

# Dr. Ameena M.

Professor (Agronomy)

Department of Agronomy

College of Agriculture, Vellayani

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## Summary

My research interest in the biology and management of weeds started with my MSc. program wherein I worked on a project entitled “Investigations on allelopathic influence and control of purple nutsedge”. Since then I have been working on the broad area of management of weeds with special emphasis on the biology and ecological conditions favouring the emergence and spread of weeds. In the last one decade of my research career, I have worked on the biology of different weeds in question especially in the lowlands and problematic in rice and could formulate management strategy based on the ecological factors favouring the growth of weed. Managing abiotic stress using root endophytes is a recent area of interest in rice I have started working on. Urban farming is another area of interest for me where I could standardise growth media, and nutrient scheduling for crops suited for container cultivation in urban homesteads.

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## Research Highlights

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- An integrated management strategy for control of purple nutsedge
- A herbicide based weed management strategy for semidry rice
- Management strategy for weedy rice by enhancing crop competitiveness.
- Integrated weed management strategy for control of *Schoenoplectus juncooides*, *Sphenoclea zeylanica* and *Leptochloa chinensis* in wet seeded rice
- Growth media completely excluding sand for container cultivation of vegetables in urban households and a ready to use soil less growth media for container cultivation of tomato and amaranthus
- A growth medium using suchitha for container grown spinach beet and nutrient scheduling
- Agronomic package including growth medium, nutrient schedule and trailing method for container grown yardlong bean
- Two Black gram varieties tolerant to partial shade in coconut garden had been identified along with foliar nutrient schedule for enhanced productivity in coconut garden

## Experience

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Joined Kerala Agricultural University as Assistant Professor (Agronomy) in the year 2005

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## Education

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- Graduated in Agricultural Science from Kerala Agricultural University (1997)
  - Post Graduation in Agronomy from Kerala Agricultural University (1999)
  - Ph.D in Agronomy from Kerala Agricultural University (2003)
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## Area of Specialization

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Weed management, weed ecology, weed allelopathy, abiotic stress mitigation with root endophytes, urban farming

## Awards & Recognitions

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- Recipient of NUFFIC Fellowship 2017 for undertaking international training at Wageningen University, The Netherlands
- One of the Editors of Indian Journal of Agronomy
- Received Best Poster presentation Award twice (2015 and 2017) in the Second and Third National Biodiversity Congress organized by Biodiversity Board held at Trivandrum, India
- Received Second Best Oral Presentation Award in the National Conference on 'Emerging challenges and Opportunities in biotic and abiotic stress management in Rice' held during December 2014 at Directorate of Rice Research, Hyderabad, India
- Recipient of 'Young Scientist Award' in the National Conference on 'Emerging challenges and Opportunities in biotic and abiotic stress management in Rice' held at Directorate of Rice Research, Hyderabad, India
- Letter of Appreciation from Director of Extension, Kerala Agricultural University as team member for fetching Best KVK Award 2015 of Zone VIII to KVK, Palakkad
- Selected as Outstanding participant in the 21 days training programme in 2013 held at Central Rice Research Institute, Cuttack, India
- Letter of appreciation from Director of Extension, Kerala Agricultural University for the successful conduct of First Farmers' Science Congress organized at state level in 2008
- The thesis of my PhD student Ms. Pooja A.P. received the PKR Nair prize for the Best PhD thesis for the year 2021-22
- Serves as South Zone Councillor of the Journal 'Annals of Agricultural Research' published by Indian Society of Agricultural Science
- One of my PhD students Mr. Arindam Deb got selected for dual degree PhD programme at Hawkesbury Institute for Environment, Western Sydney, Australia
- Mentor for the Third best Idea presented in Ideathon competition in the International Biozion conference 2023

## Research Projects

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### Ongoing

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1. Development of a mobile app 'Rice weed expert' for providing instant weed management solutions
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### Completed

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1. Formation of Paddy Task Force for combating labour crisis in rice production Funded by Kerala State Planning Board, Government of Kerala, India

2. Adoption of effective agronomic package with respect to the yield constraints in different rice tracts of Palakkad district Funded by Department of Agriculture, Government of Kerala
3. Evaluation of upland rice varieties suitable for coconut garden in Palakkad district, Funded by Department of Agriculture, Government of Kerala, India
4. Farmer participatory evaluation of different rice establishment methods in Palakkad district' Funded by Department of Agriculture, Government of Kerala.
5. Field demonstration in paddy with FACTMIX funded by FACT
6. Evaluation of upland rice varieties suitable for coconut garden, Funded under Department of Agriculture, Government of Kerala, India
7. Management of problematic algae Chara sp in paddy fields funded by ATMA
8. Farmer participatory formulation of effective crop management practices for upland rice in Palakkad district' funded by Department of Agriculture, Government of Kerala
9. Alleviating yield constraints in banana var Nendran' funded by State Horticulture Mission
10. Formulation of crop specific ready to use nutrient-based substrates and production package for green roofs in urban agriculture funded by KAU Plan
11. Technological interventions for productivity enhancement in wetland rice funded by KAU Plan
12. Training and Demonstration of Forage technologies funded by Directorate of Extension

## Publications

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### Journal Articles

#### (Scopus indexed)

1. Ameena,M. and George,S. (2002). Allelopathic influence of purple nutsedge on germination and growth of vegetables. *Allelopathy Journal*, 10(2):147-152.
2. Ameena,M. and George,S. (2004). Control of purple nutsedge (*Cyperus rotundus* L.)using glyphosate and 2,4-D sodium salt. *Journal of Tropical Agriculture*, June-December ,Vol 42:Issue 1-2
3. S. R. Arya and Ameena M. Efficacy of new generation herbicides for weed management in semidry rice. (2016) .*Journal of Tropical Agriculture*. 54(1): 55-59
4. Anjana, S., Ameena, M., A. P. Pooja and Umkhulzum,F.(2020). Growth media standardization and organic nutrient scheduling for container grown yardlong bean (*Vigna unguiculata* sub sp. *sesquipedalis* (L.) Verdcourt). *Journal of Tropical Agriculture*. 58 (2): 256-262.
5. Umkhulzum, F. Ameena, M., and Pillai.S,P. (2020). Biology of rockbulrush (*Schoenoplectus juncooides*) in the wet land rice fields of south Kerala. *Journal of Tropical Agriculture*. 2019. Vol.57(2): 167-171.
6. Pooja, A.P., Ameena, M., Joseph, J. and Arunjith, P. (2021). Identification of Low Light Tolerant Blackgram Varieties with Respect to Morpho-physiology and Yield. *Legume Research*. DOI: 10.18805/LR-4683
7. A.P. Pooja,and M. Ameena. (2021). Screening Blackgram (*Vigna mungo* (L.) Hepper) Varieties for Shade Tolerance in Coconut Gardens of Southern Laterites of Kerala. *Indian Journal of Ecology* 48(4): 1090-1093

### Articles not indexed in Scopus

1. Ameena,M., Kumari, V.L.G. and George,S. (2006). Integrated management of purple nutsedge in okra. *Indian Journal of Weed Science*, Jan-June, Vol 38:No 1&2
2. Ameena,M., Kumari, V.L.G. and George,S. (2013). Control of purple nutsedge in okra through integrated management . *Indian Journal of Weed Science* 45(1):51-54, 2013.
3. Ameena,M., Kumari, V.L.G. and George,S. (2014). Allelopathic influence of purple nutsedge root exudates on germination and growth of important field crops' *International Journal of Agricultural Sciences*. vol 10 Issue 1 January . pg 186-189.
4. Ameena,M., Kumari, V.L.G. and George,S. (2014). Allelopathic influence of purple nutsedge (*Cyperus rotundus* L.) root exudates on germination and growth of important field crops. *Annals of Agricultural Research*. December .vol.35(4).362-363.

5. Ameena, M. (2015). Stale seedbed techniques for management of weedy rice (*Oryza sativa f.spontanea* L.) in direct seeded rice. *Annals of Agricultural Research*. Vol 36(4): 410-414
6. Ameena,M., Kumari, V.L.G. and George,S. (2015). Allelopathic effects of root exudates of purplenutsedge (*Cyperus rotundus* L.) on growth of field crops. *Journal of crop and weed*. Vol 11:142-145
7. Arya S.R and Ameena, M. (2015 ).Weedy Rice- an emerging threat to paddy production. *International Journal of applied and pure sciences and Agriculture*. Vol 1: 320-322
8. Ameena, M and Geethakumari,V.L (2016). Application of nutsedge extracts for weed suppression and identification of allelochemicals. *Journal of crop and weed*. 12(2):102-105
9. Ameena,M., and Kumari, V.L.G. (2016). Application of nutsedge extracts for weed suppression and identification of allelochemicals. *Journal of crop and weed* 12 (2): 102-105
10. Arya S.R and Ameena, M. (2016 ). Herbicide effects on soil enzyme dynamics in direct seeded rice. *Indian Journal of weed science*. 48(3): 316-318
11. Ameena, M., Geethakumari, V.L. and George, S., 2016. Alleopathic influence of purple nutsedge (*Cyperus rotundus* L) root exudates on germination and growth of important field crops. *Annals of Agricultural Research*..
12. Arya S.R and Ameena, M. (2017 ). Efficacy of new generation herbicides for weed management in dry direct seeded system of rice. *Annals of Agricultural Research*.38(2): 149-154
13. Anjali, K., Ameena, M. and Jose,N. (2018). Morphological characterisation of weedy rice morphotypes of Kerala. *Indian Journal of Weed Science*. Vol. 50(1): 27-32.
14. Anjali, K., Ameena, M. and Jose,N. (2018). Management of weedy rice (*Oryza sativa f.spontanea*) by enhancing rice competitiveness. *Journal of crop and weed*. Vol. 14(3): 130-135.
15. Umkhulzum, F. Ameena, M., and Pillai,S,P. (2020). 2018. Comparative efficacy of herbicides against rock bulrush *Schoenoplectus juncooides* (Roxb.)Palla in wets seeded rice. *Indian Journal of Weed Science*. 50(4): 395-398
16. Umkhulzum, F. and Ameena, M. (2019). Integrated management of rock bulrush (*Schoenoplectus juncooides*) in wet seeded rice. *Journal of crop and weed*. Vol. 15(3): 139-144.
17. Sekhar, L., Ameena, M.and Nimmy Jose. (2020). Herbicides and herbicide combinations for management of *Leptochloa chinensis* in wet-seeded rice.. *Indian Journal of Weed Science*. 52(3): 211–216.
18. Sekhar, L., Ameena, M.and Nimmy Jose. (2020). Herbicide combinations for enhancing the weed control efficiency in wet direct-seeded rice. *Journal of crop and weed*. Vol. 16(3): 221-227
19. Majeed, A., Ameena, M. and Issac,S,R. (2020). Standardisation of growth media and organic nutrient schedule for container cultivation of spianch beet (*Beta vulgaris* var *bengalensis*). *International Journal of Chemical Studies*.8(5): 1567-1572
20. Sruthy A. B, Isaac,S.R. and Ameena, M. (2020). Influence of agronomic management practices on the leaf yield and nutrient uptake in palak (*Beta vulgaris* (L) var. *bengalensis*). *Journal of Pharmacognosy and Phytochemistry*. 9(5): 1068-1072
21. Pooja A. P and Ameena, M. (2020). Quality planting material for productivity enhancement in tropical tuber crops. *International Journal of Chemical Studies*. 8(4): 1931-1936.
22. Toufeeq, S., Dhalin, D., Subhagan, S.R., Khatawkar, D.S., Aparna, B. and Ameena, M. (2020). Soil CO<sub>2</sub> Emission under Different Tillage Practices in Major Soils of Kerala. *Current Journal of Applied Science and Technology*. 39(11): 1-12
23. Pooja A. P and Ameena, M. (2021). Nutrient and PGR Based Foliar Feeding for Yield Maximization in Pulses: A Review. *Agricultural Reviews*, Volume 42 Issue 1: 32-41
24. Anjana, S., Ameena, M., A. P. Pooja. (2021). Standardization of trailing method and irrigation frequency for yardlong bean (*Vigna unguiculata* var. *sesquipedalis* (L.) raised in containers for urban farming. *Journal of Crop and Weed*, 17(1): 242-245

25. Reddy, M.S.S.K. and Ameena, M. (2021). Influence of weed management practices on weed flora, crop yield and nutrient uptake in direct seeded rainfed lowland rice. *Journal of Crop and Weed*, 17(2): 01-08.
26. Reddy, M.S.S.K. and Ameena, M. (2021). Efficacy of pre- and post-emergence ready-mix herbicides in rainfed lowland wet-seeded rice. *Indian Journal of Weed Science* 53(1): 88–91
27. Anjali, K., M. Ameena, Jose, N., A. P. Pooja, Umkhulzum, F. and Anjana, S. (2021). Assessing the competing ability of weedy rice (*Oryza sativa* f. *spontanea*) with cultivated rice under elevated CO<sub>2</sub> conditions. *Journal of Experimental Biology and Agricultural Sciences*, October - 2021; Volume – 9(Spl-3-NRMCSSA\_2021) page S368 – S371
28. Pooja A. P, Ameena, M. and Stephen, R. (2021). Physiological response, yield and dry matter partitioning in blackgram varieties under shading stress in coconut garden. *International Journal of Farm Sciences*. 11(4): 70-74
29. Unnikrishnan, D., Raj, S.K, Pillai, S.P., Ameena, M., Jacob, D. and Jayapal, A. (2022). Stimulatory effect of sesame on the germination and seedling growth of *Melochia corchorifolia* L. *Indian Journal of Weed Science*. 54 (3): 341-344
30. Mani, K.M. and Ameena M. (2022). Effect of *Piriformospora indica* on vegetative growth of summer rice. *The Pharma Innovation Journal*. 11(11): 865-868
31. Krishnapriya, M. K., Naveen Leno, J. M. Johnson, B. Rani, B. Joseph and M. Ameena (2023). The Beneficial Effect of Thermochemical Organic Fertilizer and Root Endophytic Fungi on the Growth of Tomato (*Solanum lycopersicum* L.). *International Journal of Plant & Soil Science*. 35 (18): 824-832

### Popular Articles (more than 50)

1. Ameena M. *Vismruthiyilaya venalvilakal*. Kerala karshakan 60th edition pg 254-256
2. Ameena M. *Valaprayogam 10 puthiya pravanathakal*. Kerala karshakan 60th edition. pg 232-233
3. Ameena M. *Mannarinju valaprayogam* Kerala Karshakan. January 2015. pg.45
4. Ameena M. *Kizhanguvilakal- Krishimurakal*. Krishiyanganam December 2015
5. Ameena M 'Namukkum valartham Palak cheera'. Kerala Karshakan. February 2020

**Leaflets- 20**

**Booklets- 10**

### Books/Chapters in Books

A chapter on 'Weed Management' in the Book 'Tactics of being an agripreneur- Learning the rope'. 2019

A chapter on 'Phytomining' in the Book 'Managing hill resources and diversities for sustainable farming'

### Student Guidance (as Major Advisor)

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#### M. Sc.

Within KAU: Completed: 9

Within KAU: ongoing : 3

#### Ph. D

Within KAU: completed: 2

Within KAU: ongoing: 4

### Other Institutional Responsibilities

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1. Currently acting as student Advisor/faculty/mentor to 10 Undergraduate students.
2. Officer in charge of Crop Museum and Millet Museum

3. Member of the District Level Technical Committee for vetting projects under SHM
4. Member of the District Level Committee for reforming Farms under Department of Agriculture
5. Member of the expert team for training youth as urban farming facilitators

## **Membership in Professional Associations**

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1. Life Member of Indian Society of Agronomy
2. Life Member of Indian Society of Agricultural Science
3. Life Member of Indian Society of Weed Science
4. Life Member of the Journal of Crop and Weed
5. One of the Editors of Indian Journal of Agronomy
6. South zone councillor of Annals of Agricultural Research