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CSREES Sponsored Research on hormones

- **60 projects in USDA's Current Research Information Service database were identified as hormone-related**
- **Of the 60 research projects, 16 assessed the role of hormones in aquaculture and animal reproduction**
- **44 projects investigated hormones in animal production and subsequent transport to the environment.**
- **Of the 44 projects, hormone-related research was a major component in 14 projects and a minor component in 30 projects.**

Key Research Findings

- **USDA ARS found that composting is an effective method to reduce, but not eliminate, the introduction of estradiol and testosterone into the environment**
- **Tennessee researchers comparing dairy and swine wastes concluded that swine farrowing facilities pose a greater threat as environmental estrogen pollutants.**
- **Purdue University studies determined that androgen and trenbolone and the antibiotics tylosin, monensin, and lasalocid are highly sorbed to soils, have a relatively short half-life, thus concentrations in nearby water bodies are likely to be small.**

Other Research Projects – minor focus on hormones

- Mississippi, Missouri, and Nebraska are researching hormone impacts in broiler, swine and cattle production.
- North Dakota State University is working with multi-state partners to study the fate and transport of estradiol and testosterone.
- West Virginia State University is investigating the fate of hormones during anaerobic digestion.
- Numerous other projects are investigating integrated manure management, animal production and soil flow transport processes.

Other Research Projects – minor focus on hormones

- ✓ ARS in Arkansas is investigating use of alum to decrease estrogen in runoff and forage-based livestock
- ✓ ARS in Georgia is investigating pathogen and hormone transport and researching whole farm management of agricultural effluent
- ✓ Iowa State University is investigating metal, pesticide and estrogen transport
- ✓ University of Maryland is investigating endocrine activity in poultry litter and subsequent impacts on water quality and fish and amphibian populations.

Key Research Findings (continued)

- **Maryland scientists found that substantial quantities of poultry litter-derived estradiol can be transported to surface waters via runoff and persist for weeks to months at environmentally relevant concentrations.**
- **Also, fields under no-till management practices can lose up to ten times more estradiol than fields employing conventional tillage.**