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## Summary

As an Agronomist, my research focus has been mainly on enhancing the productivity, sustainability and resource use efficiency of rice and rice based cropping systems, considering the diverse agro-climatic and agro-ecological situation of Kerala. As a part of my assigned duties I had also been associated with crop – weather relation studies and agromet advisory services.

### Research Highlights

- Standardized and integrated nutrient management schedule for rice based cropping systems in the sandy loam soils of Onattukara tract.
- Established a Leaf tissue analytical laboratory which is currently being operated in a revolving fund mode.

### Experience

- Joined Kerala Agricultural University as Assistant Professor (Agronomy) in the year 1999
- Served at Kelappaji College of Agricultural Engineering and Technology, Tavanur, Malappuram
- Served at Krishi Vigyan Kendra, Kollam
- Served at Regional Agricultural Research Station (Southern Zone), Vellayani
- Present – Department of Agronomy, College of Agriculture, Vellayani

### Education

- Graduated in B.Sc. (Agriculture) from Kerala Agricultural University in 1989
- Acquired Master's Degree in Agronomy from Kerala Agricultural University in 1992
- Acquired Ph.D in Agronomy from Kerala Agricultural University in 1999

### Area of Specialization

Cropping system research with special reference to rice and rice based cropping systems; soil nutrient dynamics and integrated nutrient management;

### Awards & Recognitions

- First rank in B.Sc.(Agriculture) in 1989
- T. C. Joseph Memorial Fund Prize (1989)
- E. P. Madhavan Nair Memorial Endowment Prize (1988-'89)
- Dr. Abraham Thomas Memorial Endowment Prize (1988-'89)
- Dr. N. Kunjan Pillai Memorial Endowment Prize (1988-'89)
- Jawaharlal Nehru Memorial Fund Award (1989-'90)
- ASPEE Cash Award (1988-'89)
- Best Teacher Award of Kerala Agricultural University in 2011.
- Felicitated by the General Council, Kerala Agricultural University, on 27<sup>th</sup> July, 2013 for securing the Best Teacher Award 2011.
- Dr. N. P. Kumari Sushama Memorial Award for the Best Teacher 2015-'16
- Dr. N.P. Kumari Sushama Memorial Award for the Second Best Teacher 2014-'15, 2017-'18, 2018-'19
- Best Paper Award at the National Seminar on Sustainable Agriculture and Food Security (SAFS 2012) held at CCS Haryana Agricultural University, Hisar
- Best Poster Award at the International Rice Symposium 2015 held at the Indian Institute of Rice Research, Hyderabad.
- Registration of design granted for the Seed Cum Fertilizer Drill by the Patent Office, Government of India (Dr. Sheeja, K. Raj, Dr. Jacob, D., Dr. Shalini Pillai P., Ms. Seethal Rose Chacko, Mr. Dhanu Unnikrishnan, Ms. Krishnasree, R. K. and Ms. Anitrosa Innazent) (Patent Certificate No. 127005 and Design No. 359570-001 dated 28/02/2022 by the Patent office of Government of India)

- Registration of design granted for the Wheel Hoe Weeder by the Patent Office, Government of India (Dr. Jacob D., Dr. Sheeja K. Raj, Dr. Shalini Pillai P., Ms. Navyashikha, Ms. Sneha S.R., Ms. Arunima Babu C.S and Ms. Namitha V.V.) (Patent certificate No, 10096 and design No. 346280-001 dated 11/8/202021 by the Patent office of Government of India)
- Certificates of Appreciation from Hon. Vice-Chancellor, Kerala Agricultural University for the Design Patent for “Wheel Hoe Weeder” and “Seed Cum Fertilizer Drill”.

## Research Projects

### Principal Investigator

- Establishment of Leaf / Tissue Analytical Laboratory at College of Agriculture, Vellayani
- Assessment of crop weather relations and formulation of crop weather advisories in the southern region of Kerala
- Crop weather relation studies in rice under changing climate (southern region)
- Productivity enhancement in coconut based cropping system through vertical intensification

### Co-ordinator

- Network project on Crop- weather relation studies (13 sub-projects)
- Umbrella project on Climate change adaptaion (13 sub-projects)

### Co-Principal Investigator

- Establishment of pest and disease forecasting unit
- Standardisation of quality vegetable seed production technology for South Kerala and promotion through group approach
- Crop response studies using open top chamber in selected crops
- Strengthening agromet advisory services in the southern zone of Kerala
- Field Management Research Laboratory of Agronomy

## Publications

### Journal Articles

1. Pillai, P. S., Geethakumari, V. L. and Isaac, S. R. 2008. Balance sheet of soil nitrogen in rice (*Oryza sativa* L.) based cropping systems under integrated nutrient management. *Indian J. Agron.* 52 (1) :
2. Pillai, P. S. and Tulasi, T. 2008. Production potential and nutrient use efficiency of basmati rice (*Oryza sativa* L.) under integrated nutrient management. *Green Fmg* 1 (9): 11-13.
3. Pillai, P. S. 2010. Quality evaluation of basmati rice (*Oryza sativa* L.) grown in the lowlands of south Kerala. *Curr. Adv. Agric. Sci.* 2 (2): 83-86.
4. Pillai, P. S. and Isaac, S.R. 2011. Comparative energy use efficiency of rice based cropping systems under INMS. *Indian J. Agric. Res.* 45 (1): 83 – 86.
5. Pillai, P. S. and Isaac, S.R. 2011. Response of rice (*Oryza sativa* L.) to integrated nutrient management in sandy loam soil. *Adv. Plant Sci.* 24 (1): 157–160.
6. Pillai, P. S. and Rajasree, G. 2012. Climate variability and its possible impact on rice production in southern Kerala. *Current Adv. Agric. Sci.* 4 (1): 25-28.
7. Jinsy, V. S., Pillai, P. S., and John, J. 2015. Productivity analysis of aerobic rice in the lowlands of southern Kerala. *J. Trop. Agric.* 53(1): 01-07.
8. Reshma, R. S., Pillai, P. S., and George, S.. 2015. Efficacy and economics of weed management strategies in aerobic rice (*Oryza sativa* L.). *Curr. Adv. Agric. Sci.* 7(1): 73-75.
9. Surya, M. S. And Pillai, P. S. 2015. Effect of flaf leaf nutrition on yield attributes and yield of lowland rice (*Oryza sativa* L.). *Curr. Adv. Agric. Sci.* 7(2): 182-185.
10. Umkhulzum, S. F., Ameen, M., and Pillai, P. S. 2018. Comparative efficacy of herbicides against rock bulrush *Schoenoplectus juncooides* (Roxb.) Palla in wet seeded rice. *Indian J. Weed Sci.* 50(4): 395-398.
11. Madankumar, M., John, J., Pillai, P. S., and Rani, B. 2019. Wedd dynamics in crop + fish farming systems in summer fallow of double cropped lowland rice fields. *J. Trop. Agric.* 57(1): 97-103.
12. Mavarkar, V., Pillai, P. S., and Radhakrishnan, N. V. 2019. Nutrient scheduling for baby corn (*Zea mays* L.) intercropped in coconut garden. *Int. J. Curr. Microbiol. Appl. Sci.* 8(9): <https://doi.org/10.20546/ijcmas.2019.809.070>
13. Sheeba, S. S., Pillai, P. S., and Mini, V. 2019. Development of Zn – B mix for rice in Southern Laterites (AEU 8) of Kerala, India. *Green Fmg* 10(3):297-300.
14. Aswathy, J. C., Pillai, P. S., John, J., and Meenakumari, K. S. 2020. Effect of pink pigmented facultative methylotrophs (PPFM) on growth and growth attributes of rice. *Int. J. Chem. Stud.* 8(4): 3209-3213.
15. Pillai, P. S. And Surya M. S. 2021. Physiological response of flag leaf nutrition in rice (*Oryza sativa* L.). *Int. J. Curr. Microbiol. Appl. Sci.* 10(2): <https://doi.org/10.20546/ijcmas.2021.1002.xx>
16. Reddy, D. R., Pillai, P. S., John, J., Sajeena, A., and Aswathy, J. C. 2021. Growth and yield of pulses as influenced by intercropping with finger millet (*Eleusine coracana* (L.) Gaertn.) in the Southern Laterites of Kerala. *Legume Res.* DOI:10.18805/LR-4480
17. Gafoor, R. A., Pillai, P. S., Nishan, M. A., and Rani, T. S. 2021. Performance of finger millet (*Eleusine coracana* (L.) Gaertn.) under integrated nutrient management in the Southern Laterites of Kerala. *J. Crop Weed* 17(3): 01-09.

18. Gafoor, R. A., Pillai, P. S., Nishan, M. A., and Divakar, S. 2021. Nutritional quality of finger millet (*Eleusine coracana* (L.) G.) as influenced by INM in the Southern Laterites of Kerala. *Green Fmg* 12 (3&4): 171-174.
19. Athira, K.V., Sudha, B., John, J., Pillai, P.S., and Manju, R.V. 2021. Generation of paddy straw composts in rice based integrated farming system and evaluating in organic production of maize. *Indian J. Ecol.* 48 (0)
20. Himabindhu, B., Divakar, S., Pillai, P. S., Joseph, B., and Krishnaja, U. 2021. Quality evaluation of water spinach (*Ipomoea aquatica*) leaves cultivated through aquaponics. *Int. J. Chem. Stud.* 9(1): 1245-1252.
21. Chacko, S. R., Raj, S. K., Jacob, D., Pillai, P. S., and Radhakrishnan, N. V. 2021. Non-chemical weed management to improve fruit yield and net income in ladies finger. *Indian J. Weed Sci.* 53(3): 313-317.
22. Thomas, S. S., Pillai, P. S., Susha, V. S., and Aparna, B. 2022. Effect of nano-nitrogen supplemented with potassium on the growth and yield attributes of rice (*Oryza sativa* L.). *Green Fmg* 13(3&4): 370-374.
23. Begum, S., Pillai, P. S., John, J., Rajasree, G., and Manju, R. V. 2022. Performance evaluation of rice genotypes as influenced by water regimes and biofertilizer using the PVC tube method. *Pharma Innov. J.* 11(12): 771-778.
24. Begum, S., Pillai, P. S., John, J., and Sajeena, A. 2022. Rooting traits of rice genotypes as influenced by different water regimes and biofertilizer. *Pharma Innov. J.* 11(9): 2249-2254.
25. Joy, J. M. M., John, J., Sudha, B., Meera, A. V., and Pillai, P. S. 2022. Productive and profitable rice-based cropping systems for coastal plains of Kerala. *Indian J. Soc. Coastal Agric. Res.* 40(1): 31-37.
26. Sowmya, K., Bindhu, J. S., and Pillai, P. S. 2022. Agro-ecological sustainability with pulses under system of crop intensification – a review. *Agric. Rev.* DOI: 10.18805/ag.R-2521
27. Krishnasree, R. K., Raj, S. K., Pillai, P. S., Kavitha, G. V., Jacob, D., Prathapan, K., and Chacko, S. R. 2022. Nodule parameters, quality and nutrient uptake of vegetable cowpea [*Vigna unguiculata* subsp. *unguiculata* (L.) Verdcourt] as influenced by foliar application of macro and micronutrients. *Agric. Sci. Digest* 42(5): 604-609.
28. Unnikrishnan, D. Raj, S. K., Pillai, P. S., Ameena, M., Jacob, D., and Jayapal, A. 2022. Stimulatory effect of sesame of the germination and seedling growth of *Melochia corchorifolia* L. *Indian J. Weed Sci.* 54(3): 341-344.
29. Krishnasree, R. K., Raj, S. K., Pillai, P. S., Prathapan, K., Jacob, D., and Beena, R. 2022. Foliar nutrition with water soluble macro and micro nutrient fertilizers for yield maximization in bush vegetable cowpea. *Legume Res.* 45(10): 1266-1272.
30. Pillai, P. S. and Radhakrishnan, N. V. 2023. Crop diversification for enhanced productivity in the Southern Laterites of Kerala. *Indian J. Agric. Res.* DOI:10.18805/IJARE.A-6067.
31. Raj, A. B., John, J., Pillai, P. S., Meera A.V., Manju, R. V. and Sudha, B., 2023. Alternative cropping systems to mitigate carbon dioxide emission in rice fields under different nutrient levels. *Int. J. Environ. Climate Change* 13 (9): 540-546
32. Sreena, K. S., Pillai, P. S., and Rajasree, G. 2023. Tuberisation pattern of tannia (*Xanthosoma sagittifolium* (L.) Schott) in response to crop management practices in the South Central Laterites (AEU 9) of Kerala, India. *Int. J. Environ. Climate Change* 13 (9): 1876-1883.

### Popular Articles

1. Isaac, S. R., Pillai, P. S., and Rajasree G. 2010. Homestead farming promises cash and sustainability. *Intensive Agric.* 49 (1) : 21-24.
2. Pillai, P. S. 2020. Remodelling the carbon foot print of rice. *Agrobios Online* 19 (2):6-9
3. Sreena, K. S. and Pillai, P. S. 2021. Sacred groves - the fading footprints of nature. *Agrosci. Today* 2 (2): 62-65.
4. Begum, S. and Pillai, P. S. 2021. Mangroves - and underestimated ecosystem ? *Agrosci. Today* 2 (3) : 89-93.
5. Gafoor, R. A. and Pillai, P. S. 2021. Pseudocereals - contemplating out of the cereal box. *Kerala Karshakan* (e-journal). February, 2021
6. Pillai, P. S. 2023 . *Thirasheelakku Pinnilaaya Vilakal*. Kerala Kaumudi 01-01-2023.
7. Sruthy, H. and Pillai, P. S. 2023. Phosphorus build-up in soil : a continuing conundrum. *Agric. Food E – Newsletter* 5(1): 513-515.

### Books/Chapters in Books/Booklets/ Leaflets

1. Pillai, P. S., Preetha, P.S. and Liji, L.G. 2010. *Weather Instruments : The Invisible Made Visible*. Integrated Agromet Advisory Services, Kerala Agricultural University, Regional Agricultural Research Station (Southern Zone), Vellayani, Thiruvananthapuram. 16p.
2. Pillai, P. S. 2010. *Kaalavastha Vyathiyavum Nelkrishiyum*. In : Isaac, Sheeba R., Sreeja, S. and Gopi, D.K. (ed.), *Nelkrishi – Kaanaappurangal Thedi*. Krishi Vigyan Kendra, Kollam, pp.9 – 12.
3. Isaac, S. R., Pillai, P. S., and Gopi, D.K. 2011. *Pachakkari Vithulppadanam* (in Malayalam). Kerala Agricultural University, Krishi Vigan Kendra, Sadanandapuram, Kottarakkara
4. Isaac, S. R., Pillai, P. S., Gopi, D.K. and Remya, N. 2012. *Quality Seed Production in Vegetables*. Kerala Agricultural University, Krishi Vigyan Kendra, Kollam. 28p.
5. Pillai, P. S., Isaac, S. R., Remya, N., Athira, V.S., and George, L. 2013. *Moolakangal : Sookshmamengilum Anivaaryam* (in Malayalam). Kerala Agricultural University, Krishi Vigan Kendra, Kollam.
6. Pillai, P. S. and Rajasree, G. 2013. *Research on Crop Weather Relations – A Compendium*. Kerala Agricultural University, Thrissur. 88p.
7. Ameena, M., Raj, S. K., and Pillai, P. S. 2022. *Sasthreeya kalaniyanthranam nelkrishiyil* (in Malayalam). Kerala Agricultural University, Thrissur.

8. Ameena, M., Susha, V. S., Bindhu, J. S., and Pillai, P. S. 2022. *Orukkam subhiksha sundragrihangal nagarangalil'* (in Malayalam). Kerala Agricultural University, Thrissur.
9. Pillai, P. S. 2023. Nutrient dynamics in crops / cropping systems. In. Raj, S.K and Pillai, P. S. (eds), *Prospective Agronomic Interventions for Sustainability in Agriculture*, Department of Agronomy, College of Agriculture, Vellayani, Thiruvananthapuram, pp.1 – 15.

#### **Student Guidance (Major Advisor)**

M. Sc. - 10 (completed); 2 (ongoing)

Ph D - 3 (completed); 2 (ongoing)

Serving as Major Advisor of three extension personnel undergoing Post Graduate Diploma in Plant Health Management at the National Institute of Plant Health Management, Hyderabad.

#### **Other Institutional Responsibilities**

- Professor and Head, Department of Agronomy, since August 2020.
- Secretary, Staff Council, College of Agriculture, Vellayani
- Member of the Internal Complaints Committee for Harassment against Students
- Member of Project Co-ordination group on Farming System Research
- Member of Project Co-ordination group on Sugarcane and Tuber Crops
- Served as Member of State Level Committees of Government of Kerala :
  - o Working Group for the Project on Crop Health Management
  - o Technical Committee for Implementation of Pilot Weather Based Crop Insurance Scheme
  - o Task force on Drought Mitigation for Agriculture Development

#### **Membership in Professional Associations**

Life member of

- Indian Society of Agronomy
- Society of Agricultural Professionals
- Society for Advancement of Rice Research
- Indian Society of Weed Science
- Crop and Weed Science Society
- Indian Society of Coastal Agricultural Research