CURRICULUM VITAE

SONIA MARAYA TIQUIA

EDUCATION

Doctor of Philosophy (Environmental Microbiology)
The University of Hong Kong, Hong Kong
October 1996

Bachelor of Science (Agriculture)
(*Cum Laude*)
Central Luzon State University, Philippines
April 1991
Major: Plant Pathology, Minor: Weed Science

RESEARCH INTERESTS

- Microbial ecology of composting systems
- Microbial community structure and dynamics in soils, water, and plant rhizospheres
- Biological treatment of organic wastes
- Nutrient cycling in waste management systems
- Enzymatic studies in soils and composts
- Application of molecular tools to address issues related to environmental pollution and agricultural systems.
- Bioremediation of organic wastes

PUBLICATIONS

A. INTERNATIONAL REFEREED JOURNAL ARTICLES

1. **Tiquia, S.M.** 2001. Evolution of enzyme activities during manure composting. Journal of Applied Microbiology (In press).
2. **Tiquia, S.M.,** Wan, J.H.C., and Tam, N.F.Y. 2001. Dynamics of yard trimmings composting as determined by dehydrogenase activity, ATP content, arginine ammonification, and nitrication potential Process Biochemistry (In press).
3. **Tiquia, S.M.,** Wan, J.H.C., and Tam, N.F.Y. 2001. Microbial population dynamics and enzyme activities during composting. Compost Science and Utilization (In press).
4. **Tiquia, S.M.,** Wan, J.H.C., and Tam, N.F.Y. 2001. Extracellular enzyme profiles during co-composting of poultry manure and yard trimmings. Process Biochemistry 36 (8–9): 813–820.
5. **Tiquia S.M.,** Richard, T.L., and Honeyman, M.S. 2001. Carbon, nitrogen, and mass loss during composting. Nutrient Cycling in Agroecosystems (In press).
6. **Tiquia, S.M.,** and Tam, N.F.Y. 2001. Characterization and composting of poultry litter in forced-aeration piles. Process Biochemistry (In press).

7. **Tiquia, S.M.,** Richard, T.L., and Honeyman, M.S. 2000. Effects of windrow turning and seasonal temperatures on composting of hog manure from hoop structures. Environmental Technology. 21: 1037–1046.
8. **Tiquia, S.M.,** and N.F.Y. Tam 2000. Fate of nitrogen during composting of chicken litter. Environmental Pollution. 110: 535–541.
9. **Tiquia, S.M.,** and Tam, N.F.Y. 2000. Co-composting of spent pig litter and sludge with forced-aeration. Bioresource Technology. 72: 1–7.
10. Tam, N.F.Y., and **Tiquia S.M.** 1999. Nitrogen transformation during co-composting of spent pig manure, sawdust litter and sludge in forced-aerated system. Environmental Technology. 20: 259–267.
11. Richard, T.L., and **Tiquia, S.M.** 1999. In-Barn Composting System Plus a Warm Bed for Pigs. BioCycle. 40(10): 44.
12. **Tiquia, S.M.,** and Tam, N.F.Y. 1998. Composting of spent pig litter in turned and forced aerated piles. Environmental Pollution. 99: 329–337.
13. **Tiquia, S.M.,** and Tam, N.F.Y. 1998. Elimination of phytotoxicity during co-composting of spent pig-manure sawdust litter and pig sludge. Bioresource Technology. 65: 43–49.
14. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1998. Composting of spent pig litter at different seasonal temperatures in subtropical climate. Environmental Pollution. 98 (1): 97–104.
15. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1998. *Salmonella* elimination during composting of spent pig litter. Bioresource Technology. 63: 193–196.
16. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1998. Changes in chemical properties during composting of spent litter at different moisture contents. Agriculture, Ecosystems, and Environment. 67: 79–89.
17. **Tiquia, S.M.,** and Tam, N.F.Y. 1998. Composting of pig manure in Hong Kong. BioCycle. 39 (2): 78–79.
18. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1997. Effects of turning frequency on composting of spent pig-manure sawdust litter. Bioresource Technology. 62: 37–42.
19. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1997. Effects of bacterial inoculum and moisture adjustment on further composting of pig manure. Environmental Pollution. 96: (2) 161–171.
20. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1996. Microbial activities during composting of spent pig-manure sawdust litter at different moisture contents. Bioresource Technology. 55: 201–206.
21. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1996. Effects of composting on phytotoxicity of spent pig-manure sawdust litter. Environmental Pollution. 93 (3): 249–256.
22. Tam, N.F.Y., and **Tiquia, S.M.** 1994. Assessing toxicity of spent pig litter using a seed germination technique. Resources, Conservation, and Recycling. 11: 261–274.

B. BOOK CHAPTERS

1. **Tiquia, S.M.,** and Michel, F.C., Jr. 2001. Bacterial diversity in livestock manure composts as characterized by terminal restriction fragment length polymorphisms (T-RFLP) of PCR-amplified 16S rRNA gene sequences. In: Microbiology of Composting and Other Biodegradation Processes. H. Insam (editor) Springer-Verlag, Germany (In press).
2. **Tiquia, S.M.** 2001. Microbial transformation of nitrogen during composting. In: Microbiology of Composting and Other Biodegradation Processes. H. Insam (editor) Springer-Verlag, Germany (In press).

3. **Tiquia, S.M.** 2000. Evaluating phytotoxicity of pig manure from the pig-on-litter system. In: International Composting Symposium (ICS 1999). Volume II. P.R. Warman and B.R. Taylor (Editors). CBA Press, Inc., Nova Scotia, Canada. pp. 625–647.
4. **Tiquia, S.M.,** and Tam, N.F.Y. 2000. Microbiological and chemical parameters for compost maturity evaluation of spent pig litter disposed from the pig-on-litter system. In: International Composting Symposium (ICS 1999). Volume II. P.R. Warman and B.R. Taylor (Editors). CBA Press, Inc., Nova Scotia, Canada. pp. 648–669.
5. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1996. Effect of moisture content on the composting of pig-manure sawdust litter disposed from the pig-on-litter (POL) system. In: The Science of Composting. Part II. M. De Bertoldi, P. Sequi, B. Lemmes, and T. Papi (Editors). Chapman and Hall, London, U.K. pp. 1361–1364.
6. Tam, N.F.Y., **Tiquia, S.M.,** and Vrijmoed, L.L.P. 1996. Nutrient transformation of pig manure under pig-on-litter system. In: The Science of Composting. Part I. M. De Bertoldi, P. Sequi, B. Lemmes, and T. Papi (Editors). Chapman and Hall, London, U.K. pp. 96–105.

C. PROCEEDINGS/TECHNICAL ARTICLES

1. Garrison M., Richard, T.L., **Tiquia, S.M.** and Honeyman, M.S. 2001. Nutrient losses from unlined bedded swine hoop structures and an associated windrow composting site. ASAE Paper No. 012238. American Society of Agricultural Engineers (ASAE) International Meeting. Sacramento, Califonia, U.S.A. July 29–August 1, 2001.
2. **Tiquia, S. M.,** and Tam, N.F.Y. 1999. Chemical parameters for maturity determination of pig manure disposed from the pig-on-litter (POL) system in Hong Kong. In: Manure Management '99. ed. Extension Division-University of Saskatchewan. Saskatoon, Saskatchewan, Canada. pp. 449–463.

D. THESES

1. **Tiquia, S.M.** 1996. Further Composting of Pig–Manure Disposed from the Pig-on-Litter (POL) System in Hong Kong. Ph. D. Thesis. The University of Hong Kong. Pokfulam Road, Hong Kong. 475 p.
2. **Tiquia, S.M.** 1991. Influence of Simulated Rainfall on the Efficacy of Fluazifop-butyl against *Echinochloa colona* (L.) Link. B. Sc. Thesis. Central Luzon State University. Munoz, Nueva Ecija, Philippines. 47 p.

E. PAPERS RECENTLY SUBMITTED TO INTERNATIONAL REFEREED JOURNALS

1. **Tiquia, S.M.,** Lloyd, J., Herms, D., Hoitink, H.A.J., and Michel, F.C. Jr. 2001. Effects of mulching and fertilization on soil nutrients, microbial activity and rhizosphere bacterial community structure determined by terminal restriction fragment length polymorphisms (T-TFLP) of 16S rDNA. Applied Soil Ecology (In review).
2. **Tiquia, S.M.** 2001. Evaluation of organic matter and nutrient composition of partially decomposed and composted spent pig-litter compost. Environmental Technology (In review).

PRESENTATIONS AND ASSOCIATED PAPERS IN CONFERENCES, SEMINARS, AND SYMPOSIA

1. **Tiquia S.M.,** Keener, H.M., Elwell, D., Ichida, J.M., Burt, Jr., E. and Michel, Jr., F.C. (2002) Microbial community structure during composting of waste feathers using terminal restriction fragment length polymorphisms of 16S rDNA. Paper accepted for presentation at the International Symposium on Composting and Compost Utilization to be held in Columbus, Ohio, U.S.A. on May 6–8, 2002.
2. **Tiquia, S.M.,** Lloyd, J., Herms, D.A., Hoitink, H.A.J. and Michel, F.C. Jr. (2001) 16S rDNA-based detection of root-associated bacterial populations of cucumber (*Cucumis sativus* L. Straight) following different organic mulch treatments. Paper to be presented at the International Society for Microbial Ecology (ISME 9) Conference held on August 26–31, 2001 in Amsterdam, The Netherlands.
3. **Tiquia, S.M.** 2001. Microbial community analysis of various environmental samples: A research report. Departmental Research Meeting. Department of Food, Agricultural and Biological Engineering. The Ohio State University, Ohio Agricultural Research and Development Center. Wooster, Ohio, U.S.A. June 25, 2001.
4. **Tiquia, S.M.** 2001. Characterization of compost and rhizosphere microbial communities using molecular tools. United States Department of Agriculture-Agricultural Research Service (USDA-ARS), Stoneville, Mississippi, U.S.A. March 20, 2001.
5. Garrison M., Richard, T.L., **Tiquia, S.M.** and Honeyman, M.S. 2001. Nutrient losses from unlined bedded swine hoop structures and an associated windrow composting site. ASAE Paper to be presented at the American Society of Agricultural Engineers (ASAE) International Meeting. Sacramento, Califonia, U.S.A. July 29–August 1, 2001.
6. **Tiquia, S.M.,** 2000. Microbial transformation of nitrogen during composting. International Conference on Microbiology of Composting and Other Biodegradation Processes. October 18–20, 2000. Innsbruck, Austria.
7. **Tiquia, S.M.,** Wan, J.H.C., and Tam, N.F.Y. 2000. Microbial population dynamics and evolution of enzyme activities during composting. International Conference on Microbiology of Composting and Other Biodegradation Processes. October 18–20, 2000. Innsbruck, Austria.
8. **Tiquia, S.M.,** and Michel, F.C., Jr. 2000. 16S rDNA-based analysis of bacterial diversity in livestock manure compost. International Conference on Microbiology of Composting and Other Biodegradation Processes. October 18–20, 2000. Innsbruck, Austria.
9. Michel, F.C. Jr., **Tiquia, S.M.,** Rao, G., Marsh T., Hoitink, H.A.J., and Reddy C.A. 2000. Characterization of microbial community structure during composting using analysis of terminal restriction fragment length polymorphisms of 16S rDNA. International Conference on Microbiology of Composting and Other Biodegradation Processes. October 18–20, 2000. Innsbruck, Austria.
10. **Tiquia, S.M.** 2000. Web sites and computer programs/software for ribosome-related data analyses. Soil Microbial Ecology Research Forum (SMERF) Seminar Series. The Ohio State University-OARDC, Wooster, Ohio, U.S.A.
11. **Tiquia, S.M.** 1999. Evaluating phytotoxicity of pig manure from the pig-on-litter system. International Composting Symposium (ICS ’99). September 19–23, 1999. Halifax, Nova Scotia, Canada.
12. **Tiquia, S.M.** 1999. Management of manure from the pig-on-litter system: A Hong Kong experience. Ohio Composting and Manure Management (OCAMM) Seminar Series. April 27, 1999. Ohio Agricultural Research and Development Center (OARDC), The Ohio State University, Wooster, Ohio, U.S.A.

13. **Tiquia, S.M.,** and Tam, N.F.Y. 1999. Chemical parameters for maturity determination of pig manure compost disposed from the pig-on-litter system in Hong Kong. Manure Management Conference 1999. June 22–25, 1999. Saskatoon, Saskatchewan, Canada.
14. **Tiquia, S.M.,** and Tam, N.F.Y. 1999. Microbiological and chemical parameters for compost maturity evaluation of spent pig litter disposed from the pig-on-litter system. International Composting Symposium (ICS '99). September 19–23, 1999. Halifax, Nova Scotia, Canada.
15. Wan, J.H.C., Tam, N.F.Y., and **Tiquia, S.M.** 1999. Effects of aeration frequency on co-composting of chicken manure and green waste. International Composting Symposium. September 19–23, 1999. Halifax, Nova Scotia, Canada.
16. Imerman, P.M., Richard, T.L., and **Tiquia, S.M.,** and Schrunk, D. 1999. The effects of composting on tetracycline-type antibiotics from swine manure. 113th AOAC International Annual Meeting and Exposition. September 26–30, 1999. Houston, Texas, U.S.A.
17. Wan, J.H.C., **Tiquia, S.M.,** and Tam, N.F.Y. 1998. Elimination of phytotoxicity in mixture of chicken and green manure by windrow composting. International Conference on Environmental Contamination, Toxicology and Health. September 23–25, 1998. Hong Kong Baptist University. Kowloon, Hong Kong.
18. **Tiquia, S.M.,** and Tam, N.F.Y 1998. Forced-aerated composting: An alternative method in composting spent pig litter disposed from the pig-on-litter system in Hong Kong. 6th Pacific Rim Biotechnology Conference and BioExpo 98. June 3–5, 1998. The Hong Kong University of Science and Technology, Clearwater Bay, Hong Kong.
19. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1996. Destruction of pathogens during composting of spent pig-manure sawdust litter. Joint University Biology Symposium. November 1, 1996. The Hong Kong University of Science and Technology. Clearwater Bay, Hong Kong.
20. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1995. Effect of Moisture Content on the Composting of Pig-manure Sawdust Litter Disposed from the Pig-on-litter (POL) System. International Symposium on the Science of Composting. May 30–June 02, 1995. Bologna, Italy.
21. Tam, N.F.Y., **Tiquia, S.M.,** and Vrijmoed, L.L.P 1995. Nutrient Transformation of Pig Manure Under Pig-on-litter System. The Science of Composting. May 30–June 02, 1995. Bologna, Italy.
22. **Tiquia, S.M.,** Tam, N.F.Y., and Hodgkiss, I.J. 1995. Optimum Moisture Content for Rapid Composting of Pig-manure Sawdust Litter Disposed from the Pig-on-litter (POL) System. Joint University Biology Symposium. September 1, 1995. City University of Hong Kong, Kowloon, Hong Kong.
23. **Tiquia, S.M.** 1995. Further Composting of the Spent Litter Disposed from the Pig-on-litter (POL) System. Department of Biology and Chemistry Research Seminar. June 18, 1995. City University of Hong Kong, Kowloon, Hong Kong.
24. Tam, N.F.Y., and **Tiquia, S.M.** 1993. Assessing Toxicity of Spent Pig Litter Using a Seed Germination Technique. International Conference on Environmental Technology in Waste Treatment and Recycling. January 12–14, 1993. Hong Kong Baptist College, Kowloon, Hong Kong.

RESEARCH FELLOWSHIPS, AWARDS, AND GRANTS

1. FEMS Young Scientist Grant (2000), Federation of European Microbiological Societies.
2. University Seed Grant (2000), The Ohio State University Research Foundation. Project Title: Analysis of Microbial Communities Active during Composting (Investigators: F.C. Michel, Jr. and **S.M. Tiquia**, US$20,000)
3. Ohio Agricultural Research and Development Center (OARDC) Seed Grant (2000), OARDC Research Enahancement Competitive Grants Program. Project title: Use of DNA-based Methods to Analyze Microbial Communities in Soils that Induce Plant Disease Systemic Resistance. (Investigators: F.C. Michel Jr., **S.M. Tiquia,** and H.A.J. Hoitink, US$ 20,000)
4. Central Matching Fund Post-doctoral Research Fellowship (1996–1997), City University of Hong Kong. Project title: Composting of Animal Manure and Sludge in Hong Kong (Invetigators: **S.M. Tiquia** and N.F.Y. Tam, HK$ 264, 420)
5. Central Matching Fund Post-doctoral Research Fellowship (1997–1998), City University of Hong Kong. Project title: Composting of Animal Manure using the Passively-aerated Windrow Composting Technology in Hong Kong. (Investigators: **S.M. Tiquia** and N.F.Y. Tam,; HK$ 298, 200)
6. Dean's Honour List, Central Luzon State University. Nueva Ecija, Philippines. SY 1988–1990.

PROFESSIONAL ACTIVITIES

1. Editorial Board Member, Process Biochemistry. October 2001-
2. Reviewer, Bioresource Technology. Elsevier Publishers. 2001.
3. Reviewer, Process Biochemistry. Elsevier Publishers. 2001
4. Reviewer, Annals of Applied Biology. 2001.
5. Reviewer, Geoderma, Elsevier Publishers. 2001
6. Reviewer, Proceedings of the International Conference on Microbiology of Composting and Other Biodegradation Processes, 2000
7. Reviewer, Proceedings of the International Composting Symposium, 1999 (ICS '99).
8. Reviewer, Proceedings of the Eight International Symposium on Animal, Agricultural, and Food Processing Wastes (ISAAFPW) 2000.
9. Demonstrator, Ohio Compost Operator Education Course. The Ohio State University-OARDC, Wooster, Ohio. February 27–28, 2001.
10. Regional Representative (Hong Kong/China), International Composting Symposium '99. Halifax, Nova Scotia, Canada. September 19–23, 1999.
11. Consultant, Kadoorie Farm and Botanic Garden, Tai Po, Hong Kong. Project: Windrow composting of Farm Wastes and Re-utilisation of the Composted Product (1997–1998)
12. Thesis co-supervisor, Judy H.C. Wan (Master of Philosophy candidate), City University of Hong Kong Thesis title: Co-composting of chicken manure and green waste under turned and forced aeration systems. October 2000. (Co-supervised with Prof. Nora F.Y. Tam)

PROFESSIONAL MEMBERSHIP

1. American Society for Microbiology (ASM). 2000–2001.
2. American Association for the Advancement of Science (AAAS). 2001.
3. International Society for Microbial Ecology (ISME). 2000–2001.
4. Ohio Composting and Manure Management Program (OCAMM). 1999–2001.

5. Soil Microbial Ecology Research Forum (SMERF). 1999–2001.
6. The International Solid Waste Management Association (ISWA). 1999.
7. American Society of Agronomy (ASA). 1999.
8. Crop Science Society of America (CSSA). 1999.
9. Soil Science Society of America (ASSA). 1999