Nutrients Available From Livestock Manure Relative To Land Use

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The U.S. Department of Agriculture in general, and the Natural Resources Conservation Service (NRCS) specifically, are required to conduct a periodic assessment of the state of the Nation's agricultural resources, commonly referenced as the Resource Conservation Assessment (RCA). These assessments vary in degree of complexity and the number of resources assessed, but generally focus on the following five resources--soil, water, plant, animal, and air.

During planning for the third RCA, the leadership of NRCS requested a comprehensive evaluation of the impacts of animal agriculture on the Nation's resources. With the rapid expansion of the poultry and swine industry into traditional locations and new locations, there was a general impression that adequate land resources for manure utilization could be a limiting factor.

This paper will describe the analysis process used to relate manure nutrient availability to the land resource as the animal population and location of production changed from 1992 to 1997. County level livestock numbers from the 1992 and 1997 Census of Agriculture were combined with nationally accepted values of manure characteristics to determine the amount of nitrogen and phosphorus available for use as nutrients in agricultural production. These nutrients were balanced against the potential uptake of nitrogen and phosphorus for agricultural production on acreage, also reported to the Census of Agriculture.

The analysis results in the identification of counties where manure nutrients meet or exceed the nutrient needs of the agricultural production in the county. This paper will conclude with a discussion of the shift in potential problem areas between 1992 and 1997 and the environmental ramifications of these shifts.

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