



1. Gulf Hypoxia. There has been a lot of new information announced lately regarding gulf hypoxia and the roles that the Mississippi River Basin states play in the cause. Is agriculture to blame for the hypoxia problem? If so, what action(s), if any, should the Missouri Department of Agriculture be taking?

A recent Background Paper from U.S. Geological Survey:
Agricultural Practices in 9 States Contribute Majority of Excessive Nutrients to the Northern Gulf of Mexico

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Contact Information: [Richard Alexander](#) 
U.S. Department of the Interior, U.S. Geological Survey Phone: 703-648-6869
Office of Communication [Jennifer LaVista](#) 
119 National Center Phone: 703-648-4432
Reston, VA 20192

Nine states in the Mississippi River Basin contribute the majority of nutrients to the Northern Gulf of Mexico, threatening the economic and ecological health of one of the nation's largest and most productive fisheries.

Excessive nutrients have resulted in a zone of low dissolved oxygen or hypoxia, caused by the growth of large amounts of algae. This can stress and cause death in bottom-dwelling organisms in the Gulf.

Illinois, Iowa, Indiana, Missouri, Arkansas, Kentucky, Tennessee, Ohio and Mississippi make up only one-third of the 31-state Mississippi River drainage area, but contribute more than 75 percent of nitrogen and phosphorus to the Gulf.

Corn and soybean cultivation is the largest contributor of nitrogen to the Gulf. Animal manure on pasture and rangelands and crop cultivation are the largest contributors of phosphorus. These are among the new findings in a USGS report, *Differences in Phosphorus and Nitrogen Delivery to the Gulf of Mexico from the Mississippi River Basin*, published in the journal *Environmental Science and Technology*. (The article, along with frequently asked questions, maps, and other downloadable graphics, can be accessed at http://water.usgs.gov/nawqa/sparrow/gulf_findings).

"This study is important because it reveals new details about sources of phosphorus," said Richard Alexander, USGS scientist and lead investigator. The report shows that animal manure on pasture and range lands contribute nearly as much phosphorus as cultivated crops, 37 versus 43 percent.

The study suggests that phosphorus associated with the wastes of unconfined animals is a much larger source of phosphorus in the Mississippi River Basin than previously recognized. Current animal manure management emphasizes controlling nutrients primarily from confined animal facilities.

The study reports that 66% of nitrogen originates primarily from cultivated crops, mostly corn and soybean, with animal grazing and manure contributing only about 5 percent. Atmospheric contributions also are important, accounting for 16% of nitrogen.

The USGS findings help fill important gaps in information on sources of phosphorus in the Mississippi River Basin at a time when recognition of phosphorus is expanding as an important contributor to Gulf hypoxia. The joint federal-state Gulf of Mexico Hypoxia Task Force is evaluating recommendations by the Environmental Protection Agency's Science Advisory Board to set reduction targets of at least 45 percent for both nitrogen and phosphorus in an effort to shrink the size of the "hypoxic zone" in half (to 5000 square kilometers) by 2015. States and EPA may therefore need to adopt a dual nutrient management strategy in order to reduce the size of the hypoxia zone in the Gulf.

Other new findings include:

Agricultural nonpoint sources contribute more than 70 % of the nitrogen and phosphorus delivered to the Gulf, versus only about 9 to 12 % from urban sources.

Reservoirs, particularly common in the Tennessee Valley and along the Missouri River, are very effective at removing phosphorus from watersheds in the Mississippi Basin and cause a large reduction in the amount of phosphorus reaching the Gulf. While these findings indicate that phosphorus inputs upstream of reservoirs may have limited impact on Gulf hypoxia, these inputs are known to create water-quality issues in the reservoirs themselves.

Delivery of nutrients to the Gulf is highest from watersheds in the central and eastern portions of the Mississippi River Basin that are drained by large, fast flowing rivers with very little natural removal. Nutrient reductions in the Gulf may thereby be more efficiently achieved through nutrient management in watersheds drained by large rivers.

The study used innovative geo-spatial modeling that integrates long-term monitoring data with spatially extensive geographic maps of hydrologic and watershed characteristics and contaminant sources.

"The key to predictive modeling is the continuation of critical "on-the-ground" water monitoring which provides credible, comparable and comprehensive data," said USGS Associate Director for Water, Dr. Robert Hirsch. These data can be used to verify predictions across large regions, such as the Mississippi River Basin.

Surface-water quality monitoring has declined significantly over time. The USGS network of long-term monitoring stations available for use in the USGS model has declined from about 425 to 35 stations from the early 1990s to today.

USGS continues to work closely with the EPA, U.S. Department of Agriculture, and the States to assure that monitoring and modeling provide useful information for managing nutrients in watersheds throughout the Mississippi River Basin. As the study has shown, nutrient issues are complex and therefore a multitude of management approaches are necessary to reduce the

nutrient burden flowing in the Mississippi River Basin. Some examples include, attention to the management of animal and crop production, controlling nutrient sources in close proximity to large rivers, and considering reservoir effects on phosphorus.

Additional websites that may be helpful are as follows:

<http://www.epa.gov/msbasin/taskforce/hypoxia.htm>

<http://www.umarshnc.org/>

<http://www.usgs.gov/>

Additional contacts to discuss this issue with would be:

Judy Grundler, Division Director
Plant Industries
Missouri Department of Agriculture
1616 Missouri Blvd
Jefferson City, MO 65102
573-751-5506

Bryan T. Hopkins
Watershed and Wetlands Coordinator
Missouri Department of Natural Resources
P.O. Box 176, Jefferson City
MO 65102-0176
ph# 573-526-1966

2. B5 Standard for all diesel fuel sold in Missouri. Following last year's passage of legislation requiring all gasoline in Missouri use 10% ethanol, there is a lot of discussion regarding requiring a 5% blend of biodiesel in all diesel fuel sold in Missouri. Should Missouri have a B5 standard?

The following is a summary of recently introduced legislation.

SCS/SB 759 - The act requires that all diesel fuel sold at retail in Missouri on and after April 1, 2010, shall be a biodiesel-blended fuel.

The act allows distributors to purchase unblended gasoline at the terminal for the purpose of making fuel ethanol-blended gasoline in order to comply with the fuel ethanol content requirements in current law, if the distributor can make the fuel ethanol blended gasoline at the same or lower cost of purchasing the blended fuel directly from the terminal.

If the acquisition of biodiesel-blended fuel is more expensive for a distributor than acquisition of conventional diesel fuel, the distributor is not required to acquire biodiesel-blended fuel and neither this nor the sale of conventional diesel fuel at retail will be considered a violation of the act. The purchase of conventional diesel fuel by a distributor for the purpose of making five-percent biodiesel-blended fuel is allowable under the act. Position holders, suppliers, distributors, and retailers shall provide certain sales transaction and price information to the Departments of Agriculture and Revenue upon request. Such sales and price information shall be kept confidential by the departments.

Diesel fuel used by railroads and nuclear power generation facilities are exempt from the act's provisions. The Director of the Department of Agriculture may exempt additional fuel uses from the requirements of the act. Under current law, the Governor may issue an Executive Order to waive any of the current fuel-ethanol requirements for reasons related to air quality. The act removes the air quality criteria, thereby allowing the Governor to issue an Executive Order to waive the current fuel ethanol or the act's biodiesel requirements for any reason.

In promulgating rules for the act, the Department of Agriculture shall, as much as practicable, apply to biodiesel producers the requirements of an "accredited producer" in the BQ-9000 program of the National Biodiesel Accreditation Commission.

Beginning January 1, 2010, fuel terminals in Missouri that sell diesel fuel shall sell biodiesel, conventional diesel fuel, and biodiesel-blended fuel that contains 5% biodiesel by volume, but it shall not be considered a violation for a terminal to sell biodiesel-blended fuel that contains more than 5% biodiesel by volume provided any such sale adheres to notification requirements promulgated by the Department of Agriculture.

Current law allows fuel retailers, wholesalers, distributors, and marketers to purchase fuel ethanol from any terminal, position holder, fuel ethanol producer, wholesaler, or supplier. The act allows these entities to purchase biodiesel in the same manner.

The Department of Agriculture shall develop cold temperature operability standards for biodiesel and shall enforce the standards beginning January 1, 2010.

Anyone who manufactures biodiesel that does not meet the quality standard as promulgated by the Department of Agriculture may be subject to a penalty of up to \$10,000 per violation as well as be subject to a cease and desist order.

This act is similar to HCS/SS#2/SCS/SB 204 (2007).

Websites which may be helpful.

<http://www.mosoy.org/>

<http://www.biodiesel.org/>

<http://www.mda.state.mn.us/>

Contacts which might be helpful.

Ron Hayes, Director of Fuel Quality
Missouri Department of Agriculture
573-751-2922

Adam Buckallew, Director of Public Relations
Missouri Soybean Association
Business Phone: 573-635-3819

Email: mosoy@mosoy.org

Mailing Address:

P.O. Box 104778

Jefferson City, MO 65110-4778

Amber Thurlo Pearson
National Biodiesel Board Main Office
3337A Emerald Lane
P.O. Box 104898
Jefferson City, Missouri 65110

PHONE: (573) 635-3893

Toll Free: 1-800-841-5849

FAX: (573) 635-7913

info@biodiesel.org

3. Animal Identification. Missouri ranks 2nd in the United States in the number of cattle and ranks in the top 10 in poultry and hog production. In consideration of disease management and food safety, does Missouri and/or the United States need to require a mandatory animal identification system or a voluntary animal identification system?

Please see the attached fact sheet on Traceability and Animal ID for additional background information.

Contacts:

Greg Onstott
Missouri Department of Agriculture
573-751-7766

Dr. Taylor Woods
Missouri Department of Agriculture
573-751-5610

John Kleiboeker
Executive Director
Program & Budget Planning
Producer Communications
& Industry Relations
E-mail: John@MoBeef.com
P: 573.817.0899

cattle industry.

- Today, however, less than 12% of our cattle population is vaccinated for brucellosis.

2) **Information that is maintained by many sources must be accessed quickly.**

- States, industry, and USDA maintain separate animal identification information systems.
- Current animal identification and data collection approaches typically address individual objectives, such as specific disease eradication programs, interstate commerce, breed registries and age and source verification.
- An animal can be identified multiple times yet still not be fully traceable in a disease event because separate programs use distinct herd and flock identification protocols.

3) **Animal disease traceability varies by species.**

- The availability of unique individual animal identification data that results from management, transportation, and marketing practices varies within each species sector.
- The level of vertical integration within an industry sector directly affects that industry's ability to conduct timely and efficient disease tracebacks.

Traceability - The Way Forward

USDA is releasing “A Business Plan to Advance Animal Disease Traceability,” which details recommended strategies and actions aimed to harmonize existing State/Federal regulated and voluntary animal health programs, industry-administered animal health and marketing programs, and various animal identification techniques. Specifically, this plan recognizes the following as key for achieving progress towards a comprehensive traceability infrastructure:

- 1) Prioritize species and sectors to ensure resources are applied where traceability advances are needed most.
 - Priority species (and sectors within species) to include all major food animals – cattle, swine, poultry, sheep, and goats, along with select equine sectors. Emphasis is placed on animals that move within commerce and that are commingled with animals from other premises, not on movements within premises or for local events.
- 2) Harmonize government and industry animal identification programs by creating compatible processes and applying common data standards.
 - Separate systems maintained by States, industry and USDA will be able to “speak” to each other when essential animal location and movement information is needed to respond to a disease outbreak.
 - This approach conserves time, money, and effort by drawing from systems and data already in place.
 - The approach also maintains the flexibility required by individual States, industry associations, and other entities to use animal identification for multiple purposes.
- 3) Standardize Data Elements of Disease Programs to Ensure Compatibility.

- By standardizing data elements in existing disease programs, USDA will greatly enhance disease tracing and emergency response capabilities.
- 4) Integrate automated data capture technology with animal disease programs.
 - By using NAIS-compliant identification devices that support automated data capture and integrating handheld computers/readers to replace paper-based forms, animal health officials will increase the volume and quality of the data, minimize errors and speed data entry into searchable databases.
 - 5) Partner with States, Tribes, and Territories to facilitate the development of each State's animal disease traceability infrastructure.
 - State animal health officials will administer localized plans reflecting animal health priorities in their region.
 - 6) Collaborate with industry organizations and animal health officials to accelerate the adoption of practices that will advance traceability.
 - In partnership with USDA, non-profit industry organizations will promote premises registration within various species groups.
 - Accredited veterinarians, in collaboration with USDA, will adopt NAIS data standards in everyday animal health management and disease program activities at the producer level.
 - 7) Establish performance standards for ID devices and evaluate emerging technology with emphasis on systems that can operate at the "speed of commerce."

USDA's Commitment-

USDA is committed to improving and increasing the United States' national animal disease tracing capabilities. Based upon recent animal disease detections, both here and abroad, it is clear that USDA must be able to respond as quickly as possible to contain diseases and minimize losses. By building a practical, flexible, modern animal identification and disease tracing system, USDA will ensure that U.S. livestock remains the healthiest in the world.

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