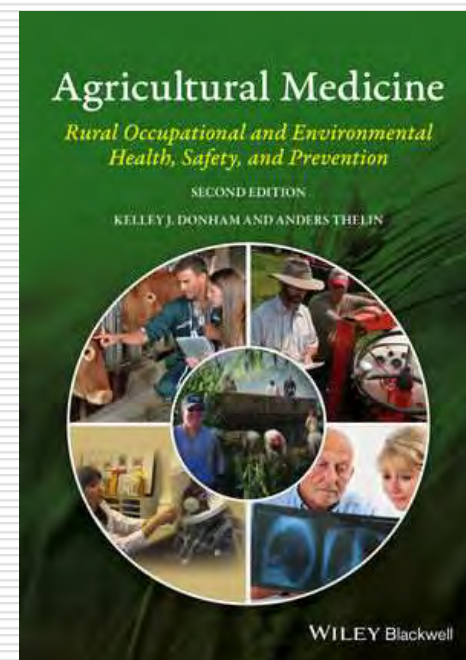


# Agricultural Respiratory Illnesses

NE/CS-CASH Ag Med Core course  
July 9 - 10, 2025



Kelley J. Donham MS, DVM, DACVPM  
Professor Emeritus in Rural Health and Safety  
[kelley-donham@uiowa.edu](mailto:kelley-donham@uiowa.edu)  
319-335-6002

# The Big Take Home Message

- ❑ Respiratory = #1 Health problem in ag
- ❑ Organic Dust #1 hazardous exposure
- ❑ Inflammation (not allergy) of airways = #1 pathology of organic dusts
- ❑ Organic Dust Toxic Syndrome (ODTS) = #1 acute problem of organic dust exposure
- ❑ Chronic problems include bronchitis, and non-allergic asthma
- ❑ The gases Hydrogen Sulfide and Nitrogen oxides (NOx) can also cause respiratory illnesses



A parody of Grant Woods  
"American Gothic"

# Respiratory Illnesses in Agricultural Populations

Credit the North Carolina Agromedicine Institute, 2020, Donham, KJ, Grafft, L., Tutor, R

□ <https://www.gahec.org/courses-and-events/68458/ashce-respiratory-illnesses-in-agricultural-populations>

# Discussion time

□ Questions? Comments? Experiences?





# Case Examples of Farmers with Respiratory problems



# Work in Enclosed Livestock and Poultry Buildings

□ This woman has worked in a pig production unit for 7 years

- Sx, of cough, tightness of chest associated with work in building
- What are the exposures?
- What is it, what should be done?



□ This worker herded the birds into crates for transport to market

- SX 6 hrs after work. Fever, muscle aches, cough, Flu-like.
- What are the exposure
- What are the exposures?
- What is it, what should be done?



# Pumping manure under slatted floor

- ☐ What was the hazard here?
- ☐ What caused this event?
- ☐ How should the farmer be treated?
- ☐ How to prevent this?





# HYDROGEN SULFIDE (H<sub>2</sub>S)

## Near fatal incident – of 2 boys

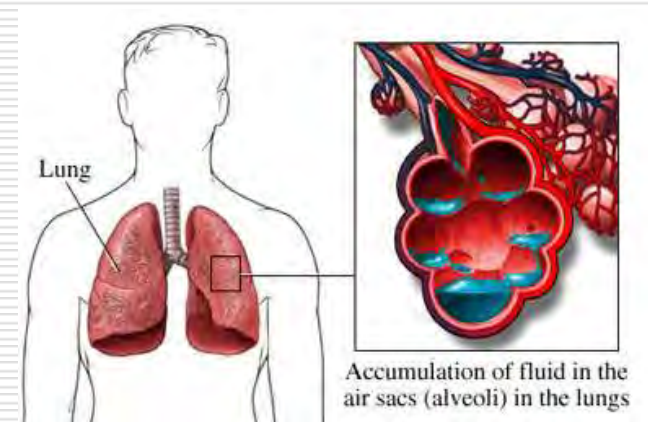


- 9/2012. Boys 2 and 4 found unconscious near manure tank
- Pump was on.
- Boys revived by EMT on site. Released later that day from the hospital
- Increased risk with Gypsum dairy bedding & DDGS in feed.
- Fatal event of a similar exposure in Northern Iowa



# Hydrogen Sulfide Exposure

- Liquid manure
- Anaerobic (> 3 feet down)
- Agitation
- Confined space
- Cellular toxin
- Extreme irritant
- Predilection for CNS
- Paralyze sense of smell
- Sudden unconsciousness
- Respiratory cessation
- Pulmonary edema



# How are a bottle of champagne and liquid manure alike?



- ❑ Agitation results in rapid release of gas from the liquid
- ❑ Harmless carbon dioxide comes from champagne (or beer or pop)
- ❑ Hazardous hydrogen sulfide comes from liquid manure

# Manure Pit Under Building (Methane – explosion – Fire Hazard)



Foaming manure pit.







## CAUTION

FILL ONLY WITH SHelled CORN  
OR OTHER WHOLE GRAIN.

DO NOT FILL WITH FORAGE  
FEEDS SUCH AS HAYLAGE OR SILAGE.

FOR MAXIMUM PRESERVATION OF  
FEED NUTRIENTS, CLOSE AUGER  
TURN COVER AFTER EACH USE, AND  
KEEP ALL ACCESS OPENINGS AIRTIGHT.

## DANGER

DO NOT ENTER  
NOT ENOUGH OXYGEN  
TO SUPPORT LIFE

 FPM

HARVESTONE PRODUCTS INC.


BLUNTON, MISSOURI 65018

PHONE 816-233-1111

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**I just thought this  
was a little dust  
cough. I wish my  
doctor had said  
something.**

**If only I knew  
then what I  
know now! No  
more cigars,  
dust mask in  
the barn and  
when handling  
moldy hay**

**The End**



# Finally – Who is this artist?

On display Chicago Museum of Art





# Grant Wood



# THANKS FOR YOUR ATTENTION AND

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Thanks for all you do and will do!

Kelley Donham