

Extension and Outreach Efforts to Preventing and Controlling Respiratory Diseases in the Poultry and Game Bird Industries by Controlling Environmental Insult

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Objectives

- 1) Education on ventilation
- 2) Research on dust, ammonia and their effect on upper respiratory tract

Approach Education

- Brochures Spanish/English
- Videos Spanish/English
- Topic to be covered:
 - Ventilation (emphasis on summer and winter)
 - Ammonia control
 - Impact of ammonia and dust on the generation of respiratory diseases

Approach research

- Build dust and ammonia generators inside environmental chambers
- Expose bird to controlled “field conditions” that mimic poor management conditions
- Compare the effect of different types of dust in airway inflammation
- Pro inflammatory markers will be measured using PCR

Progress extension

- ✓ Key Aspects of Mechanical Ventilation for Poultry Housing
- ✓ Aspectos clave de la ventilación mecánica en casetas avícolas

Next Articles and videos (English/Spanish)

- Methods for measuring ammonia
- Litter management

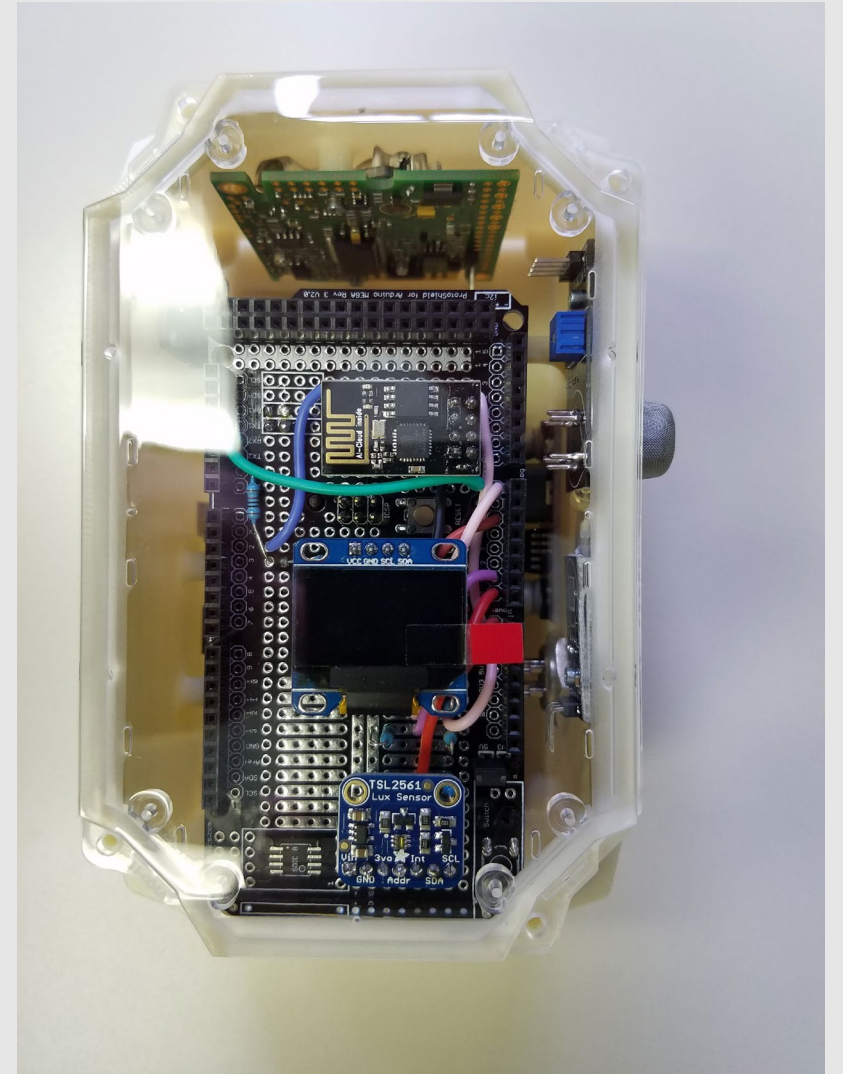
- Bilingual videos
- Material from the bulletins will serve as the base for a video

Research progress

- IACUC protocol is on hold waiting for the environmental chambers to be ready
- We needed:
 - New controllers
 - CCS system for remote monitoring of environmental conditions
 - Emergency power generator
- Budget is on hold waiting the the IACUC approval

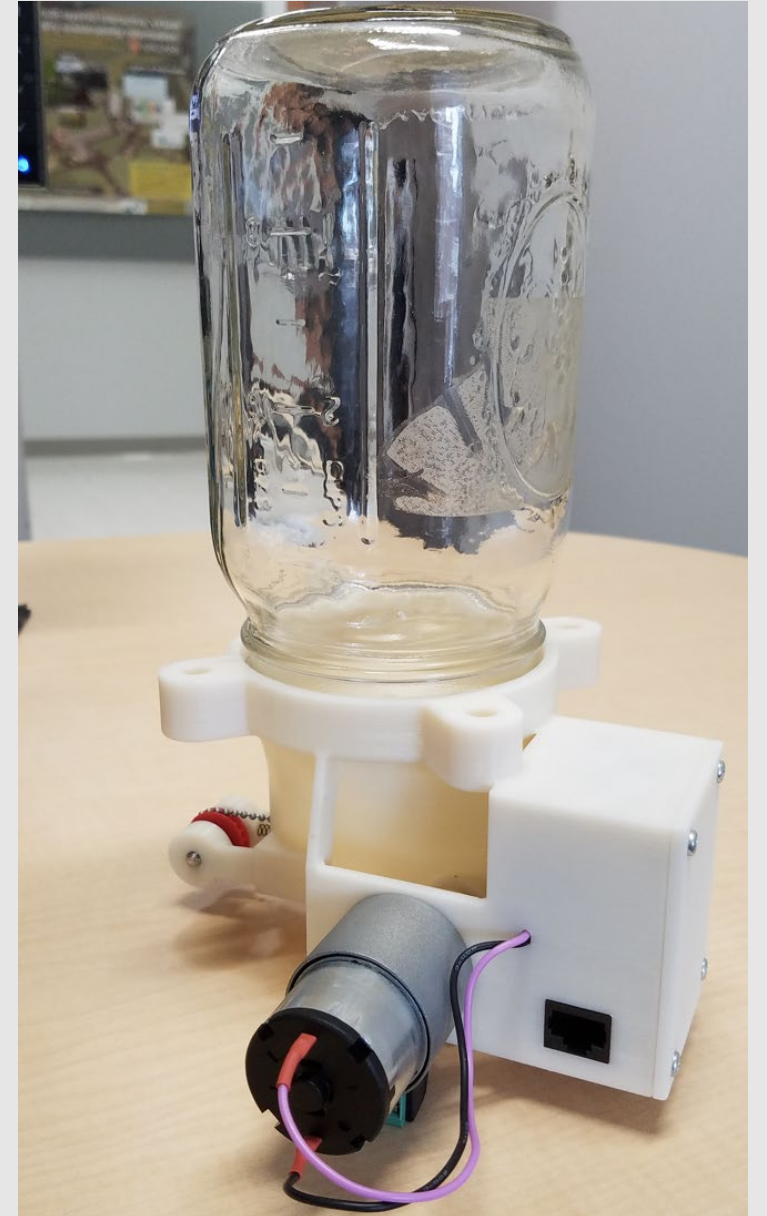
Research progress

- Different ammonia and dust sensors have been tested
- We have built 2 units based on Arduino boards able to monitor ammonia, dust, temperature, humidity, air speed.
- The units can store data that is recorded every min.
- These controllers have the ability to maintain dust and ammonia within the selected target



Progress research

- First prototype of our dust generator system is assembled.
- Dust is moved from the reservoir via variable speed chain connected to the controllers



Next steps research

- Calibrate the chambers
- Secure IACUC approval (Jan 2019)
- Start the experiments early 2019

Next steps Extension: Meetings

- Maryland:
 - Dec, 2018 grower's meeting
 - Jan 14th, 2019 Delaware AG meeting
- Pennsylvania:
 - Dec, 2018. Avian Diseases Course, University Park
 - Feb, 2018. Poultry Management and Health Seminar, Lancaster
 - Poultry Sales and Service: Ago, 2018, State College
- Alabama:
 - Meetings with producers Sept 2019.
 - Material will be distributed in the extension offices throughout the state.

Thank you!

Questions?