

Alternatives for Food Processor's Wastewater Treatment

By Associate Professor, Steve Safferman

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Food processors represent a major state industry that is ripe for expansion. To maintain and expand upon current industry production levels environmental protection practices will need to be instituted as evident by recent regulatory actions by MDEQ. This will result in substantial capital expenditures and increased operating costs if conventional treatment practices are prescribed. Alternative wastewater treatment techniques and safe soil assimilation capacities must be developed. The Department of Biosystems and Agricultural Engineering is currently conducting the Green Funded Project "Alternative for Food Processor's Wastewater." Steven Safferman is the Principal Investigator, Steve Miller is the Co-Principal Investigator and Erin Henderson and Isis Fernandez-Torres are graduate research assistants.

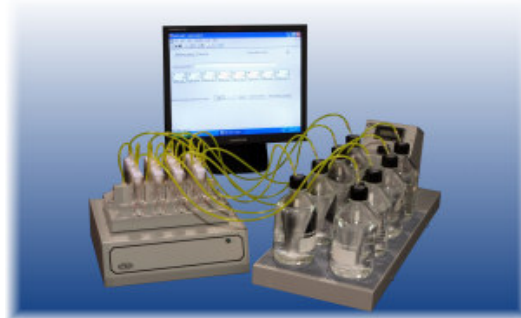


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This research has four specific objectives, as listed below.

- 1) Categorize Michigan food processors to establish 3 to 5 typical categories that can be studied in detail. These categories are needed for the efficient realization of the remaining project objectives and, ultimately, for the establishment of coherent guidance.
- 2) Research the economics of digesting organic materials in food processing wastewater for the production of commercial grade methane. The purity and concentration of the organic material may be very amenable for economical energy recovery and off set the capital cost of the system and its operation.
- 3) Investigate existing research and criteria on the assimilation of organic materials in soils and consequently, the amount of pretreatment required before discharge to soils.

Soil treatment can be very effective if the organic and hydraulic loadings do not exceed the soil's capacity to assimilate the waste materials and should be considered as an intricate part of the treatment process provided design criteria can be established.

4) Develop in plant water use and waste production reduction practices and prepare guidance for each category established in objective 1. Because of the very inexpensive cost of water and wastewater disposal in the state, water conservation has not been a priority yet it offers the potential to significantly reduce cost and the quantity of wastewater requiring treatment.

To date, the team visited 6 food processors and expects to have rough drafts of products relating to each of the objectives by early January 2007. The work will culminate with a guidance document specific for Michigan food processors, expected in the fall of 2007. The [project web site](#) provides details concerning this project .

For further details contact Steven Safferman (517-432-0812, safferma@msu.edu).