

GUEST COMMENTARY

Crop production, environmental protection both achievable

By **MARK DAVID**
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In the Midwest, corn prices are so high they're creating a new gold rush. Farm acreage is selling at record prices in Iowa, with golf courses and housing developments being converted to fields. Here in Illinois, many producers are investing corn profits in new tile drainage systems that will increase their yields even more.

That may sound like good news for Corn Belt farmers, but it's a short-term gain. Those drainage systems put much of the fertilizer runoff from farms on a fast track to the Gulf of Mexico, where it feeds an

algae bloom the size of Connecticut that consumes available oxygen on the bottom layer of the ocean, suffocating shellfish and forcing fish and shrimp to flee. It hurts the Corn Belt locally too. Iowa, Indiana and Wisconsin are just some of the states battling algae blooms in their lakes and estuaries, fed by excess nutrients and spurred by warmer summers, that are harming fisheries, closing down swimming holes and hurting tourism.

Nitrate from fertilizer can also leak into local drinking water supplies, posing health risks to infants and adults. For example, the cities of Danville and Decatur had to

invest in costly treatment to remove nitrate after their supplies exceeded safe drinking water standards for decades.

Decatur's system alone cost about \$8 million, with additional annual operating expenses of \$200,000 to \$400,000.

When all of these impacts are viewed on a national scale, it's not surprising that the Environmental Protection Agency has warned that pollution from fertilizer runoff has the potential to become one of the costliest and most challenging environmental problems facing the U.S.

Solutions are possible. The U.S. energy and transportation sectors

also release nitrogen pollution, but unlike agriculture, those emissions are decreasing. That success took political will, created after we documented and understood the heart and lung disease costs to taxpayers of NOx from smokestacks and tailpipes. It also took the technical know-how to reduce emissions, and regulatory and financial incentives to motivate industry.

We need similar support to decrease agricultural emissions. The good news is we already have the tools and expertise. In our new report, "Excess Nitrogen in the U.S. Environment: Trends, Risks, and Solutions," we show that applying

current practices and technologies can reduce nitrogen pollution from farm and livestock operations by 30 to 50 percent. They include managing fertilizer timing, optimizing fertilizer use, and implementing wetlands, wood chip trenches, winter cover crops and streamside vegetation to soak up excess nitrogen.

Unfortunately, these practices are not widespread because our current agricultural and economic systems don't reward growers for deploying the best environmental stewardship.

The USDA recently issued voluntary guidelines that urge producers

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to follow these and other conservation practices. This is a welcome step, but in order to see real change we need a national mandate that provides a combination of regulations and funding incentives needed to seriously decrease agricultural pollution.

Congress has already begun debating the 2012 Farm Bill. It should expand — not cut, as it's threatening to do — funding to the USDA's Natural Resources Conservation Service that houses programs like the Environmental Quality

Incentives Program that support farmers in reducing nitrogen losses from their fields and livestock operations. And it should truly invest in training and deploying agricultural extension agents who can support farmers in choosing nutrient management practices that fit their operations.

If society values safe drinking water, cleaner rivers and lakes, and improved fisheries in the Gulf of Mexico, it's time to provide farmers with incentives to optimize fertilizer use and adopt additional practices that conserve soil and fertilizer.

We need affordable, high-quality food, but we also need to use the knowledge and

experience of agricultural science in partnership with farmers to produce food with minimal impacts on drinking water and environmental quality. That would be a smart investment for 2012 and decades to come.

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The report can be viewed at http://www.esa.org/science_resources/issues/FileEnglish/issuesinecology15.pdf.