

Dr. M. Amutha

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**Working Experience: Seven Years**

Scientist: 18.05.2007 onwards – CICR

Scientist (Probationer): 08.1.2007-17.5.2007

Projects handled:

S.No	Project Title	Period	Funding Agency	Designation as
1.	Studies on Epizootiology, pathogenicity and pathogenic mechanism of entomopathogenic fungal pathogens against cotton mealybug.	2008 - 11	Institute	PI
2.	Establishment of <i>Beauveria bassiana</i> as an symbiotic insecticide against major insect pests and diseases of cotton	2010 - 11	Institute	PI
3.	Insecticides, sucking pests and predator interaction on Bt cotton	2009 - 11	Institute	PI
4.	Research into Development of Decision Support Systems for major Insect Pests of Rice and Cotton based Cropping Systems	2008 - 14	NAIP-World Bank	CCPI
5.	Entomopathogenic-endophytes mediated plant defense as a novel approach for the management of boll worms in cotton	2013 - 17	DST	PI
6.	Isolation, characterization and utilization of endophytes from cotton and endosymbionts from cotton insect pests	2012 - 17	Institute	PI
7.	Production, Stabilization, Formulation and Validation of Microbial Agents and their Natural Products against Insect and Nematode Pests of Cotton	2012 - 15	TMC	Co-PI

Publications (From 2007 onwards):

a. Research Articles :

1. **Amutha M**, Chozhan K and Alagar M. 2007. Synergistic effect of *Azospirillum brasilense* and Vesicular Arbuscular Mycorrhiza (VAM *Glomus* spp.) on leaf folder in rainfed rice. *Journal of Plant Protection and Environment*. 4(2):15-20.
2. **Amutha M**, Manisegaran S and Alagar M. 2009. Ovipositional and orientational behaviour of *Helicoverpa armigera* (Hub.) on selected tomato accessions (*Lycopersicon esculentum* Miller). *Annals of Plant Protection Sciences* 17(1), 59-64.
3. **Amutha M**, Alagar M and Chozhan K. 2009. Synergistic effects of *Azospirillum brasilense* (T.), Vesicular Arbuscular Mycorrhiza (VAM- *Glomus* spp.), organic fertilizers on *Scirpophaga incertulus* Wlk. on *Oryza sativa* L. *Annals of Plant Protection Sciences*. 17, 2, 375-379.
4. **Amutha M**, Alagar M and Chozhan K. 2009. Synergistic effects of *Azospirillum brasilense* (T.) and Vesicular Arbuscular Mycorrhiza (VAM- *Glomus* spp.) combined with organic and inorganic fertilizers on the infestation of rice yellow stem borer *Scirpophaga incertulus* Wlk. under rainfed condition. *Journal of Plant Protection and Environment*. 6(2):50-58.
5. **Amutha M**, Gulsar Banu J, Surulivelu T and Gopalakrishnan N. 2010. Effect of commonly used insecticides on the growth of white muscardine fungus, *Beauveria bassiana* under laboratory conditions. *Journal of Biopesticides*, Vol.3. No.1. 143-146.
6. Gulsar Banu J, Surulivelu T, **Amutha M** and Gopalakrishnan N. 2010. Susceptibility of cotton mealybug, *Paracoccus marginatus* to Entomopathogenic fungi. *Annals of plant protection Sciences*, Vol. **18(1)**, 247-248.
7. **Amutha M** and Gulsar Banu J. 2011. Susceptibility of cotton mealy bugs, *Phenacoccus solenopsis* and *Paracoccus marginatus* at different developmental stages to entomopathogenic fungi. *Indian Journal of Plant Protection* 39(3), 242-246.
8. **Amutha M** and Gulsar Banu J. 2012. Compatibility of *Metarhizium anisoplia* and *Verticillium lecanii* with insecticides. *Annals of Plant Protection sciences* 20(2), 354-357.

9. Alagar M, Sivasubramanian P, Saravanan P A and **Amutha M.** 2007. Safety of botanicals and insecticides to *Chrysoperla carnea* Stephens and *Trichogramma chilonis* Ishii. *Journal Plant Protection and Environment.* 4(2): 7-14.
10. Surulivelu T, Gulsar Banu J, Sonairajan T, Dharajothi B and **Amutha M.** 2012. Evaluation of fungal pathogens for the management of mealybugs in Bt cotton. *Journal of biological control,* 26(1): 92-96.

b. Book Chapter

1. **M. Amutha,** S. Manisegaran, R. Rajendran, P. Vivekanandan and P. Govindaraju. 2007. Detection of biochemical constituents and isozymes in certain promising tomato accessions resistant to tomato fruit borer *Helicoverpa armigera* (Hub.) In. Biotechnology and Insect pest Management. Ed. Fr. D. S. Ignacimuthu and Dr. S. Jayaraj. Elite publishing house pvt.ltd, New Delhi. ISBN no. 81-88901-26-1 pp.46-51.

c. Research Note

1. **M. Amutha,** B. Dhara Jothi, T. Surulivelu and N.Gopalakrishnan. 2009. Natural parasitism on *Phenacoccus solenopsis* mealybug (Tinsley) and *Paracoccus marginatus* (Williams and Granara de Willink). CICR Newsletter, Vol. 25, No.1 (Jan-March). P.5.
2. B. Dhara Jothi, T. Surulivelu, N. Gopalakrishnan, **M. Amutha,** T.R. Manjula and N. Kumaran. 2009. Natural occurrence of *Spalgis* sp (Lepidoptera: Lycaenidae) as predator on mealybug *Paracoccus marginatus* Williams and Granara de Willink on Cotton. CICR Newsletter, Vol. 25,2, (Apr- June): p.4
3. **M. Amutha** and N. Gopalakrishnan. 2009. Histopathological changes due to *Metarhizium anisopla* infection on *Paracoccus marginatus*. CICR Newsletter, Vol. 25, 3, (July- Sep): p.5.
4. S. Vennila, P. Jeyakumar, V. V. Ramamurthy, **M. Amutha** and Dhara Jothi, 2009. Report on Expanding list of Host Plants of Papaya Mealybug *Paracoccus marginatus*. NCIPM Newsletter, Vol. 15 (1), Jan-June.
5. **J. Gulsar Banu,** T. Surulivelu, M. Amutha and N. Gopalakrishnan. 2010. Susceptibility of cotton mealybug, *Paracoccus marginatus* to entomopathogenic fungi. *Annals of plant protection Sciences,* Vol. **18(1)**, 247-248.

d. Technical Bulletins

1. Nagrare V. S., Kranthi S., Rishi Kumar, Dharajothi B., **Amutha M.**, Deshmukh A.J., Bisane K. D., Kranthi K. R. (2010). Compendium of Cotton Mealybugs. Technical Bulletin, Central Institute for Cotton Research, Nagpur.
2. S. Vennila, Y.G. Prasad, M. Prabhakar, Rishi Kumar, V. Nagrare, **M. Amutha**, Dharajyothi, Meenu Agarwal, G. Sreedevi, B. Venkateswarlu, K.R. Kranthi and O.M. Bambawale 2011, Spatio-temporal Distribution of Host Plants of Cotton Mealybug, *Phenacoccus solenopsis* Tinsley in India, *Technical Bulletin No. 26*, National Centre for Integrated Pest Management, New Delhi P 50.

e. Popular articles (Tamil)

1. M. Alagar, P. Sivasubramanian, **M. Amutha**, K. Balaji and M. Jegadeesan. 2008. Vayal eligalai katupadutha etra paruvam kodai (Suitable season to control field rat-Summer). Nilavalam, August, 41, 5: p.24-25.
2. M. Alagar, **M. Amutha** and P. Sivasubramanian. 2008. Paruthiyil kaipulukalin thakuthalai katupathuvadhu eppadi? (How to prevent bollworms in cotton ?) Nilavalam, October, 41, 7: p. 4-6.
3. M. Alagar, **M. Amutha** and P. Sivasubramanian. 2008. Nerpayiril pugaiyan poochi thakuthalai tadupadhu eppadi? (How to prevent hoppers in rice?) Nilavalam, December, 41, 9: p. 21.
4. M. Alagar, P.A. Saravanan, **M. Amutha** and M. Jegadeesan. 2007. Bio-pesticides - Need of the hour for Ecofriendly pest management. **Agro-Bios.** 33-34.
5. Alagar, M., **M. Amutha** and P.A. Saravanana. 2007. Green leafy vegetables- Ecofriendly pest management. **Swarna Sedyam.** July 53-54.

f. Papers presented in Seminar/Conferences:

1. **M. Amutha**, J. Gulsar Banu, T. Surulivelu and N. Gopalakrishnan. 2009. Pathogenicity of *Metarhizium anisopliae* against cotton mealybugs, (*Phenacoccus solenopsis* (Tinsley) and *Paracoccus marginatus* (Williams and Granara de Willink). In: Second Biopesticide International Conference. 26-28th November, at St. Xavier's College, Palayamkottai. Pp. 60
2. **M. Amutha**, J. Gulsar Banu, T. Surulivelu and N. Gopalakrishnan. 2009. Compatibility of white muscardine fungus, *Beauveria bassiana* with commonly used insecticides for cotton pest management. In: Second Biopesticide International Conference. 26-28th November, at St. Xavier's College, Palayamkottai. Pp. 60
3. **M. Amutha**, B. Dharajothi, T. Surulivelu and N. Gopalakrishnan. 2009. Record of natural parasitism on cotton mealybugs, *Phenacoccus solenopsis* (Tinsley) and *Paracoccus marginatus* (Williams and Granara de Willink). In: Second Biopesticide International Conference. 26-28th November, St. Xavier's College, Palayamkottai. p. 114
4. J. Gulsar Banu, T. Surulivelu, **M. Amutha**, and N. Gopalakrishnan. 2009. Evaluation of insecticides and biopesticides against *Phenacoccus solenopsis* and *Paracoccus marginatus* infesting cotton. In: Second Biopesticide International Conference. 26-28th November, at St. Xavier's College, Palayamkottai. Pp. 213
5. **M. Amutha** and J. Gulsar Banu. 2010. Pathogenicity of entomopathogenic fungus *Beauveria bassiana* against cotton mealybugs, *Phenacoccus solenopsis* (Tinsley) and *Paracoccus marginatus* (Williams and Granara De Willink). P.271. In: 97th Indian Science Congress, 3-7th January, Trivandrum, Kerala.
6. J. Gulsar Banu, T. Surulivelu, **M. Amutha**, and N. Gopalakrishnan. 2009. Evaluation of insecticides and biopesticides against *Phenacoccus solenopsis* and *Paracoccus marginatus* infesting cotton. In: Second Biopesticide International Conference. 26-28th November, at St. Xavier's College, Palayamkottai. Pp. 213
7. J. Gulsar Banu and **M. Amutha**. 2010. Susceptibility of different developmental stages of the cotton mealybug, *Paracoccus marginatus* to entomopathogenic fungi. P.275. In: 97th Indian Science Congress, 3-7th January, Trivandrum, Kerala.

8. **M. Amutha** and J. Gulsar Banu. 2011. Biochemical changes during pathogenesis of cotton mealybug with *Metarhizium anisopliae*. P.83. In: 98th Indian Science Congress, 3-7th January, SRM University, Chennai.
9. **M. Amutha** and J. Gulsar Banu. 2011. Compatibility between green muscardine fungus, *Metarhizium anisopliae* and insecticides used in cotton ecosystem. P.84. In: 98th Indian Science Congress, 3-7th January, SRM University, Chennai.
10. J. Gulsar Banu and **M. Amutha**. 2011. Histopathological changes of cotton mealybug *Paracoccus marginatus* infected by native entomopathogenic fungi. P.85 In: 98th Indian Science Congress, 3-7th January, SRM University, Chennai.
11. J. Gulsar Banu and **M. Amutha**. 2011. Evaluation of *Lecanicillium lecanii* in lab and pot culture conditions, as a potential candidate for biocontrol of mealybug, *Phenacoccus solenopsis*. P.85. In: 98th Indian Science Congress, 3-7th January, SRM University, Chennai.
12. T. Surulivelu, J. Gulsar Banu, T. Sonairajan, B. Dharajothi and **M. Amutha**. 2011. Evaluation of fungal pathogens for the management of mealybugs in Bt cotton. In: National symposium on harnessing biodiversity for biological control of crop pests, May 25-26, at National Bureau of Agriculturally important insects, Bengaluru.
13. **M. Amutha**. 2011. Temperature effect on growth parameters of mealybug, *Paracoccus marginatus* (Williams and Granara de Willink). In: 2nd International congress of Global warming on Biodiversity of Insects: Management and conservation, 24th- 26th August, Bharathiyar University, Coimbatore. P.20-21.
14. **M. Amutha** and B. Dharajothi. 2011. Population dynamics of mealybugs, *Phenacoccus solenopsis* (Tinsley) and *Paracoccus marginatus* (Williams and Granara de Willink) on cotton. In: 2nd International congress of Global warming on Biodiversity of Insects: Management and conservation, 24th- 26th August, Bharathiyar University, Coimbatore.
15. B. Dhara jothi, T. Sonai Rajan, V.S. Nagrare, **M. Amutha**, Rishi Kumar and T. Surulivelu. 2011. Influence of spatial cropping patterns of cotton cultivation on population dynamics of mirid bug, *Crontiades biseratense* (Distant). In: World Cotton conference-5, November 7-11, Mumbai, India. P.85.
16. **M. Amutha**. 2011. Artificial inoculation of *Beauveria bassiana* as an endophyte in cotton. In: World Cotton conference-5, November 7-11, Mumbai, India. P. 142.

17. V.S. Nagrare, A.J. Deshmukh, B. Dhara jothi, **M. Amutha**, Rishi Kumar, S. Kranthi and K.R. Kranthi. 2011. Sampling methodology for assessing field population of cotton infesting mired *Campylomma livida* Reuter (Hemiptera:Miridae). In: World Cotton conference-5, November 7-11, Mumbai, India. P. 150.
18. **M. Amutha** and B. Dharajothi. 2013. Population dynamics of mealybug, *Paracoccus marginatus* (Williams and Granara de Willink) on Bt cotton in different cropping pattern. In: New horizons in Insect Science (Ed: A.K. Chakravarthy *et al.*), Proceedings of International Conference on Insect science, February, 14-17, 2013 at Bangalore, India.
19. B. Dharajothi, Y.G. Prasad, **M. Amutha** and K. Govindan. 2013. Mirid bug (*Creontiades biseratense* Distant) - An emerging pest on Bt cotton. In: New horizons in Insect Science (Ed: A.K. Chakravarthy *et al.*), Proceedings of International Conference on Insect science, February, 14-17, 2013 at Bangalore, India.
20. J. Gulsar Banu and **M. Amutha**. 2013. Influence of insecticides on *Metarhizium anisopliae* (ARSEF-9613), a native entomopathogenic fungus from mealybug. In: New horizons in Insect Science (Ed: A.K. Chakravarthy *et al.*), Proceedings of International Conference on Insect science, February, 14-17, 2013 at Bangalore, India.
21. **Amutha M** and Gulsar Banu J. 2013. Pathogenesis related enzyme activity during pathogenesis of entomopathogens. In: Fourth Biopesticide International Conference. 28-30th November, at St. Xavier's College, Palayamkottai. P.97.
22. **Amutha M** and Gulsar Banu J. 2013. Variation in sequential developmental symptoms of pathogenesis by entomopathogenic fungus on *Paracoccus marginatus*. In: Fourth Biopesticide International Conference. 28-30th November, at St. Xavier's College, Palayamkottai. P.67
23. Gulsar Banu and **Amutha M**. 2013. Natural occurrence of *Cladosporium cladosporioides* (Fresen.) de Vries from cotton aphid, *Aphis gossypii* Glover. In: Fourth Biopesticide International Conference. 28-30th November, at St. Xavier's College, Palayamkottai. P.65
24. **Amutha M** and Dharajothi B. 2013. Effect of temperature on reproduction parameters of *Paracoccus marginatus* (Williams and Granara de Willink) and *Phenacoccus solenopsis* Tinsley (Hemiptera: Pseudococcidae) on cotton. In: 3rd International congress of Global warming on Biodiversity of Insects: Management and conservation, 26th- 28th August, Bharathiyar University, Coimbatore.

Gene Bank (NCBI) submissions

S.no	Organism	Gene accession Number	Author	Remarks
	Fungus (18s rRNA)			
1.	<i>Alternaria arborescens</i> strain CICR1	KF747355	M.Amutha	Endophyte
2.	<i>Aspergillus tubingensis</i> strain CICR2	KF747361	M.Amutha	Endophyte
3.	<i>Aspergillus niger</i> strain CICR3	KF747362	M.Amutha	Endophyte
4.	<i>Aspergillus tubingensis</i> strain CICR4	KF747363	M.Amutha	Endophyte
5.	<i>Chaetomium globosum</i> strain CICR5	KF747364	M.Amutha	Endophyte
6.	<i>Alternaria alternata</i> strain CICR6	KF747365	M.Amutha	Endophyte
7.	<i>Alternaria citri</i> strain CICR7	KF747366	M.Amutha	Endophyte
	Bacteria (16s rRNA)			
8.	<i>Enterobacter cloacae</i> strain CICR11	KF747358	M.Amutha	Endophyte
9.	<i>Bacillus safensis</i> strain CICR13	KF747359	M.Amutha	Endophyte
10.	<i>Aeromonas hydrophila</i> strain CICR9	KF747360	M.Amutha	Endophyte
11.	<i>Bacillus stratosphericus</i> strain CICR10	KF747367	M.Amutha	Endophyte
12.	<i>Asaia bogorensis</i> strain CICR8	KF747356	M.Amutha	Endosymbiont of <i>H. armigera</i>
13.	<i>Klebsiella variicola</i> strain CICR14	KF747357	M.Amutha	Endosymbiont of <i>H. armigera</i>

Awards

1. **Best poster award** for the poster entitled “Record of natural parasitism on cotton mealybugs, *Phenacoccus solenopsis* (Tinsley) and *Paracoccus marginatus* (Williams and Granara de Willink)” presented in Second Biopesticide International Conference. 26-28th November at St. Xavier’s College, Palayamkottai.
2. **Junior Scientist of the year - 2010** by International Board of Awards of National Environmental Science Academy, New Delhi, India.

Membership in Professional / Scientific Bodies

- ❖ Life membership in Journal of Biological Control, NBAII, Bengaluru.
- ❖ Life membership in Annals of Plant Protection Sciences, IARI, New Delhi
- ❖ Life membership in National Environmental Science Academy, Mumbai
- ❖ Life membership in Plant Protection Association of India, NBPGR, Regional Station, Hyderabad.