

**It's the Pits**

**Pit Gas Series #2: Methane and Ammonia**

**Managing manure demands constant attention.** As manure decomposes, it steadily emits several types of gases—among the worst are methane and ammonia.

**METHANE** is colorless, odorless, non-toxic, flammable and lighter than air. The major risk of a fiery explosion comes into play when methane over exceeds oxygen. Thus, the more poorly ventilated area, the greater the risk. Add in a little spark from an equipment malfunction, heater pilot light or LP gas heaters suspended from the ceiling, and the recipe for a disaster is complete. Although methane is non-toxic to humans or livestock, it has the potential to cause asphyxiation if it overcomes oxygen in a secured facility. Asphyxiation is a condition of severely deficient supply of oxygen to the body that arises from being unable to breathe normally.

**AMMONIA** is produced by the decomposition of non-degraded proteins in manure. The strong odor it produces makes it easily detectable as soon as levels reach 5 to 10 ppm. High levels of ammonia, between 20 and 50 ppm, irritate the eyes, nose and throat. Noxious gases like methane and ammonia can severely damage a pig's respiratory system, which causes higher incidences of pneumonia, Pleuritis and other respiratory diseases. High ammonia levels have also been linked to lower feed intake and have a negative influence on feed conversion, which reduces the performance and overall health of the animal.

**Pump-Out Precautions**

Use lockout tags to remind everyone, including employees or family members, to stop from entering a potentially unsafe building. The National Pork Board provides the tags pictured on the right free of charge to all pork producers. Order yours at the [Pork Store](http://www.pork.org).



**Table 1. Acute Effects of Swine Confinement Air Contaminants on Humans\***

Gases	Exposure Level	Effect of Symptom
<b>Ammonia</b>	5 ppm	Lowest concentration detectable by smell.
	7 ppm	<b>RECOMMENDED MAXIMUM FOR HUMAN HEALTH</b>
	6 to 20 ppm and above	Eye irritation and respiratory problems
	40 to 200 ppm	Headache, nausea, reduced appetite, irritation to airways, nose and throat
<b>Methane</b>	50,000 to 150,000 ppm	Potentially explosive
	500,000 ppm	Asphyxiation

Source: <http://nasdonline.org/document/1298/d001097/beware-of-manure-pit-hazards.html>

**Solution**

As part of its **Full-Circle Animal, Manure, and Soil-Plant System™**, ProfitPro has a number of ways to remediate noxious manure gases. Technologies, to be used alone or in combination, include probiotic feed additive (swine, dairy, beef), water additive (WaterRite™), and manure bioaugmentation products. ProfitPro also offers a **Manure Management Service** that monitors and adjustments treatment applications to achieve optimal results. Products are available for individual application as well.

For more information on ProfitPro's **Manure Management Service** call **1-888-875-2425** or go to [www.profitproag.com](http://www.profitproag.com).

**ProfitPro's Summer Conference**

Thurs., July 28 and Fri., July 29, 2011

- ♦ **Dr. Jim Ladlie** - The Full-Circle Animal, Manure and Soil-Plant System™
- ♦ **Dr. Don Huber** - Professor Emeritus, Purdue University
- ♦ **Dr. Jerry Hatfield** - Laboratory Director of the USDA-ARS National Laboratory for Agriculture & the Environment - Ames, IA
- ♦ **Dr. Michael McNeill** - Independent Crop Consultant
- ♦ **Dr. Aubrie Starks** - Consulting Chemist
- ♦ **Larry Acker** - Climatologist & Marketing Consultant.
- ♦ **Charles Brown** - Brown Seed Genetics

**Pre-Conference - Wednesday, July 27<sup>th</sup>**

**10:00 am to 5:00 pm on the "Full-Circle System™"**

- ♦ **Dr. Jim Ladlie** - President of ProfitPro, LLC
- ♦ **Doug Rohlik** - Custom Manure Applicator and grower from Belview, MN
- ♦ **LouAnn Hughes** - Performance Products, Inc.

**FREE Manure Management Teleconference** scheduled for **July 7, 2011** from 8 to 9 pm CDT on **"Series Two on the Danger of Pit Gases and How to Effectively Manage Them"**

For more information, go to [manure.profitproag.com](http://manure.profitproag.com). Dial the toll free number 1-866-225-3498 just before 8 p.m. (CDT) and enter the security code 7159 # (pound key).

**We, the hogs,  
declare our independences from:**

- ◆ odors & flies
- ◆ solids/sludge
- ◆ foaming
- ◆ lethal gases
- ◆ disease & mortality rates
- ◆ loss of pit/lagoon capacity
- ◆ manure management burdens
- ◆ potential risk/insurance claims

**Join the Revolution Now!**

For ProfitPro's Manure Management Service, visit  
[www.profitproag.com](http://www.profitproag.com) or [manure.profitproag.com](http://manure.profitproag.com)  
Find your Manure Management Service Consultant  
at [manure.profitproag.com/contactus.html](http://manure.profitproag.com/contactus.html)



**Up Coming Events**

**North American Manure Expo, Norfolk, NE**  
July 20, 2011 . . .See us at Booth #TBD

**ProfitPro's Summer Conference**  
July 28 - 29, 2011

**Pre-Conference - July 27, 2011 - Animal & Manure Management**

**FarmFest, Redwood Falls, MN**

August 2 - 4, 2011 . . .See us at Booth #904E

**DakotaFest, Mitchell, SD**

August 16 - 18, 2011 . . .See us at Booth #TBD

**Question & Answer**

*Why should you be cautious of "foaming" manure?*

Foam contains high levels of methane. During agitation, the manure breaks the foam bubbles, which leads to methane build up in the building.

Across the Midwest, foam and methane has been associated with fires and explosions in hog barns. If there is foam in the pit, turn off all pilot lights and the electric power supply (except the electricity required to power the ventilation system), prior to moving any manure.

Check-out **Manure Management Service** at [manure.profitproag.com](http://manure.profitproag.com).

*Attention: to continue receiving the newsletters, please mail us your name, address, phone number(s) and e-mail address, to ProfitPro, LLC, attn: Becky, 408 S. 1st Ave, Albert Lea, MN 56007 or e-mail information to [bboone@profitproag.com](mailto:bboone@profitproag.com).*



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