

Development of a National Air Quality Self Assessment Tool

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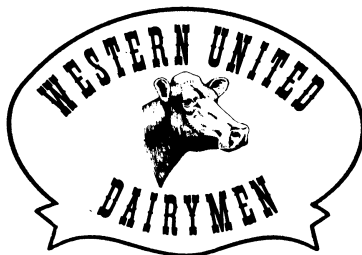
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Background

- Livestock producers are under increasing pressure to mitigate air emissions, whether it is for regulatory purposes or as part of a 'good neighbor' plan.
- Mitigation strategies are expensive to implement so care must be taken in identifying if and where strategies are most useful.
- Because of management and structural variability in operations, these are site specific decisions.

Funding

- USDA-NRCS Conservation Innovation Grant, \$443,000 (\$385,000 operating)
 - A 1:1 match is required



Partners

Cash Match Sources

C.E. Meadows Endowment, Michigan State University \$10,000

Colorado Livestock Association \$40,000

Iowa Turkey Federation \$20,000

Iowa Pork Producers \$20,000

Iowa Pork Industry Center \$20,000

Iowa State University Experiment Station \$10,000

Michigan Milk Producers Association \$20,000

Michigan Pork Producers Association \$20,000

Michigan State University Extension \$10,000

National Pork Board \$38,000

University of California, Davis \$5,000

University of Georgia Department of Poultry Science \$12,000

University of Maryland Department of Animal and Avian Sciences \$5,000

Nebraska Environmental Trust \$20,000

Western United Dairymen \$20,000

Total Cash Match 270,000

University partners

- Colorado State University
- Iowa State University
- Michigan State University
- Oregon State University
- Penn State University
- Purdue University
- Texas A&M University
- University of California, Davis
- University of Georgia
- University of Maryland
- University of Minnesota
- University of Nebraska



Project components

- 1) Development of an on-farm air quality assessment tool for beef feedlot, dairy, swine, laying hen, turkey and broiler chicken operations that is designed to evaluate where mitigation strategies will have the greatest impact;
- 2) Field testing of the tool with NRCS staff, following in-service training on the tool; and
- 3) Refinement of the national tool as well as regionalization of the national tool where needed. As part of this effort resource materials will be developed as needed and as identified by NRCS staff.

Criteria

- Easy to use by a producer or advisor
- Can not be time consuming
- Site-specific
- Not easily used as a regulatory standard
- Accessible

Result

- Initially, we threw everything out for consideration
- 20Q became the model
 - 2004 New Toy of the Year
- Finally, we streamlined the process to hit the highest impact areas

Result

- Field tested in summer 2008
 - Approximately 1 hour per site
- Now in the process of programming
- Will re-test in the field in 2009

Product

- Online availability
- Tailored to single-specie operations
 - Can run multiple times for multiple species
- Addresses emissions of odor, ammonia, hydrogen sulfide, particulates, greenhouse gases, volatile organic compounds
- Targets emissions from animals and housing, manure storage and handling, feed and water, mortality management, land application, and public perception issues

Product

- Not an emissions estimator!!!
- Questions are based on how the previous question was answered (site-specific)
- Scores are as a percent of what the best possible management would produce given the set of physical conditions present
 - A management score, not a facility score
 - Scores can't be compared across sites

Timeline

- Field test a beta-version of the online tool in summer 2009 (may only be for swine)
- Refine questions and scoring
- Finalize development
- Anticipate public availability in summer 2010
- Some issues yet to be resolved
 - Saving data

Feedback

- We welcome input into the tool and/or the process
- Opportunities to field test, join the project team