

Confined Animal Production and Manure Nutrients. Noel Gollehon, Margriet Caswell, Marc Ribaudo, Robert Kellogg, Charles Lander, and David Letson; Resource Economics Division, Economic Research Service, U.S. Department of Agriculture. Agriculture Information Bulletin No. 771.

Abstract

Census of agriculture data were used to estimate manure nutrient production and the capacity of cropland and pastureland to assimilate nutrients. Most farms (78 percent for nitrogen and 69 percent for phosphorus) have adequate land on which it is physically feasible to apply the manure produced onfarm at agronomic rates. (The costs of applying manure at these rates have not been assessed). Even so, manure that is produced on operations that cannot fully apply it to their own land at agronomic rates accounts for 60 percent of the Nation's manure nitrogen and 70 percent of the manure phosphorus. In these cases, most counties with farms that produce "excess" nutrients have adequate crop acres not associated with animal operations, but within the county, on which it is feasible to spread the manure at agronomic rates. However, barriers to moving manure to other farms need to be studied. About 20 percent of the Nation's onfarm excess manure nitrogen is produced in counties that have insufficient cropland for its application at agronomic rates (23 percent for phosphorus). For areas without adequate land, alternatives to local land application—such as energy production—will need to be developed.

Keywords: Manure, nutrients, manure nutrients, animal waste, confined livestock, confined animal feeding operation, CAFO, feedlot beef, dairy cows, swine, poultry, animal unit, manure nitrogen, manure phosphorus, water quality.

Acknowledgments

Robert Kellogg and Charles Lander are with the Natural Resources Conservation Service, USDA; David Letson, formerly with USDA's Economic Research Service, is with the University of Miami. This report benefited from the insightful comments of several reviewers and seminar participants, especially, Kitty Smith, Tom Christensen, Ralph Heimlich, Janet Perry, and Lee Christensen. Thanks to Vince Breneman and Chris Dicken for assisting with the maps and Stan Hoge and Charles Kendall for assistance with the data. Thanks also to Dale Simms for the excellent editorial assistance and Wynnice Pointer-Napper for the cover design, document layout, and final charts.