Land Application of Livestock Manure in Hawaii and the American Pacific

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Land Application Studies

Project research results have been presented previously and will be summarized here:

- Composition of manures and effluents in Hawaii were similar to the mainland US, except for higher Cu and Zn contents due to feed supplements and disease treatments.
- A highly weathered tropical soil (Oxisoil) retained much more P against runoff than a less weathered soil (Mollisol). P release varied with P source: fastest from inorganic P (TSP) and slowest from swine manure, with chicken manure intermediate.
- 4 to 6 months. New bedding is added weekly.
- High soil retention rates for P and high nutrient removal rates by forages indicate that high efficient and manure application rates can be environmentally acceptable in tropical areas.

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Livestock operations in Hawaii were surveyed in 2001, showing high water utilization, and community leaders attending.

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Increased Farm Adoption

- Community workshop in Rota, CNMI
- What's Next?
  - American Samoa EPA invited project personnel as consultants in November 2005, promoting piggy waste management systems to reduce a serious outbreak of leptospirosis. This disease is common in the Pacific Islands and is often transmitted to humans from pigs. On-going activities are planned in American Samoa in 2006.
  - Hawaii is hosting the Water Quality Coordinator from Nevada on sabbatical in 2005-2006 to develop improved methods for environmental detection of leptospirosis.
  - Education and demonstration of composting and dry litter systems continues in the American Pacific Islands. Current 2006 activities are focused on Palau, Pohnpei, CNMI, and Guam.
  - A large scale planting of tropical grasses with effluent irrigation is planned for 2006 at a major Oahu dairy.  
  - Project publications are being drafted, including journal articles for submission to Journal of Environmental Quality and Agronomy Journal on the project land application research.
  - Three extension articles have been authorized and are being developed for the LPES Small Farms Fact Sheet series, using project results.