Development of Comprehensive Nutrient Management Plans for Animal Feeding Operations

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Over 1.4 million agricultural enterprises in the United States have livestock or poultry operations of more than 0.1 animal units associated with their farms or ranches. While the number of animals raised has increased, the number of livestock operations has declined by 25 percent since 1992 and is expected to continue to decline over the next 10 years as "economies of scale" encourage larger size animal feeding operations (AFOs). This continued expansion and concentration of confinement-type facilities often is generating more animal waste and organic by-products than can be applied to a producer's land in an environmentally sound manner. In addition, the implementation of phosphorus-based nutrient-management standards will require more land for manure application, accentuating the challenges for AFO operators with scarce land.

The goal of the President's Clean Water Action Plan and its associated joint U.S. Environmental Protection Agency/U.S. Department of Agriculture (EPA/USDA) Unified National Strategy for Animal Feeding Operations identifies a national expectation that all AFOs will develop and be implementing comprehensive nutrient management plans (CNMPs) by 2009. The USDA-Natural Resources Conservation Service (NRCS) has estimated that 298,500 AFOs will need a CNMP to be developed and implemented in order to protect America's waters.

A CNMP is an interdependent group of conservation practices and management activities that allow a producer to achieve reasonable production goals while ensuring his/her AFO has minimal potential to adversely impact water and air quality, public health, and related natural resources around the facility and off-site. The components of a CNMP may include the following: 1) inputs to animals/internal functions (for example, animal feed, enzymes, diet supplements); 2) outputs of animals, to include animal waste and waste-water collection, handling, storage and treatment, and dead animal disposal; 3) site and/or operation inventory and evaluation along with recommended site treatment; 4) land application; 5) record keeping or maintenance of records that document nutrient and other organic by-products utilized and/or transported off-site; and 6) utilizing manure and organic by-products to provide for environmentally safe uses such as power generation, pelletization, composting, or converting to high-value products. Land application will consider nutrient budgets or balances for all potential sources of nutrients, runoff control, erosion control, leaching and deep percolation, atmospheric emissions (for example, spray aerosols, odors, dust), salts, pathogens, and other environmental concerns as identified.

Conservation practices used in a CNMP are to meet NRCS technical conservation practice standards. If NRCS does not maintain a technical standard for a CNMP component, the component is to meet the standard of another entity recognized by NRCS, such as Cooperative Extension, Land Grant Universities, State agencies, or industry. A CNMP is comprehensive to the extent that it considers nutrients from all sources. The final selection of a site-specific CNMP component is the producer's decision based on technically sound and economically feasible alternatives offered. Through voluntary participation, the extent to which the landowner/operator chooses to address the various natural-resource concerns is their decision.

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