

Poultry Manure Belt Drying

2017 Manure Management Update

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Overview

Why this project?

Project details

- Background
- Goals
- Current Work
- Future Plans

Poultry Manure Characteristics



Manure properties:

- High nitrogen values
- Moisture content: 65-80%

Ammonia volatilization:

- Moisture content
- pH
- Temperature

Ammonia Volatilization: Reasons for Concern



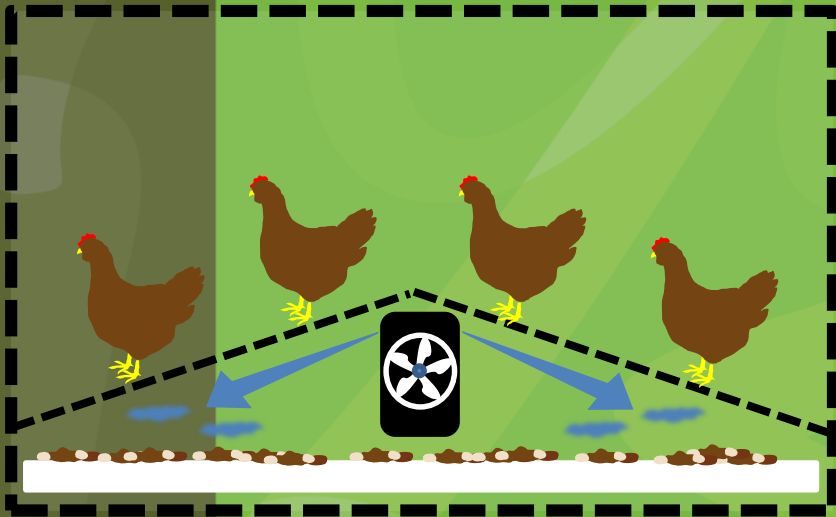
- Poultry health/production
- Worker health
- Cost of control
- Loss of nitrogen value from manure
- Impact on local environment
 - Odour
 - Acidification of water/soils

Ammonia Volatilization Controls



- Diet/Water
- Supplements/enzymes
- Manure pH
- Manure drying
 - Belt dryers
 - Tunnel dryers

Project Background



Project initiated in 2016

- Egg Farmers of Alberta
- Alberta Agriculture and Forestry

Information gaps noted

- Economics
- Applicability in Alberta
- Aviary applications

Project Goals

- Improve understanding of the benefits and challenges of adopting drying systems
- Study variables that impact ammonia release and nutrient retention
- Investigate economic and net environmental implications

Current Activities

Survey of producers
with belt drying
Manure sampling

- Fresh
- Dried vs. Air Dried

Analyze manure and
water samples



In-Barn Testing



Perform in barn tests to evaluate:

- Extra energy usage
- Manure nutrients levels
- Ammonia levels in barn
- Other co-benefits/challenges

Scenarios to optimize:

- Drying time
- Manure removal frequency
- Seasonal optimizations

Sustainability Perspective

Compare net cost/benefit

- Extra energy to dry
- Potential emission reduction
- Retention of nutrients in manure
- Ventilation/heating impacts

Beyond only economic analysis

Evaluation of Ammonia Emissions



- Contingent on in-barn testing
- University of Alberta Poultry Research Centre
- Measure relative Ammonia and GHG emission
- Use to guide recommended Best Management Practices

Extension Information

- Input to PEEP and Next Policy Framework
- Key messages delivered by EFA and AF

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Questions?



Multi Disciplinary Team

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