DR. JOSHUA N. DANIEL

PROFILE

Personal Data

Name:	Joshua Nallathamby Daniel
Date of Birth:	8 July 1950
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Education

1.	Degree:	Doctor of Philosophy, 1985
	Institution:	University of Hawaii at Manoa, Honolulu, Hawaii, USA
	Major:	Agronomy
	Minor:	Physiology and Ecology of Crops
	Dissertation:	Physiology and Agronomic Use of *Azolla* Species in Rice Culture
2.	Degree:	Master of Philosophy, 1980
	Institution:	Post-graduate Institute of Agriculture, Peradeniya, Sri Lanka
	Specialisation:	Crop Science
	Thesis:	Studies on Maize-Soybean Intercropping Systems with Special Reference to Plant Density
3.	Degree:	Bachelor of Science (Agriculture), 1976
	Institution:	University of Peradeniya, Sri Lanka
	Specialisation:	Plantation Crop Production

Career History

2004 - to-date	Chief Scientist, BAIF Development Research Foundation, Pune, India
1997 - 2004	Principal Scientist, BAIF Development Research Foundation, Pune, India
1990 - 1997	Program Director for India, FACT Net, c/o BAIF, Pune, India
1987 - 1989	Post-Doctoral Fellow, ICRISAT, Hyderabad, India
1986 - 1987	Research Associate, Annamalai University, Tamil Nadu, India
1980 - 1985	Graduate Student, University of Hawaii, Hawaii, U.S.A.
1977 - 1980	Student, Post-Graduate Institute of Agriculture, Sri Lanka
1976 - 1977	Assistant Lecturer in Crop Science, University of Peradeniya, Sri Lanka

Work Experience

A. Research

1. Research involvement at BAIF has been on field or agronomic studies related to agroforestry, multipurpose trees, recycling of waste biomass, use of flyash and sewage sludge in agriculture, intensive food production on small plots, jatropha, biological inputs such as Rhizobium and Effective Microorganisms and nursery techniques. Have also conducted surveys on neem and underutilised fruit production.
2. Post-doctoral research at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) was on the potential of perennial pigeonpea as an agroforestry species. Monitored growth, phenology, root profile, light interception and moisture utilisation. Also studied the effects of perennial pigeonpea on chickpea and sunflower in agroforestry systems, and leaf litter incorporation on growth of maize and pearl millet. Have experience in light and soil moisture measurement techniques, and working knowledge of acetylene reduction assay to estimate nitrogen fixation.
3. PhD dissertation research with *Azolla* included green house growth studies, laboratory measurement of photosynthetic rates using infra-red gas analyser and field experimentation. Conducted experiments in solution culture and under lowland (paddy) conditions.
4. MPhil thesis research included establishment and management of maize-soybean intercropping experiments and collection and analyses of growth and yield data. Conducted experiments with randomised as well as systematic spacing designs.
5. Have very good knowledge of designing field experiments, statistical analysis of data and the use of Word and Excel programmes. Have attended courses / workshops on (a) multivariate analysis and (b) technical writing.

B. Technical Support

1. Have been providing technical support on agriculture and agroforestry for rural development projects implemented by BAIF in several states of India.
2. A member of BAIF teams that provided consultancy for projects on (a) agroforestry, (b) rehabilitation of project-affected small farmers, (c) multipurpose tree species and (d) greenbelt establishment around industrial premises.
3. Provided technical inputs on agroforestry and multipurpose trees for an international team that implemented a research and demonstration project on agroforestry in the Sahel region of Senegal.

C. Programme Coordination

1. As the Program Director (India) of the Forest, Farm, and Community Tree Network (formerly the Nitrogen Fixing Tree Association), coordinated outreach and research support activities for the promotion of multipurpose trees.
2. Have successfully coordinated the implementation of several sponsored projects. Some projects have required regular communications with staff stationed at field sites in other states of India.
3. Coordinated the international workshop on Nitrogen Fixing Trees for Fodder; tasks included local fund raising, identifying participants and preparing background material. Have taken a leading role in organising national workshops on multipurpose tree species.

D. Training and Teaching

1. Have taken an active role in developing modules and conducting short-term trainings for BAIF's field staff as well as extension and research personnel of government and non-government organisations. These trainings have been on a range of topics such as agroforestry, multipurpose trees, organic farming, biological inputs in agriculture, non-edible oils for biodiesel and the ICUC-sponsored programmes on the production of tamarind and ber.

2. As an Assistant Lecturer in Crop Science at the University of Peradeniya in Sri Lanka, was involved in teaching undergraduates.

3. Have written study material on agroforestry for post-graduate diploma courses conducted in distance education mode.

E. Scholarships / Fellowships / Memberships

1. Post-doctoral Fellowship at the International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India
2. East-West Center Scholarship for the PhD degree programme
3. National Science Council of Sri Lanka Studentship for the MPhil degree programme
4. Was a member of the honour societies of Gamma Sigma Delta and Phi Kappa Phi
5. Held memberships of (a) International Tree Crops Society, (b) Indian Society of Agroforestry, (c) Range Management Society of India and (d) Forest, Farm and Community Tree Network

Publications

A. Research

Daniel, J. N., Ong, C. K. and Kumar, M. S. 1989. Fodder Production of Perennial Pigeonpea in Peninsular India. *International Pigeonpea Newsletter* 10: 11-12.

Daniel, J. N. and Ong, C. K. 1990. Perennial pigeonpea: a multi-purpose species for agroforestry systems. *Agroforestry Systems* 10: 113-129.

Daniel, J. N., Ong, C. K. and Kumar, M. S. 1991. Growth and resource utilization of perennial pigeonpea (*Cajanus cajan* (L) Millsp.) at the tree-crop interface. *Agroforestry Systems* 16: 177-192.

Daniel, J. N. and Bartholomew, D. P. 1993. Growth and photosynthesis of three *Azolla* species in response to irradiance. *Biotronics* 22: 1-14.

Daniel, J. N., Hegde, N. G. and Relwani, L. L. 1994. Performance of *Albizia lebbeck* in semiarid India. pp. 22-26. *In* Proceedings of the International Workshop on *Albizia* and *Paraserianthes* Species. (N. Q. Zabala, ed.). Winrock International, Arkansas, U.S.A.

Daniel, J. N. and Hegde, N. G. 1994. Growth of *Dalbergia sissoo* in avenue and block plantings. *Nitrogen Fixing Tree Research Reports* 12: 60-64.

Daniel, J. N. 1996. Management of short-duration perennials (*Cajanus cajan*, *Sesbania sesban* and *Sesbania grandiflora*) in Tamil Nadu, India. *Forest, Farm, and Community Tree Research Reports* 1: 10-15.

Childs, F. J., Chamberlain, J. R., Antwi, E. A., Daniel, J. N. and Harris, P. J. C. 2001. Improvement of neem and its potential benefits to poor farmers. Research report for Forestry Research Programme, U.K. Department for International Development.

Kauthale, V. K., Takawale, P. S., Kulkarni, P. K. and Daniel, J. N. 2005. Influence of flyash and sewage sludge application on growth and yield of annual crops. *International Journal of Tropical Agriculture*, 23 (1-4): 49-54.

Daniel, J. N. and Dudhade, P. A. 2007. Analysis of value chains of three underutilised fruits of India. Research Study Series, International Centre for Underutilised Crops, Colombo, Sri Lanka.

B. General

Ong, C. K. and Daniel J. N. 1990. Pigeonpea: traditional crop sparks new interest as a multipurpose tree. *Agroforestry Today* 2: 4-7.

Daniel, J. N. 1991. Demonstration tree gardens for the promotion of multipurpose tree species. *The BAIF Journal* 11: 5.

Daniel, J. N. 1993. Biological fixation and transfer of nitrogen by trees in agroforestry systems. *Range Management and Agroforestry* 14: 185-194.

Daniel, J. N. and Hegde, N. G. 1993. Women in the promotion of multipurpose tree species: current status and future perspectives. *In* Proceedings of the workshop on the Role of Women the Promotion of Multipurpose Tree Species, pp. 14-25. BAIF Development Research Foundation, Pune, India.

Daniel, J. N. 1994. Potential of *Rhizobium* and other biological inputs in tree farming. *In* (P. K. Thampan, ed.) *Trees and Tree Farming*, pp. 149-164. Peekay Tree Crops Development Foundation, Cochin, India.

Daniel, J. N. 1994. The role of nitrogen fixing trees in sustainable agriculture. *In* Proceedings of the International Workshop on Sustainable Farming and Environment. UPASI, Kottayam, India.

Daniel, J. N., Roshetko, J. M., Iosefa, T., Anin-Kwapong, J. G., Okunomo Kehinde and Djogo, A. P. Y. 1998. Intercropping systems. *In* (J. M. Roshetko, ed.) *Albizia* and *Paraserianthes* Production and Use: A field manual. pp. 18-22. Winrock International Institute for Agricultural Development, Arkansas, U.S.A.

Escalante, E. E., Daniel, J. N., Roshetko, J. M. 1998. Fodder production systems. *In* (J. M. Roshetko, ed.) *Albizia* and *Paraserianthes* Production and Use: A field manual. pp. 23-28. Winrock International Institute for Agricultural Development, Arkansas, U.S.A.

Daniel, J. N. and Hegde, N. G. 1999. Tree domestication considerations for small-farm agroforestry. *In* Proceedings of the Workshop on Domestication of Agroforestry Trees in Southeast Asia. pp. 164-167. ICRAF, Nairobi, Kenya.

Daniel, J. N. 1999. Tree-based dryland farming in India. *NFT News* 2 (1): 2-3.

Daniel, J. N. 1999. Promotion of Organic Farming in Rural Development Programmes in India. Paper presented at the Sixth International Conference on Kyusei Nature Farming, Pretoria, South Africa.

Daniel, J. N. 2000. Studies on EM-based Farming Practices for Small Farmers in India. Paper presented at the International Conference on EM Technology and Nature Farming, 20-22 September 2000, Pyongyang, DPR Korea.

Daniel, J. N. 2001. Utilisation of treated wastewater and sludge for agriculture and tree farming. Paper presented at the GWP-SASTAC Workshop on the Reuse of Treated Wastewater and Sludge for Agriculture in South Asia. 7-8 December 2001, Pune, India.

Daniel, J. N., Takawale, P. S., Kauthale, V. K. and Kulkarni, P. K. 2002. EM application studies on a low organic matter soil in India. Paper presented at the Seventh International Conference on EM Technology and Nature Farming, 15-18 January 2002, Christchurch, New Zealand.

Daniel, J. N. 2003. Domestication considerations for Tree-Borne Oilseed Species. Paper presented at the National Workshop on Strategies for the Production of non-edible Oil for Use as Biofuels. 6-7 September 2003, Indian Institute of Science, Bangalore, India.

Daniel, J. N. 2005. Multipurpose exotic species in small farm agroforestry. Paper presented at the National Symposium on Exotics in Indian Forestry. 15-18 March 2005, Punjab Agricultural University, Ludhiana, India.

Daniel, J. N. 2005. A realistic approach for jatropha oilseed production. Paper accepted for publication in *Future Energy*, a journal published by the Maharashtra Energy Development Agency, Pune, India.

Daniel, J. N. 2005. Jatropha production options under varied resource conditions. Paper presented at the National Seminar on Biodiesel, organised by the Institute of Rolling Stock Engineers - Southern Railway Chapter, 23-24 September, Chennai, India.

Daniel, J. N., Dhar, S. and Desai, J. 2005. Improving livelihoods through vermicomposting. *LEISA*, 21(3): 12-13, The Netherlands. Also published in LEISA India, 7(3): 19-20, Bangalore, India.

Hegde, N. G. and Daniel, J. N. 2005. Tree domestication experience of BAIF with tamarind. Paper presented at the National Consultation Meet on Tamarind, Kokum and Amla, organised by the National Bank for Agriculture and Rural Development, 2 December 2005, Pune, India.

Daniel, J. N. and Hegde, N. G. 2007. Tree-borne oilseeds in agroforestry. Paper presented in National Seminar on Changing Global Vegetable Oils Scenario: Issues and Challenges before India, January 2007, Hyderabad, India.

C. Editor / Co-editor of the following Workshop Proceedings

1. International Workshop on Nitrogen Fixing Trees for Fodder Production (1995)
2. National Workshop on Multipurpose Tree Species for Small Farmers (1991)
3. Promotion of Non-wood Forest Produce through Social Forestry (1992)
4. Role of Women in the Promotion of Multipurpose Tree Species (1993)
5. Multipurpose Tree Species for Agroforestry Systems in India (1994)
6. Jatropha and Other Tree-borne Oilseed Species (2003)
7. Underutilised Fruit Species for Food-Nutrition Security and Rural Livelihood (2007)

D. Periodicals

1. One of the editors of *MPTS Newsletter*, a semi-annual publication
2. A member of the Editorial Committee of *BAIF Journal*, a quarterly publication of the current employer

E. Training Booklets

1. Nitrogen Fixing Trees (J. N. Daniel)

2. Agroforestry (J. N. Daniel)
3. Tamarind: Homestead Tree to Commercial Orchard (J. N. Daniel and N. G. Hegde)
4. Ber: A Boon for Wastelands (N. G. Hegde and J. N. Daniel)
5. Sustainable Farming (J. N. Daniel)

F. Others

1. Posters on production and utilisation of underutilised fruits
2. Fact sheets