

## ENVIRONMENT

**Title:** Development of a user-friendly database and decision tree for selecting air quality BMPs – **NPB# 04-169**

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### I. Stated objectives from the original proposal –

The final web based tool can be found at

<http://www.extension.iastate.edu/airquality/practices/homepage.html>

1. Collate research conducted on best management practices for minimizing air quality concerns that has been published from European, Asian and American research.
2. Assemble that information into a user-friendly database that is searchable based on effectiveness and economics and highlights advantages and disadvantages of each practice.
3. Develop an online, interactive decision tree that will serve producers and agencies, providing recommended practices that are based on effectiveness, economics, and current management.

### II. Progress towards meeting the objectives

1. Collate research conducted on best management practices for minimizing air quality concerns that has been published from European, Asian and American research.
  - Numerous U.S. based research articles and fact sheets have been identified and linked to the appropriate decision tree.
  - Only those articles from Universities outside the U.S. have been included if they have been properly translated and provide information that will be useful to U.S. swine producers.

*These research results were submitted in fulfillment of checkoff funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer reviewed*

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- The list of articles to this point includes active direct links to individual articles. A discussion of listing those article that have copy right issues associated with them has occurred and the decision to list them with an appropriate reference and not a direct link has been made. Most of those articles are not yet listed but were used to compile the data depicted in the decision tree.
  - This information has been expanded and updated to address hydrogen sulfide, ammonia, particulates, and odor.
2. Assemble that information into a user-friendly database that is searchable based on effectiveness and economics and highlights advantages and disadvantages of each practice.
- The database developed contains a listing of articles found under each of substance to be controlled (ammonia, hydrogen sulfide, and odor)
  - To date the listing is most complete for the control items found under animal housing, manure storage, and land application for both a liquid and dry manure systems for the control of hydrogen sulfide.
  - In discussions with Pork Board staff (Tengman and Lummus) the “true” database largely only serves the academic world. As the current list form of database found under each control measure is a much better approach for pork producers.
3. Develop an online, interactive decision tree that will serve producers and agencies, providing recommended practices that are based on effectiveness, economics, and current management.
- The decision tree was demonstrated to Ms. Carrie Tengman and Mr. Jim Lummus of the National Pork Board on March 1, 2005 for their review and initial critical assessment.
  - The decision tree was demonstrated and reviewed by an expert panel of researchers, extension workers, and producers on January 25, 2006 for their review and initial critical assessment.
  - The decision tree was demonstrated to the NPB Environmental committee on Feb 17, 2006.

#### IV. Status of project in regards to stated timeline

Again, the web site can be found at:

<http://www.extension.iastate.edu/airquality/practices/homepage.html>

The changes made to the AMPAT (flowchart) NPB project based on the critical review that occurred in January, 2006 include:

- Pros/Cons have been identified and added to each of the practices.
- The navigation bar has been updated.
- Links to pdf files have been formatted to open in a separate browser to facilitate downloading time issues.

- The pages have been restructured to be more printer friendly, but since every printers is different we can't guarantee that this will meet everyone needs.
- More resources have been included as they have been identified.
- The homepage now includes introductory text.

These are the major changes to the site based on our discussions and that of the reviewers. It is the authors' opinion this site is now quite functional and ready for public notice. We have a list of things where the web version of the flowchart, the print version of the flowchart, and the printed supporting materials differ. However that is to be expected and can readily be modified the next time the printed materials are updated. This will continue to be a work in progress. As appropriate new materials are identified and current materials are updated the type of changes previously mentioned can take place.

Some things that were not addressed include:

- Vendor's pages were not added that some thought would be useful during the review process. Mr. Allan Stokes was concerned that it would look like NPB was promoting some materials and not others. He was also worried about how to keep that page current.
- Although we had a discussion about the multi-level of structure to actually get to a practice, the structure was left as is, so you can either work you way through the questions at the top of each gas/emission or you can open that page and click directly on the practice of your choice.
- We have been tracking the number of hits to the website. Without any advertising or publicity, the website is being found by users. In the last month, this site had had the 2<sup>nd</sup> highest number of hits with in the ISU Air Quality area.

#### V. Modifications of project from the original proposal

- Determination that there was limited if any need for a formal database that was searchable. Hence, the formal database will not be pursued. No database in a CD-ROM format will be developed.