi, S., Anusree, A.R., **Divya**, **S.,** Nair, C.B. and Anith, K.N.2023.Spraying seeds with endospore-forming beneficial bacteria during processing ensures growth promotion and disease protection. In: *Abstract cum souvenir of 8th Asian PGPR Society for Sustainable Agriculture -National Conference on Beneficial Microbes for Integrated Plant Health Management*, 19-21 September 2023, College of Horticulture, GKVK, Bengaluru, p:
2. Varsha S. Nair., **Divya, S.,** Susha S. Thara., C.B. Nair. and Anith, K.N. 2023. Silver nanoparticles green synthesized using leaf extract of *Piper longum* for the management of anthracnose in chilli. In:

Abstracts of papers of National Symposium on Plant Health Management: Current Trends and Novel Mitigation Strategies, 11 -12 September 2023, Central Tuber Crops Research Institute, p:103-104

3. **Divya, S.,** Susha S. Thara. and Anith, K. N. 2023. Silver nanoparticles green synthesized with leaf extracts of disease-resistant amaranthus genotypes protect red amaranthus from leaf blight disease severity. In: *Proceedings of 35th Kerala Science Congress*,10- 14 February 2023, Idukki, p: 48-49.
4. Susha S. Thara., Deepthi S. Nair., **Divya, S.** and Aashitha Joy. 2023. Development of biologically intensified disease management strategy for leaf rot of coconut. In: *Proceedings of 35th Kerala Science Congress*,10- 14 February 2023, Idukki, p: 55.
5. Ajay, B., Austin Raj, K. S., **Divya, S.** and Susha S. Thara. 2023. *In vitro* study on the effect of nanoparticles on *Rhizoctonia solani*, the leaf blight pathogen of red amaranthus. In: *Abstract book* of *International Conference on Recent Advances in Biological Sciences*,17-19 January 2023, p: 99
6. Swetha B. Nair., Ajay, B., Neethu, M. M., Susha S. Thara. and **Divya, S**. 2023. *In vitro* evaluation of nanoparticles for the management of leaf rot disease of coconut. In: *Abstract book* of *International Conference on Recent Advances in Biological Sciences*,17-19 January 2023, p:96.
7. Akhi, G. L., **Divya, S**., Aashitha Joy. and Susha S. Thara. 2023. Comparative assessment of different species of *Pleurotus* for the presence of bioactive compounds. In: *Abstract book* of *International Conference on Recent Advances in Biological Sciences*,17-19 January 2023, p: 89.
8. Athira Babu, B.M., **Divya, S.** and Anith, K. N. 2023. The root endophytic fungus *Piriformospora indica* and the chemical activator Acibenzolar-S-Methyl (ASM) induce defense in Amaranthus (*Amaranthus tricolor* L.) and suppress leaf blight disease. In: *Abstract book* of *International Conference on Recent Advances in Biological Sciences*,17-19 January 2023, p:53.
9. Akhil, G. L., Susha S. Thara., Aashitha Joy. and **Divya, S**. 2022. Evaluation of bioactive compounds of Oyster mushrooms. In: *Proceedings of National conference on Mycology and mankind: Marching ahead in the new era (Virtual) &48th Annual meeting of Mycological Society of India*, 8-10 March 2022, p:51-52.
10. Athira Babu, B.M., **Divya, S.** and Anith, K. N. 2022. Combined application of the root endophytic fungus *Piriformospora indica* and chemical activator Acibenzolar-S-Methyl (ASM) suppresses leaf blight of amaranthus (*Amaranthus tricolor* L.) In: *Proceedings of National conference on Mycology and mankind: Marching ahead in the new era (Virtual) &48th Annual meeting of Mycological Society of India*, 8-10 March 2022, p:82.
11. **Divya, S**., Nair, S. K., Anith, K.N., Aashitha Joy. and Susha S. Thara. 2002.Vermicompost-based carrier materials for the mass multiplication of biocontrol agents. In: *Abstract book* of *International conference on advanced biology*,23-25 February 2022,p:79.
12. Susha S. Thara., Deepthi S. Nair., **Divya, S.** and Aashitha Joy. 2002.Etiology of fungi causing leaf rot disease of coconut in Kerala. In: *Abstract book of International conference on advanced biology*,23-25 February 2022, p:157.
13. Gayathri Nair., **Divya, S.** and Anith, K. N.2022. Managing leaf blight of Amaranthus (*Amaranthus tricolor* L.) from above and below ground: Use of phylloplane antagonistic bacteria and the root endophytic fungus *Piriformospora indica*. In: *Proceedings of 34th Kerala Science Congress*,10- 12 February 2022, Thiruvananthapuram, p:73-74.
14. Susha S. Thara., Deepa R. Chandran., Saranya Krishnan., Aashitha Joy. and **Divya, S**.2022.Effect of biocontrol agents on post-harvest disease management and organoleptic properties of banana. In: *Proceedings of 34th Kerala Science Congress*,10- 12 February 2022, Thiruvananthapuram, p: 282.

Leaflets publihed:8

Student Guidance (Major Advisor)

M. Sc.
Outside KAU: Completed:1

Within KAU: Ongoing:2

Student Guidance (Advisory Committee member)

M. Sc. Completed:1, Ongoing:5

Ph. D Ongoing: 2

Extension activities

Trainings/Classes handled: 33

Radio talks/FIB live :3

Conducting field visits as part of Karshaka Santhwanam

Other Institutional Responsibilities

1. Student advisor to 10 undergraduate students.
2. Assistant coordinator of the group of class teachers
3. Member of scholarship felicitation cell at College of Agriculture, Vellayani

Membership in Professional Associations

1. Life membership in the Indian Phytopathological Society
2. Life membership in the Asian PGPR Society

Trainings/courses attended:11

Seminars/ Symposium/Workshops/Conferences attended:24