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2009 : August 2009 - Fast Breaking Papers : Zhihong Xu Talks About His Research in Agricultural Sciences

**FAST BREAKING PAPERS - 2009**

**August 2009**



**Zhihong Xu talks with *ScienceWatch.com* and answers a few questions about this month's Fast Breaking Paper in the field of Agricultural Sciences.**



**Article Title: Soil carbon and nutrient pools, microbial properties and gross nitrogen transformations in adjacent natural forest and hoop pine plantations of subtropical Australia**

Authors: Xu, ZH;Ward, S;Chen, CR;Blumfield, T;Prasolova, N;Liu, JX  
Journal: J SOILS SEDIMENTS, Volume: 8, Issue: 2, Page: 99-105, Year: APR 2008

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\* Griffith Univ, Ctr Forestry & Hort Res, Nathan, Qld 4111, Australia. (addresses have been truncated)

**SW: Why do you think your paper is highly cited?**

The paper reports a comprehensive study of both methods testing and application in quantifying soil carbon and nutrient pools under different forest management practices, which has not only local implications for sustainable forest management but also the international significance of carbon sequestration and cycling within the forest ecosystems of subtropical and tropical environments.

**SW: Would you summarize the significance of your paper in layman's terms?**

This study has made significant contributions to the improved understanding of long-term impacts of different land uses on soil carbon and nutrient pools in adjacent natural forest and native hoop pine plantations of subtropical Australia.

These research findings have major implications for developing sustainable forest management practices to improve long-term soil fertility and forest productivity as well as carbon sequestration in this subtropical region.

**SW: How did you become involved in this research, and were there any problems along the way?**

The decline of soil fertility and productivity in the second rotation of native hoop pine plantations in South East Queensland, Australia, has been considered to be the major limiting factors for developing sustainable plantation management, but there was a lack of scientific evidence and understanding in the key soil chemical and biological processes leading to the soil fertility and productivity decline. Hence, this research topic has both practical industry implications and scientific significance in the underlying ecosystem processes.

**SW: Where do you see your research leading in the future?**

This has led us to undertake a series of well-integrated studies in soil microbial ecology—particularly functional microbial diversity—and organic matter chemistry, as well as forest ecophysiology, which


*"This has led us to undertake a series of well-integrated studies in soil microbial ecology..."*

focuses on biogeochemical cycles of carbon and nutrients in response to local management practices and global climate change.

**Professor Zhihong Xu**  
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**School of Biomolecular and Physical Sciences**  
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KEYWORDS: FOREST MANAGEMENT; HOOP PINE PLANTATIONS; PLANTATION PRODUCTIVITY; SOIL MICROBIAL ACTIVITY; SOIL NUTRIENT AVAILABILITY; SPATIAL VARIABILITY.

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