TECHNOLOGY DESCRIPTION

Aeration has been used by municipalities and industries for years to stabilize waste solids, as well as control odors. The technology also dramatically reduces odor emissions from livestock operations. Aeration has not been used extensively in agriculture, however, because of the added utility costs. Two cooperators are demonstrating aeration in the Odor Control Demonstration Project.

To provide aeration, a mechanical device typically forces air into the liquid being treated such as lagoon liquid. Traditionally, for complete waste stabilization enough air has been added to equal twice the daily biological oxygen demand (BOD) produced. However, less air may be needed to simply control odor.

EFFECTIVENESS

In aerobic systems the resulting gaseous products are carbon dioxide, water, and sulfates, rather than methane, hydrogen sulfide, ammonia, and volatile acids. The products of properly designed and operated aerobic systems are not odorous.
COST

In operations in which just enough air is added to control odors, the average annual cost of utilities is estimated to be $3.00 per pig capacity (based on a rate of 6 cents per kilowatt hour). Floating aerators range in price from $3,000 to $6,000, and more than one device may be needed for large pits and lagoons. In a large sow facility the per-head cost for the complete system and utilities ranges from $4 to more than $6 per sow annually.