

Water-Related Health and Environmental Problems from Using Miscanthus In the Proposed Jasper, Indiana Biomass Plant

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Abstract

Twisted Oak Corporation (TOC) proposes to convert the Jasper coal plant to natural gas and biomass (using *Miscanthus giganteus*). Its proposal, however, is scientifically and ethically indefensible, given its failure to assess hydrology-related human-health and environmental harms that would arise from local growing and use of *Miscanthus* for the proposed biomass facility. Although TOC presents no analysis of hydrological and medical harms to the local community from growing *Miscanthus*, this analysis shows these harms are substantial---and scientifically indefensible for at least 3 reasons.

(1) Growing the needed *Miscanthus* requires 300 annual tons of carcinogenic fertilizers likely to cause local groundwater and drinking water nitrate/nitrogen pollution worse than US Environmental Protection Agency maximum-allowed contaminant levels. Even below these levels, nitrates/ nitrogen reduces human fertility; increases stomach, esophagus, and thyroid cancers; and, especially in infants, increases methemoglobinemia. Citizens would need to spend up to \$22,000, per home, for water-system protection from this nitrate/nitrogen pollution

(2) Instead of safer available herbicides, TOC proposes to use lethal atrazine, completely banned in 27 major nations. Even below US-allowed levels, atrazine increases ADHD, autism, and other neurodevelopmental harms, especially in children---and also causes endocrine disruption of human sexual development, feminization of males, and sterility.

(3) Southern Indiana cannot economically grow needed *Miscanthus*. Its water needs are nearly 20 percent more than local rainfall---and 133 percent of what corn, soybeans, etc. require. With 8-foot-plus roots, *Miscanthus* will cause local groundwater depletion and economic harm.

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K. S. Shrader-Frechette specializes in human-health risk assessment and has advised industries and governments all over the world. Author of 16 books and about 400 technical articles, she is a past president of the Risk Assessment and Policy Association. Her work has been translated into 13 languages, and she has served on many US National Academy of Sciences Boards and Panels. The US National Science Foundation has funded her research for three decades. Besides her Ph.D., she also has done post-docs in both economics and hydrology/hydrogeology. Among many other awards, *Catholic Digest* recently named her one of 13 "Heroes for the US and the World" for the pro-bono scientific work that she and her Notre Dame students do, to help protect poor and minority communities from disproportionate pollution. Her website is at www.nd.edu/~kshrader