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**Shelterbelts and Livestock Odor Mitigation: a Socio-economic Assessment
of Pork Producers and Consumers.**

Principal Investigator: Dr. Joe P. Colletti, Natural Resource Economist,
Iowa State University

Co-PIs: Dr. Mark Honeyman, Animal Scientist, ISU
Dr. Wendy Powers-Shilling, Animal Scientist, ISU
Dr. John Tyndall, Natural Resource Economics, ISU

Project Summary

The US pork production is expanding, especially in the Midwest and into foreign markets. With expected economic benefits from expansion come potential environmental and social costs from odor. Scientific evidence suggests that shelterbelts – living tree barriers – can be cost-effective, biologically active buffers that reduce odor, and complement other odor control strategies used by producers. Consumers seem to accept and perhaps desire shelterbelts as part of the suite of best management practices to reduce odor. We propose to examine producer attitudes regarding market-based incentives for odor control; identify producer and consumer values regarding odor management involving the use of shelterbelts; provide bio-physical evidence of the ability of shelterbelts to reduce odor; and to assist producers and consumers on the use of market-based incentives and socially preferred “environmentally-friendly” management strategies related to pork production and the environment. US pork producers are very interested in protecting rural environments, yet they face increasing production costs, limited information regarding consumer preferences towards environmental management, and few “natural” odor control options. Market mechanisms that allow price premiums for environmentally friendly pork meat to flow back to producers can reduce financial constraints faced by producers and directly link producers to consumers through joint socially-valuable efforts. The results of this research will support cooperative approaches to solving odor problems that include natural odor control strategies, and help to sustain two vitally important parts of agriculture – pork production and rural communities.

Our long-term goal is to expand the market role in providing real economic incentives to producers for livestock that are produced with much reduced odor problems and to expand the suite of management strategies to include “natural biological buffers.”

The **objectives of this research** are 1) to assess (quantitatively and qualitatively) the types of market mechanisms that are preferred by pork producers for capturing the measurable value premiums paid by consumers for pork meat produced with higher environment standards with respect to odor, and 2) to assess (quantitatively and

qualitatively) production management strategies to reduce/control odor that involve the use of shelterbelts. This is all part of a three year project.

The **methods** used to pursue these above stated objectives are survey oriented. During this first research year we performed, with assistance from the Statistical Lab here at Iowa State, four focus groups (involving 8 – 12 people each) within the state of Iowa. Two of the focus groups conducted were pork producer oriented, stratified across production size with a mix of production technology (i.e. confinement, hoop house, to pasture raised). The remaining two focus groups were pork consumer oriented. Also, pilot surveys – personal interviews will be conducted by phone in North Carolina and Washington (state) with both pork producers and pork consumers in September. All this is being done both for exploratory and survey calibration reasons.

During the second research year there will be a random selection screening telephone survey of 350 pork producers mixed in Iowa, North Carolina, and Washington state to elicit responses regarding market mechanisms, which allow for the capture of a price premium by producers for environmentally produced pork meat. During year three of our research there will be a random selection screening telephone survey of 350 pork producers to elicit responses related to modification of odor management strategies that include the use of “natural” live plant-based bio-filters (e.g. shelterbelts). During this year we will also be performing a random digit dialing survey of 350 pork consumers to assess differences among consumers regarding perceptions, preferences, and willingness to consume/pay for livestock management that includes shelterbelts and reduced off-farm environmental effects.