

Alternative waste management solutions for small-scale piggery operations: Educational outreach, demonstration and adoption for Pacific Island communities.



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Pacific island nations face many challenges in providing food sources for their residents. Increasing populations with high food demands, limited agricultural production, and geographic isolation mean these U.S. protectorates face significant food security risks. The most obvious of these risks for Pacific Island communities is the extremely low level of available food for local populations in an emergency. But perhaps even more damaging is the lack of available fresh meats and vegetables, or the high cost of

these items when they are available. Expensive local produce and the ever-increasing cost of imported goods have pushed food costs above what many households can afford. This caused a major shift toward the consumption of more affordable processed and canned foods. As a result, healthy eating habits and overall health and well-being in Pacific Island communities have decreased over the last few decades, as levels of respiratory diseases, diabetes, heart disease, and cancer rise.

The United States employs federal programs in the Pacific, including the U.S. Department of Agriculture and land grant-cooperative Extension programs, that are charged with to improving or promoting agriculture production and creating a shift in eating habits. This is a daunting task for many federal programs and technologies that were developed for mainland production. Furthermore, federal programs have high turnover rates of employees, and no clear venue for communication between agencies and community programs



Combining natural elements. Dry carbon bedding, sloping pen floors, gravity, and natural hog behavior combine to stabilize and convert animal wastes into a soil amendment for use in cropping systems.

that are developing appropriate technologies and program delivery systems for Pacific Island ecosystems and societies. Fortunately, the National Water Program has a continued, long-term, and sustained focus on dialogue between agencies and communities to include the development of appropriate agriculture technologies for island producers, particularly in the area of animal waste management.

Animal waste management is a matter of life or death for Pacific Islanders. Hogs raised in small backyard systems are the primary source of fresh meats for local families. Without these small systems, families would rely on imported processed foods. However, these backyard production systems often create environmental pollution that adversely affects human health. The Region 9 Water Program provides options for producers through the development of sound alternatives for animal waste management that produce a by-product that can be used to improve

crop production for human or animal consumption. This has been accomplished through the education of producers, Extension personnel, and local and federal agencies over almost 20 years. By maintaining a high level of discussion throughout the region, directing funding from multiple sources, improving the level of appropriate educational materials

and programs, and continuing evaluation and improvements to the technologies, producers' attitudes have shifted in their views of animal waste as a resource rather than a problem. Improvements to water quality in communities such as Samoa have been embraced and promoted in order to protect water systems and individuals' self-reliance.



Closing the cycle. The integrated composting system is an important design element of the dry litter technology.



Out with the old and in with the new. Paradigms of long-established waste systems are changing from polluted waste and liability (fenced pit at left) to a simple and logical nutrient management system where nutrients are a resource and desirable asset of the piggery operation (covered unit on right).