



## **USDA-CSREES 2006 National Water Quality Conference**

### **An Alternative Waste Management System to Swine Operations in the American Pacific**

It was noted on the 14th meeting of the Permanent Heads of Agriculture and Livestock Services in the Pacific (PHALPS, 2001) " The impact of animal waste on the environment and human health is a growing problem in the Pacific Island countries. Pig manure like other animal wastes is high in nutrients including nitrogen and phosphorous, high biological oxygen demand (BOD) as well as being a source for human pathogens and parasites which makes pig manure a potential surface water, groundwater, coastal water and human health hazard if not properly managed. Currently, An alternative waste management system in swine operation in the pacific is being promoted to solve these alarming problems. Adopted from the Hawaiian Modified Dry Litter System, the Marianas Dry Litter System uses available carbon materials such as chipped coconut husk and woods as bedding in pigpens. It allows farmers to safely manage animals while promoting a healthy and clean environment through sustainable utilization of animal waste and carbon materials as compost. The key benefit of a dry litter system is that there is no hose-down and no resulting effluent to manage and therefore no direct discharge of solids/liquids into ground or surface waters. This means no pathogens that can cause water borne diseases, no well water contamination and no pollutants that are possible link to reproductive difficulties. The system also uses high temperature during pre and post composting process inhibiting some microorganisms that are possible host for infectious diseases. The Marianas Dry Litter System for small-scale swine operations offers options in the prevention of water pollution and as well as human infections. Drinking water is considered to be a significant transfer vehicle making open tanks; wells, creeks/rivers and water logged soils risk factors in areas where animal waste is not controlled. Recreational exposure (swimming, windsurfing etc) in rivers and saltwater lagoons has also been implicated as a pathway of infection. Water born infections include dysentery, typhoid and non-specific diarrhea. Leptospirosis, which is of public health importance in pacific island is caused by a microorganism that can pass to humans from animal urine is also a disease that can be transferred by contaminated surface waters. At present, EPA regulations are focused on large-scale hog feeding operations. Therefore, small-scale piggeries are left un-checked, specifically in Pacific island countries. A next step on Animal waste regulation must be made and enforce to subsistence farmers based on location and type of waste management system to use. Another factor to consider is the implementation of an incentive scheme program for farmers to implement waste management systems on their farms, which is a good way to encourage and change the behavior of most Pacific island farmers towards

waste management. Furthermore, because the general population has little understanding of the potential hazards of animal waste seepage into water resources, a rigid educational campaign and professional staff must be allocated per country for sustainability.

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