Deep-Pit Swine Manure Foaming

Causes

Mitigation strategies

Background

- 2006
  - Blue flames moving across surface
- Fall 2009
  - Flash fires
  - Building explosions

Foam
Foam destruction

Task force

- Nine states
  - Upper Midwest
- Monthly conference calls
- Brainstorming
  - Commonalities
  - Next move
  - Proposals

Task force

- Only swine deep-pit grow-finish barns
  - Excludes North Carolina
- No logical link or explanation
  - Site with identical barns, genetics.....
  - Some foamed, some do not
- Beef & dairy deep-pit not involved

The archived presentation is available at:
http://articles.extension.org/pages/21819/chronological-webcast-archive
Producer survey

- Conducted 2010—2011
- Across six states
- 24% sites (pits) foam present
- 59% producers at least one pit
- 6% producers had a flash fire

Producer survey

- 6% producers had a flash fire
  - 77% rooms empty
  - 62% repair work
  - 31% manure agitated / pumped

Producer survey

- 6% producers had a flash fire
- Ventilation levels
  - 46% more than minimal
  - 39% minimal
  - 15% none
Research funding

- 2012—Iowa Pork Producer Association
- Others
  - Minn. Pork Board
  - National Pork Board
  - Minn. Rapid Agricultural Response Fund
  - State Agricultural Experiment Stations
  - Extension Service

Overall program goal

- Determine causation of foam
- Find testing protocol to predicting foam
- Risk factors involved

- Three state long-term project
  - Illinois, Iowa, Minnesota

Multi-state Research Collaboration

ISU & USDA ARS
- Feed trials
- Chemical comp. analysis
- Methane production
- Foaming potential testing

UI
- Organize all manure sampling and distribution
- Microbial analysis

UMN
- Extensive producer survey
- Microbial analysis
- Foaming potential testing

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