

NAQSAT Fact Sheet

What is NAQSAT?

The National Air Quality Site Assessment Tool (NAQSAT) was developed for livestock producers, their advisors, and conservation planners to identify opportunities for addressing air emissions from livestock and poultry operations. It is intended to provide assistance to livestock and poultry producers in determining the areas in their operations where there are opportunities to make changes that result in reduced air emissions. NAQSAT is based on the most accurate, credible data currently available regarding mitigation strategies for emissions of ammonia, methane, volatile organic compounds, hydrogen sulfide, particulates, odor, and nitrous oxide from livestock and poultry operations.

Who developed NAQSAT?

NAQSAT was developed with funding from two Conservation Innovation Grants (CIGs) led by Michigan State University and Colorado State University with representation from leading animal air quality experts at those schools, Iowa 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, and University of Nebraska. Industry partners include Colorado Livestock Association, Iowa Turkey Federation, Iowa Pork Producers Association, Iowa Pork Industry Center, Michigan Milk Producers Association, Michigan Pork Producers Association, National Pork Board, Nebraska Environmental Trust, and Western United Dairymen.

How will NRCS use NAQSAT?

When providing conservation technical assistance to a livestock or poultry producer and/or when a livestock or poultry producer has requested EQIP financial or technical assistance, NAQSAT shall be used as part of the process to determine potential air quality resource concerns at the livestock or poultry operation. A baseline NAQSAT report (i.e., representing the current management of the operation) shall be provided to NRCS by the producer or a Technical Service Provider (TSP), or prepared by the conservation planner. The conservation planner shall then use the information identified by the baseline NAQSAT report, in conjunction with other pertinent data for the livestock or poultry operation, to identify any potential air quality resource concerns at the operation. If an air quality resource concern is identified for the operation, the conservation planner, producer, or a TSP shall identify potential mitigation options to address that concern and prepare an updated NAQSAT report representing the management of the operation after implementing the potential mitigation options. This process may be iterative until a mitigation alternative is identified that addresses the air quality resource concern and does not create or worsen an additional resource concern.

How do we get started?

NAQSAT can be accessed free of charge at <http://naqsat.tamu.edu>. To begin, the user should select the appropriate species at the livestock or poultry operation (NOTE: If multiple species are present at the operation, a NAQSAT report should be prepared for each species).

National Air Quality Site Assessment Tool

Select a species to begin:

Swine	Broiler Chickens
Dairy	Laying Hens
Beef	Turkeys
Horse	

NRCS

See a video about the tool or read the brochure.

Purpose: The National Air Quality Site Assessment Tool (NAQSAT) has been developed for the voluntary use of livestock producers and their advisors or consultants. It is intended to provide assistance to livestock and poultry producers in determining the areas in their operations where there are opportunities to make changes that result in reduced air emissions. Air emissions research from livestock production systems is increasing every year. NAQSAT is based on the most accurate, credible data currently available regarding mitigation strategies for air emissions of ammonia, methane, volatile organic compounds, hydrogen sulfide, particulates, and odor.

NAQSAT was designed to provide information and education, only. It is not intended to provide emissions data and/or regulatory guidance. All users receive a report of priority areas where improvements can be made, regardless of the amount of emissions produced by the facility. These priorities are not a reflection of risk, but rather a relative evaluation of current

Scores for each emission are generated upon online completion of NAQSAT. Scores reflect the degree to which an operation has incorporated all of the possible practices needed that would effectively minimize air emissions from the facility. Trade-offs may exist within a housing type that all categories of emissions cannot effectively be minimized. The tool considers the impact of diet, housing management, manure handling, management, transport, land application of manure, neighbor relations, and internal and nearby road management practices. Once areas where changes could be made are identified, resources to help implement changes are identified for the user. A user can run NAQSAT a second time with a proposed change included to determine the impact a change would have on emissions. Comparing results from multiple runs of the program may highlight unintended consequences where a mitigation measure to reduce one constituent may inadvertently increase one or

Once the species is selected, the user will then answer the specific questions, as applicable, under each of the data categories (e.g., Animals and Housing, Feed and Water, etc.).

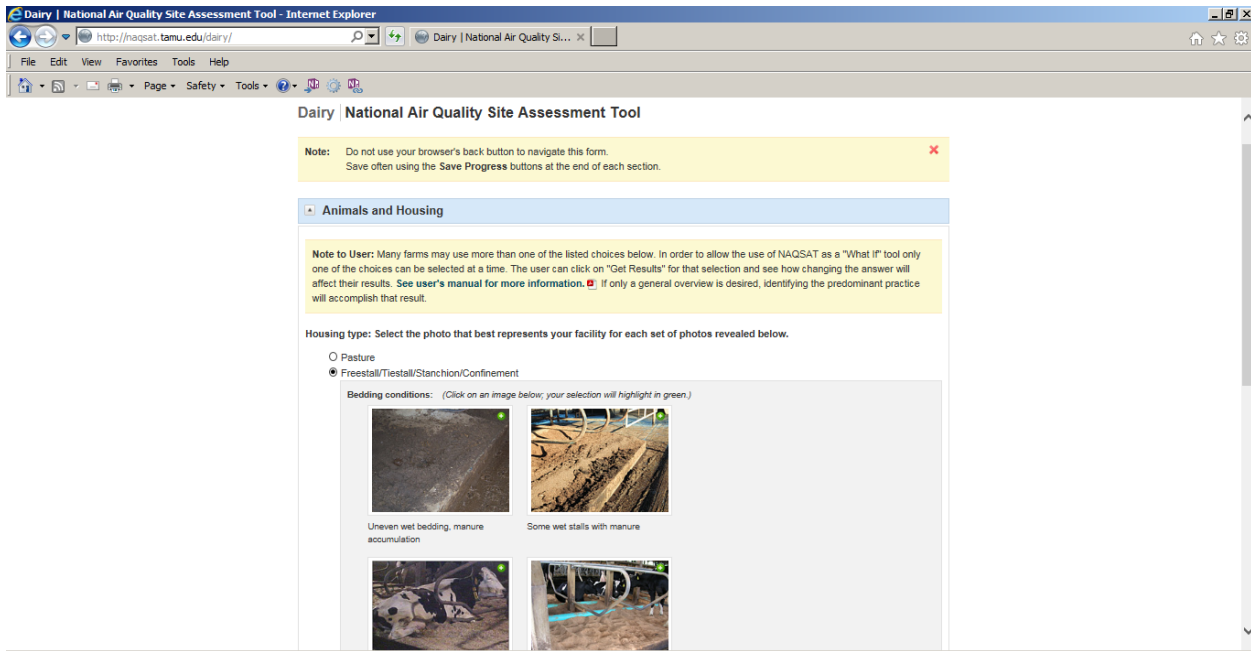
Dairy | National Air Quality Site Assessment Tool

Note: Do not use your browser's back button to navigate this form. Save often using the Save Progress buttons at the end of each section.

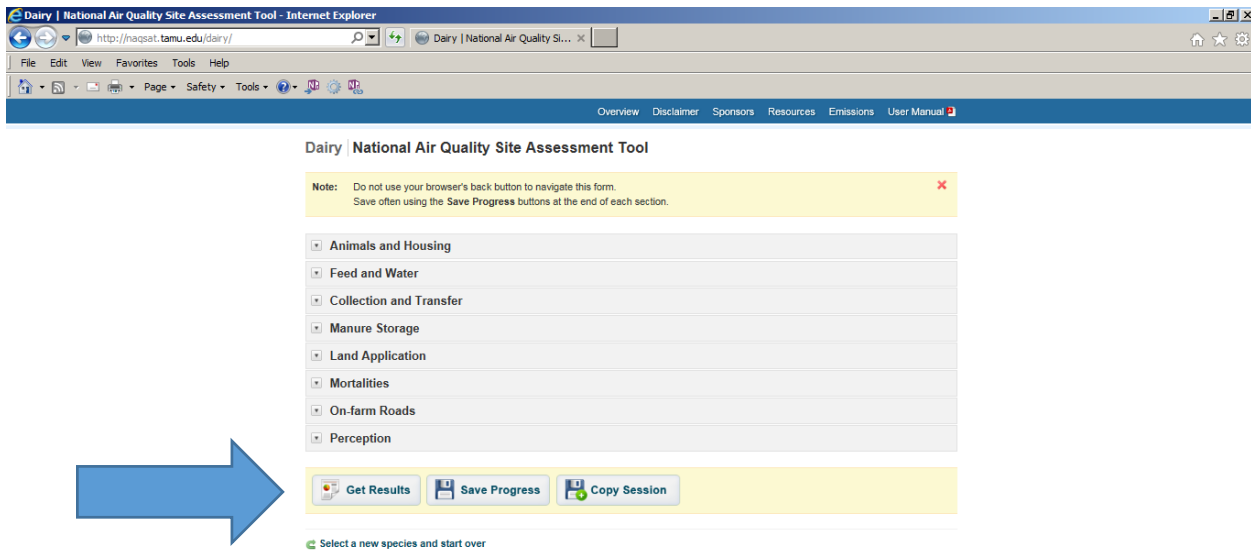
- Animals and Housing
- Feed and Water
- Collection and Transfer
- Manure Storage
- Land Application
- Mortalities
- On-farm Roads
- Perception

Get Results Save Progress Copy Session

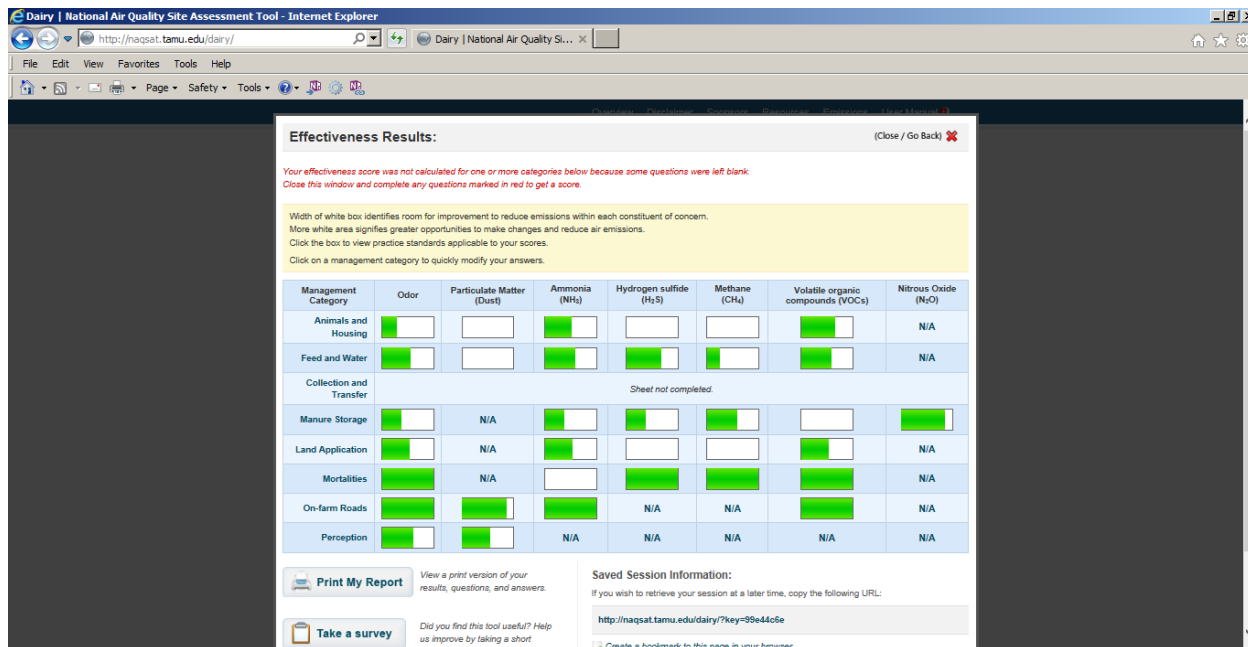
Select a new species and start over



Upon completion of the on-line tool, the user will click on the “Get Results” button at the bottom of the page to prepare and view the report.



This report shows a series of bars that provide a non-quantitative score for each category and air contaminant evaluated. For example, a bar that is predominately green for odor from Animals and Housing indicates that a producer is employing a relatively high degree of management and incorporating most of the best practices currently available for controlling odor for the Animals and Housing component of the operation. A mostly white bar indicates that there are additional measures or improvements in management that the producer should consider.



Keep in mind that the scores (i.e., the amount of green in a bar) reflect the degree to which an operation has incorporated all of the possible practices needed that would effectively minimize air emissions from the facility. Trade-offs may exist such that all categories of emissions cannot effectively be minimized. Because each livestock or poultry operation and its infrastructure is unique, the reported scores cannot be generalized to compare one operation to another. Rather, NAQSAT is designed to provide a score for the current management of an operation relative to the best possible management of that particular operation. Data categories receiving low scores will generally present more low-hanging fruit opportunities.

Additionally, scores for each data category (e.g., Animals and Housing, Feed and Water, etc.) are not weighted for their relative importance to the overall emissions from the operation. For example, a mostly white bar for ammonia for one category may not necessarily represent an air quality resource concern because of the relatively small contribution of total facility ammonia emissions from that category.

After evaluation of the baseline scenario for the operation, the conservation planner can determine whether an air quality resource concern exists and, if so, identify potential mitigation practices. There is currently some limited capability in NAQSAT to help identify potential mitigation options; however, the user shall utilize all available information for developing an acceptable plan for mitigating the air quality resource concern. Once potential alternatives are developed, NAQSAT can be used further to evaluate the effects of changing practices or implementing management changes on the scores for each alternative. With NAQSAT, when a practice in one management area is implemented or improved, the scores for that area are adjusted. Changing a practice in one part of the farm may impact emissions from another source within the farm. Also, changing a practice to reduce emission of one air contaminant may actually increase the emission of another air contaminant. Users should consider how these changes occur and recognize the importance of each air contaminant in relation to the air quality resource concerns at the particular operation. Comparing results from multiple runs of the program may also highlight unintended consequences of a particular mitigation alternative.

Who can I contact for more information?

For additional information, contact Greg Zwicke, Air Quality Engineer, National Air Quality and Atmospheric Change Technology Development Team, by telephone at (970) 295-5621 or by e-mail at greg.zwicke@ftc.usda.gov.