

## Curriculum Vitae

### **Personal Information**

Name: **Dr. A. Karthikeyan**  
Present Position: Scientist E  
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### **Specialization**

- Forest Pathology
- Bio fertilizers (AM fungi, Rhizobium, Frankia, Azospirillum, Phosphobacterium, Potassium mobilizers)
- Bio remediation of problematic sites
- Bio control mechanism for controlling plant pathogens

**No. Publications: 102**

### **International Journals**

1. Udaiyan, K., **Karthikeyan, A.** and Muthukumar, T. (1996). Influence of edaphic and climatic factors on dynamics of root colonization and spore density of vesicular arbuscular mycorrhizal fungi in *Acacia farnesiana* willd. and *A. planifrons* W.et.A. *Trees structure and function* **11**: 65 –71.
2. Muthukumar, T., Udaiyan, K, **Karthikeyan, A.** and Manian, S. (1997). Influence of native endomycorrhiza, soil flooding and nurse plant on mycorrhizal status and growth of purple nutsedge (*Cyperus rotundus* L.). *Agriculture, Ecosystems and Environment* **61**: 51 – 58.
3. Shanmughavel and **A. Karthikeyan** (2003). Influence of age on fibre and chemical characteristics of plantation crop of Bamboo. *East African Agricultural and Forestry Journal* **68**(4): 165 – 168
4. **A. Karthikeyan**, T. Muthukumar and K. Udaiyan (2005). Response of tea (*Camellia sinensis* (L.) O. Kuntze) to arbuscular mycorrhizal fungi under plantation nursery conditions. *Biological Agriculture and Horticulture*. **22** (4) :305-319

5. **A. Karthikeyan** and T. Muthukumar (2006). Growth response of *Acacia planifrons* W.et.A. to arbuscular mycorrhizal fungi and nitrogen fixing bacteria under nursery conditions. *Forests, Trees and Livelihoods*, **16** : 269-275.
6. **A. Karthikeyan** and M. Surya Prakash (2008). Effects of Arbuscular Mycorrhizal Fungi, Phosphobacterium and *Azospirillum* sp. on Successful Establishment of *Eucalyptus camaldulensis* Dehn. in Bauxite Mine Spoils. *Forests, Trees and Livelihoods* **18** (2): 183-191
7. **A. Karthikeyan**, B. Deeparaj and P. Nepolean (2009). Reforestation in Bauxite mine spoils with *Casuarina equisetifolia* Frost. and beneficial microbes. *Forest, Trees and Livelihoods* **19**: 153-165
8. **A. Karthikeyan**, T. Muthukumar and I. Sureka (2011). Etiology of *Trichosporium vesiculosum* Butl. causing blister bark disease in *Casuarina equisetifolia* Forst. *Plant Pathology Journal*. **10**: 85-88.
9. **A. Karthikeyan** and K.M. Sakthivel (2011). Efficacy of *Azotobacter chroococcum* in rooting and growth of *Eucalyptus camaldulensis* stem cuttings *Research Journal of Microbiology* (U.S.A). DOI: 10.3923/rjm/2011, 6: 618-624.
10. T. Muthukumar, E. Uma, **A. Karthikeyan**, K. Sathiyadash, S. Jaison, P. Priyadharsini, I. Chongtham and V. Muniappan (2011). Morphology, anatomy and mycorrhizae in subterranean parts of *Zeuxine gracilis* (Orchidaceae). *Annales de Biologia* **33**: 127-134.
11. **A. Karthikeyan** and N. Krishnakumar (2012). Reforestation of bauxite mine spoils with *Eucalyptus tereticornis* Sm. seedlings inoculated with Arbuscular mycorrhizal fungi. *Annals of Forest Research* **55** (2): 207-216.
12. **A. Karthikeyan**, K. Chandrasekaran, M. Geetha and R. Kalaiselvi (2013). Growth response of *Casuarina equisetifolia* Forst. rooted stem cuttings to *Frankia* in nursery and Field conditions *Journal of Biosciences* **38** 741-747
13. Diagne Nathalie, **Karthikeyan Arumugam**, Mariama Ngom, Mathish Nambiar-Veetil, Claudine Franche, Krishna Kumar Narayanan, and Laurent Laplaze (2013) Use of *Frankia* and actinorhizal plants for degraded lands reclamation. *Bio med Research. International*. Volume. ID. 948258. 9 pages.
14. A.C. Liju, **A. Karthikeyan**, N.B. Sivapriya and Sadia Siddiqui (2014) Control of Anthracnose disease in *Swietenia macrophylla* using *Trichoderma viride* as bio control agent. *Plant pathology Journal* DOI: 10.3923/ppj2014, 13: 173-176.

15. **A. Karthikeyan** (2016). *Frankia* strains for improving growth, biomass and nitrogen fixation in *Casuarina equisetifolia* seedlings. *Journal of Tropical Forest Science* **28**: 235-242
16. **A. Karthikeyan** (2017). Impact of elevated CO<sub>2</sub> in *Casuarina equisetifolia* rooted stem cuttings inoculated with *Frankia*. *Symbiosis*. **72**: 39-94. Doi.10.1007/s13199-016-0445-4.

## National Journals

1. **A. Karthikeyan**, G.S. Goraya, Shailendra kumar and S. Kalia (2000). Studies on the mortality of *Cedrus deodara* (Roxb.) L.Don in Chail Forest (H.P) and it's causative factors. *Indian Forester*. 126 (12) 1326-1332.
2. **A. Karthikeyan**, Shailendra kumar and Surinder kumar (2003). *Trichoderma viride* a mycoparasite for the control of *Phytophthora cinnamomi*. *Indian Forester* 129 (5) 631 - 634
3. **A. Karthikeyan** (2003). Reclamation of mine spoils using Arbuscular mycorrhizal fungi: A socio – environment friendly method. *South Asian Journal of Socio Political studies*. 12(1) : 110 –114.
4. **A. Karthikeyan** (2006). Arbuscular mycorrhizal fungi: A booster for plants. *South Asian Journal of Socio Political Studies* **6**;106 –109
5. **A. Karthikeyan**, M. Maria Dominic Savio and B. Deeparaj (2007). Application of Bio – fertilizers for the quality seedling production of *Azadirachta indica* A. Juss *Indian Forester*: **188**: 1049 –1051
6. R. Anandalakshmi and **A. Karthikeyan** (2007). *Jatropha curcas* : The bio fuel crop for socio economic development. *South Asian Journal of Socio Political Studies* **8**: 90-91.
7. **A. Karthikeyan** and S. Vaishnavi (2008). Growth response of *Eucalyptus camaldulensis* seedlings to inoculation of *Azospirillum brasilense*. *South Asian Journal of Socio Political Studies* **9**: 92-95
8. Ramapriya, R., Usha, K and **Karthikeyan A** (2009). A Preliminary study on the antioxidant potential of *Nyctanthes arbortristis* Linn. *Indian Journal of Botanical Research* **5**: 317-322.
9. R. Sivalingam, M. Smitha, M. Hegde, **A. Karthikeyan** and K. Palanisamy (2010). Effect of Bio fertilizers on growth of *Terminalia chebula* Retz. Seedlings in Nursery. *Indian Forester* **136**: 604-609
10. **A. Karthikeyan**, S.R.Sathishkumar and K.M.Sakthivel (2011). *Frankia* – As growth promoting source for *Casuarina* plants. *Agrobios*:10; 15-16.

11. **A. Karthikeyan**, S.R. Sathishkumar and K.M. Sakthivel (2011). Nodulation in *Casuarina equisetifolia* rooted stem cuttings by inoculation of *Frankia* *Indian Forester*: 1130-1131.
12. **A. Karthikeyan** and M. Nandhini (2011). Effect of Phosphobacterium on rooting and growth of *Eucalyptus camaldulensis* Dehn. Stem cuttings. *South Asian Journal of socio-political studies*: 12: 105-109.
13. **A. Karthikeyan**, M. Geetha and K. Chandrasekaran (2013). Nodulation of rooted stem cuttings in *Acacia auriculiformis* A. cunn and Ex. Benth. *Indian Forester*: 139 (11); 1046-47
14. **A. Karthikeyan** (2015). Assessment of *Casuarina equisetifolia* Frost. clones against blister bark disease resistance. *Journal of Mycology and Plant Pathology*. 45: 280-284.

## Book Chapters

1. **A. Karthikeyan** (2004) Inoculation of Arbuscular mycorrhizal fungi for improved root structure of *Acacia auriculiformis* A. cunn ex. Benth In : *Tree improvement and Bio technology*, P.Shanmughavel and S. J. Ignacimuthu (Eds) Pointer publishers, Jaipur, India pp-100-109.
2. **A. Karthikeyan** (2005). Growth response of *Acacia farnesiana* Willd. to indigenous arbuscular mycorrhizal fungi and symbiotic nitrogen fixing bacteria under tropical nursery In: *Multipurpose trees in the tropics: Management and Improved strategies* V.P Tiwari and R.L. Srivastava (eds), Scientific publishers, India. pp-140 –147
3. **A. Karthikeyan** (2005). Inoculation of Arbuscular mycorrhizal fungi to *Acacia auriculiformis* for reclaiming bauxite mine spoils In: *Special issue on Eco restoration*, Bulletin of National Institute of Ecology (eds). B. Gopal and P.S. Pathak. **National Institute of Ecology**, India. Vol. 16: Pp121-128.
4. **A. Karthikeyan** and P. Nepolean (2011). Influence of edapho climatic factors on blister bark disease in *Casuarina equisetifolia* In: Proceedings of 4<sup>th</sup> National Forestry conference (9 to 11.11. 2009) F.R.I. Dehradun (eds). Ombir Singh and V.R.R. Singh pp 295-299.
5. **A. Karthikeyan**, Maria Dominic Savio and P. Nepolean (2011). Growth response of *Casuarina junghuhniana* to indigenous *Frankia*, Arbuscular mycorrhizal fungi and Phosphobacterium under nursery conditions In: Improving smallholder livelihood through improved Casuarina productivity: Proceedings of the 4<sup>th</sup> International Casuarina workshop, Haikou, China 21-25 March 2010. Chonglu Zhong, Khongsak Pinyopusarek, Antone Kalinganire and Claudine Franchie (eds), China Forestry Publishing House pp. 131-136.

6. **A. Karthikeyan** and N. Krishnakumar (2012). Rehabilitation of bauxite mine spoils with beneficial microbes and fast growing tree speices. In: Proceedings of the International Symposium on Reclamation , Rehabilitation and Restoration towards a greener asia, 3-5 July 2012, Kualalampur Malaysia. L.H. Ang, W.M. Ho, C.T. Lee, H.C. Sim (eds).Concept Press, Batu caves, Malaysia pp.72-82.
7. **A. Karthikeyan**, S.R. Sathiskumar and K.M. Sakthivel (2012). Growth response of *Casuarina equisetifolia* rooted stem cuttings to inoculation of *Frankia* under nursery conditions In: Advances in *Casuarina* research in India: Proceedings of 2nd National Seminar on *Casuarinas* (Eds). R.S.C. Jayaraj, Rekha R. Warriar, A. Nicodemus and N. Krishnakumar, ICFRE Publication. Pp 61-67
8. T. Muthukumar, **A. Karthikeyan** and K. Udaiyan (2012). Evaluation of the growth and nutrient uptake of *Casuarina equisetifolia* on Alfisol soil inoculated with different arbuscular mycorrhizal fungi In: Advances in *Casuarina* research in India: Proceedings of 2nd National Seminar on *Casuarinas* (Eds). R.S.C. Jayaraj, Rekha R. Warriar, A. Nicodemus and N. Krishnakumar, ICFRE Publication. Pp. 47-53
9. S. Murugesan, R. Sumathi, N. Senthilkumar, C. Rajeshkannan and **A. Karthikeyan** (2012). Bio transformation of some secondary metabolites of *Frankia* – *Casuarina* relationship. In: Advances in *Casuarina* research in India: Proceedings of 2nd National Seminar on *Casuarinas* (Eds). R.S.C. Jayaraj, Rekha R. Warriar, A. Nicodemus and N. Krishnakumar, ICFRE Publication. pp 271-276
10. **A. Karthikeyan** (2013). Nodulation and Nitrogen fixation in rooted stem cuttings of *Casuarina junghuhniana* Miq. by *Frankia* inoculation. In: Microbiological Research in Agro ecosystem management(ed.) R.K. Velu Springer India pp289-296.
11. **A. Karthikeyan**, P. Rajendran, K. Chandrasekaran and M. Geetha (2013). Identification of resistant clones of *Casuarina* blister bark disease. In: Forest Health Management (ed).A. Balu, R.S.C. Jayaraj, A. Regupathy. V. Mohan. Rekha R. Warriar. T.P. Raghunath and N. Krishna kumar. IFGTB publication pp.581-586.
12. A. Nicodemus, K. Kannan, Y. Christi Sagariya, A. Pauldasan, **A. Karthikeyan** and B. Gurudev Singh (2013). Variation in blister bark disease incidence among *Casuarina equisetifolia*, *C. junghuhniana* and their interspecific hybrids and its implications for disease resistance breeding In: Forest Health Management (ed).A. Balu, R.S.C. Jayaraj, A. Regupathy. V. Mohan. Rekha R. Warriar. T.P. Raghunath and N. Krishna kumar. IFGTB publication pp.552-563
13. **A. Karthikeyan** (2013). Application of N fixer (an aqua product harbouring superior strains of *Frankia*) as plant growth promoter for *Casuarinas* In: A compendium of Silvicultural Technologies (eds). C. Buvaneshwaran, R.S. Prasanth, T.P. Raghunath and N. Krishnakumar IFGTB publications pp.1-3

14. **A.Karthikeyan** (2013) Afforestation in mine spoils using bio fertilizers In: A compendium of Silvicultural Technologies (eds). C. Buvanewaran, R.S. Prasanth, T.P. Raghunath and N. Krishnakumar IFGTB publications pp.45-48
15. **A.Karthikeyan** (2014). Application of N fixer (an aqua product harbouring superior strains of *Frankia*) as plant growth promoter for Casuarinas In: Transfer of Tree cultivation Technologies (eds) C. Buvanewaran, V. Sivakumar R.S. Prasanth, T.P. Raghunath and N. Krishnakumar IFGTB publications p.36
16. N.B. Sivapriya and **A. Karthikeyan** (2014). Status and influence of beneficial microorganisms in mangrove forests In: Proceedings of international congress of the Malaysian society of microbiology 2013 -Dec 12- 15, 2013. Malaysia. pp.247-251.
17. **A. Karthikeyan** (2014) Blister Bark disease, Identification of Resistance clones of *Casuarina equisetifolia* to Blister bark disease, Frankia: The symbiotic Nitrogen fixing bacteria of Casuarinas, Growth responses of Casuarinas to Beneficial microbes In: Twenty five years of Research on Casuarinas at IFGTB. (eds). Kannan C.S. Warriar, B. Gurudev Singh and N. Krishna Kumar, IFGTB publications 144p.
18. **A. Karthikeyan** (2016) Afforestation in laterite lands at Kasargode Kerala with *Switenea macrophylla* and beneficial microbes. In: Compendium of selected papers of National seminar 2016 Emerging approaches in land use planning held at Thiruvananthapuram on 13 and 14.1.2016. Kerala State Land use board, Thiruvananthapuram pp.145-150.
19. **A. Karthikeyan** (2016). Response of *Casuarina equisetifolia* and *C. junghuhniana* to *Frankia* under field conditions. In: Nicodemus, A., Pinyopusarek, K., Zhong, C.L., Franche, C (Editors). Casuarina improvement for securing rural livelihoods. Proceeding of fifth International Casuarina workshop, Chennai, India from Feb 3 to Feb7 2014. Institute of Forest Genetics and Tree Breeding, India. pp-83-87.

## Books

1. K. Surinderkumar, Ranjeet Singh, S. Chakraborti, **A. Karthikeyan**, Ashok kumar, Charan Sigh, Shailendrakumar, V.P. Pandey (2003). Identification and management of pests and diseases of important Himalayan Trees.HFRI/BR/012. HFRI., Shimla 78p.
2. V. Mohan and **A. Karthikeyan**. (2009). Manual on Biofertilizers and Biomanures (Techniques for Production, Maintenance and Application). Institute of Forest Genetics and Tree Breeding, Coimbatore-641 002. 54p.
3. **A. Karthikeyan** and N. Krishnakumar (2012). Principles and application of *Frankia*. Indian council of Forestry Research and Education, 26p.

4. **A. Karthikeyan** and N. Krishnakumar (2013). Eco friendly approaches for rehabilitation of mine spoils. Indian council of Forestry Research and Education, 59p.

## Popular Articles

1. **A. Karthikeyan (2006)**. Cost effective way to tackle mine spoils. Indian express, Dt. 16.12. 2006.
2. R. Anandalakshmi and **A. Karthikeyan (2009)**. Use of *Calophyllum inophyllum* in Bio diesel (in Tamil) Thina Thanthi Dt. 18.7.2009
3. **A. Karthikeyan** and R. Anandalakshmi (2009). Use of *Pongamia pinnata* in Diesel engines, Thina Thanthi Dt. 27.8.2009
4. **A. Karthikeyan (2010)**. Disease management in nurseries (in Tamil) Thina Thanthi Dt. 18.3.2010
5. **A. Karthikeyan, S.R. Sathishkumar** and K.M. Sakthivel (2010). A New technique for Casuarina rooted stem cuttings. Science and Technology/Agriculture, The Hindu Dt. 19.8.2010.
6. **A. Karthikeyan** (2011). *Ceiba pentandara* (in Tamil) Thina Thanthi Dt. 14.7.2011.
7. **A. Karthikeyan** (2011). *Sapindus emarginatus* (in Tamil) Thina Thanthi. Dt. 31.7.2011.
8. **A. Karthikeyan** and N. Krishnakumar (2011). Bio fertilizers for tree cultivation. Science and Technology/Agriculture, The Hindu Dt. 1.9.2011.
9. **A. Karthikeyan** and N. Krishnakumar (2012). Management of soil pathogens in nursery. Science and Technology/Agriculture, The Hindu Dt. 17.5.2012.
10. **A. Karthikeyan** and N.B. Siva Priya (2013). Bio control agent to control tree infestations Science and Technology/Agriculture, The Hindu Dt. 1.8.2013.
11. **A. Karthikeyan** (2016). Scientists develop new bio fertilizer for Casuarina trees that is 7 times cheaper . Times of India. Dt. 22.1.2016

## Radio talk

Dr. A. Karthikeyan, Scientist E has delivered a talk on ‘Bio fertilizers and bio control methods for management of diseases in tree crops’ (Tamil) which was broadcast in All India Radio Coimbatore on 22.9.2015. He explained the Institute’s activity on bio fertilizer research, bio fertilizer products such as N fixer for Casuarinas, K mobilizer, and Tricho K. He also explained the production of bio control agent (*Trichoderma viride*) and

method of its application to control the diseases of tree crops in nurseries as well as plantations.

Dr. A. Karthikeyan Scientist E has delivered a talk on Disease management methods in tree crops (Tamil) which was broadcast in All India Radio Coimbatore on 27.6.2016. He explained the symptoms of diseases, initial care on tree seedlings and control strategy of diseases in tree crops. He also told about the preparation of Bordeaux mixture and *Tricoderma viride* culture for controlling the pathogens in trees.

**Editorial member of Journals:**

Biological Agriculture and Horticulture  
Scientia Agricola (Brazil)  
Agriculture, Ecosystems and Environment  
Crop Protection  
Research Journal of Microbiology  
Plant Pathology (USA)  
Microbiology Journal  
Asian Journal of Plant Pathology  
International Journal of Plant Pathology  
Canadian journal of Microbiology (Canada)  
African journal of agricultural research  
Journal of Tropical forest science  
Journal of Basic Microbiology  
Forest Pathology

**Countries visited:** P.R. China, Malaysia, Vietnam