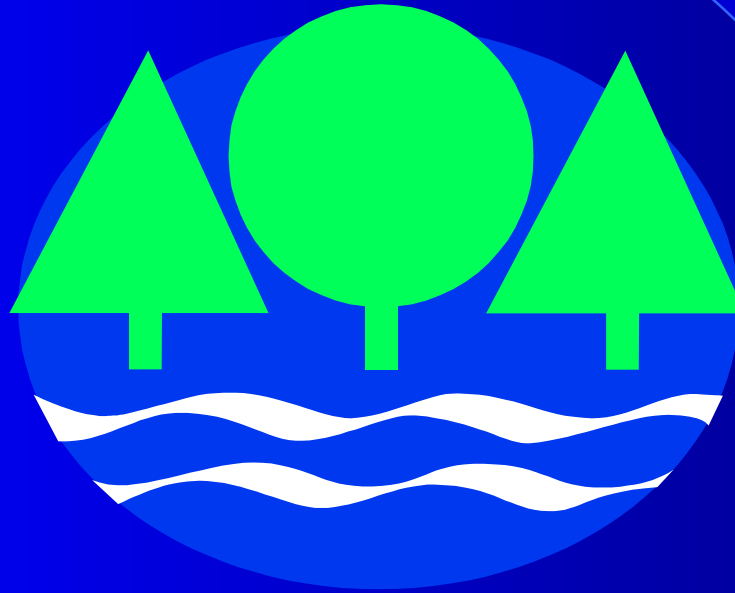


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Feedlot Program



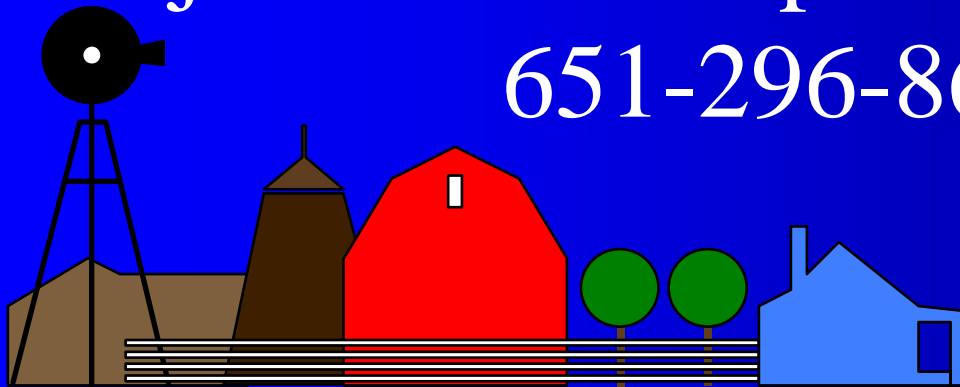
Environmental Benefits of Anaerobic Digestion

Jim Sullivan

Project Leader

jim.sullivan@pca.state.mn.us

651-296-8632



Environmental Benefits of Anaerobic Digestion

- Overview of Digestion
- Energy Balance and Distribution
- Reduction of Fossil Fuels and Greenhouse Emissions
- Improved Waste Management
- Odor Reduction
- Reduction of Weeds and Disease
- Financial Benefits



Digestion Overview

Pretty much know it by
now.....

Energy Balance and Distribution

Consumes less energy per delivered unit of electricity

Transmission loss of electricity is significantly reduced (conventional loss is 7%).

Fossil Fuels and Greenhouse Gas

- CO₂ produced from AD is from “short cycle” carbon.
- AD contains methane emissions
- Use of digestate as a contribution to fertiliser offsets fossil fuel consumption in the production of synthetic fertiliser.
- Decreased synthetic fertilizer use also reduces N₂O emissions

Improved Waste Management

- Waste easier to manage
- Reduction in BOD
- Reduction in VFA (Important for Swine Waste)
- Reduced handling cost - solids separated and sold/used (“fibre” replaces strategic peat reserves)
- “Better” Crop Response

Odor Reduction



- Up to 80% reduction in odor based on data from various sources
- Beats litigation!
(Retainers on this issue vary between \$10K and \$50K)

Weeds and Seeds

- Partial to complete destruction of weed seeds and various disease
- Need to be careful with digester inputs (i.e. no antibiotics or other chemicals)

Financial Benefits

- Byproducts
 - Liquids (crop response)
 - “Fibre” (Solids)
- Electricity
 - depending on Co-op - may be able to sell power
- Thermal Recovery
 - Offset heating costs

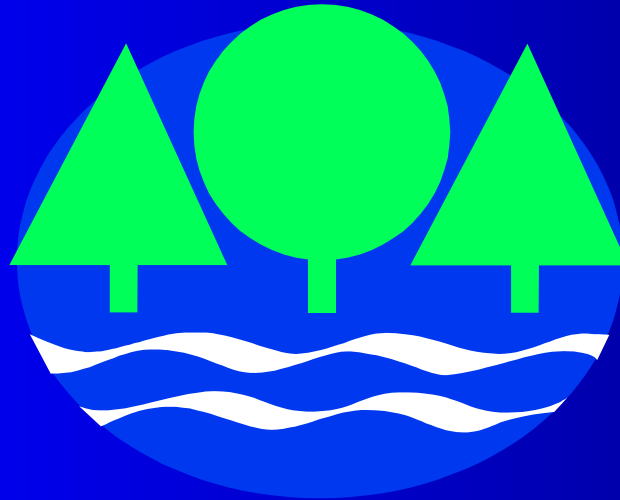
Regulatory Benefits

- Considered a mitigation measure under the environmental review process
- NPDES Permits - Case by Case Basis (General v. Individual)

Conclusions

- Substantial and quantifiable environmental benefits are achievable with AD
- Design and Construction Costs can be offset by benefits with the right system
- Still an emerging technology despite nearly 50 years of experience
- Public Perception is a major benefit!

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1-800-657-3864

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