National Air Quality Site Assessment Tool

NAQSAT

Background

- Livestock producers are under increasing pressure to mitigate air emissions:
- Mitigation strategies are expensive to implement
  - Identify opportunity for greatest impact
  - Select correct management action to control emission of concern
- Because of management and structural variability in operations, these are site specific decisions.
Project components

Development of an on-farm air quality assessment tool designed to evaluate where mitigation strategies will have the greatest impact.

Goals

- Online availability (free!)
  - http://naqsat.tamu.edu/
- Farmer friendly
- Site specific
- Must complement currently available tools
  - Iowa State “Air Management Practices Assessment Tool”\(^1\)
Funding

- USDA-NRCS Conservation Innovation Grant and partners

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
Note to User: Many items may use more than one of the listed choices below. In order to allow the use of NACCSA as a "What if" tool only one of the choices can be selected at a time. The user can click on "Get Results" for that selection and see how changing the answer will affect their results. If only a general overview is desired, identifying the predominant practice will accomplish that result.

Housing type: Select the photo that best represents your facility for each set of photos revealed below.

- Pasture
- Freestall/Tea stall/Stanchion/Containment

Bedding conditions: (Click on an image below your selection will highlight in green.)

- Percentage of floor surface covered:
  - Up to 20%
  - 26 to 50%
  - >50%
How well current management and technology are working.

Room for improvement

Save progress

- Confined partial slat
- Open front
- Hoop or deep-bedded

Animal cleanliness - which best depicts typical animal appearance? (Click on an image below; your selection will highlight in green)
### Effectiveness Results:

### Site: National Air Quality Site Assessment Tool

#### Collection and Transfer

- **Animals and Handling**
  - Water: Sufficient
  - Feed and Water: Sufficient
  - Collected and Transported: Sufficient
  - Smoke: No
  - Testing: Incomplete

#### Animal Housing

- **Pen and Water**
  - Sufficient

#### Fecal and Urine

- Sufficient

#### Methane

- Sufficient

#### Total Organic Compounds (SOC)

- Sufficient

#### Additional Notes

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*Note: Good use of screen space. Data is clear and easy to read.*
What it doesn’t do

- Not an emissions estimator!!!
- Not easily used as a regulatory standard
  - Results will not be quantitative
- Scores not comparable across sites
- No overall score is provided
- Tradeoffs will be evident when different scenarios are run
What it can do

- Scores are as a percent of what the best possible management would produce given the set of physical conditions present.
- Help producers assess current situation
  - Provide satisfaction
- Help producers in future
  - Direct management
  - Direct capital improvements

management + technology = score

not a facility score

Thank you

Background photos credit:
Ben Darling, MSU