Next Generation Strategies for Managing Edge of Field Nutrient Losses
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Artificial drainage is integral to crop productivity.
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Artificial drainage is integral to new challenges.
The US Midwest has a long history of drainage because it improves crop growth and trafficability.
Tile drainage changes the natural hydrology and is a pathway for nutrients to move from our fields.

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Ten Ways to reduce nitrogen loads from drained cropland in the Midwest

http://go.aces.illinois.edu/TenWays
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Woodchip bioreactors

Drainage area treated: 50 ac
Dimensions: 100 ft x 12 ft x 3 ft

Credit: Iowa Soybean Association

Woodchip bioreactors

Drainage area treated: ≈7 ac
Dimensions: 32 ft x 6 ft x 3 ft

Credit: Illinois Farm Bureau, Illinois Land Improvement Contractors Association, Illinois NRCS

Woodchip bioreactors

Drainage area treated: ≈50 ac
Dimensions: 44 ft x 11 ft x 4 ft

Credit: Illinois Farm Bureau and private landowner

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How does it reduce N loss in drainage? Additional carbon "super-powers" the natural process of denitrification.

What is it? Woodchip-filled trench

Rules of thumb from the past 10 years

- N removal effectiveness: 25-45%
- 10-98%
- Bioreactor life: 10 years
- 7-15 years
- Bioreactor cost: $10,000 for about 50 acres
- $3,000 to $25,000

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