

- 1  **COCCIDIOSIS IN GAMEBIRDS AND ITS CONTROL**  
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- 2  **Coccidiosis in Gamebirds: A National Initiative**  
⊙ Sponsorship from NAGA and the Midwest Poultry Consortium.
- 3  **Game Bird Project (NAGA)**  
⊙ Conduct a survey: Determine the species of coccidia present and the types involved in outbreaks  
⊙ Test known anticoccidial drugs to make recommendations for immediate use  
⊙ Develop vaccine strains of most pathogenic species in pheasants and chukars
- 4  **Gamebird Project**  
⊙ Rick Gerhold: Veterinarian, Background in wildlife diseases  
⊙ Ph.D. student
- 5  **What are these?**
- 6  **Current project focused on:**  
⊙ Bobwhite Quail  
⊙ Chukar Partridge  
⊙ Ringneck Pheasant
- 7  **What is coccidiosis?**  
⊙ Protozoa  
⊙ Live entirely in the gut  
⊙ Damage intestine, food and water absorption  
⊙ Each animal has its own coccidia  
⊙ Spread by direct contamination
- 8  **Diagnosis more difficult in GB**  
⊙ Lesions in the gut are not distinctive  
⊙ Microscopic exam needed to confirm presence of parasites  
⊙ Look for mucus, fluid, throughout the gut, white cecal material
- 9  **Progress on survey:**  
Coccidia are isolated from droppings or from intestines during outbreak as is practiced in chickens.  
⊙ 30 Pheasant samples submitted from 9 states

- ⊙19 chukar samples from 4 states
- ⊙30 bobwhite quail samples from 10 states
- ⊙Goal is 50 samples of each bird species

10  **Species of coccidia in game birds**

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13  **Second major goal: Drug tests**

- ⊙Drugs available for prevention of coxy in chickens, turkeys
- ⊙Test for effectiveness, toxicity in game birds
- ⊙10 tests completed in first year

14  **How do we test drugs?**

15  **Drug studies in bobwhite quail:**

16  **Anticoccidial drugs rating system:**

- \*\*\*\* Knocked their sox off
- \*\*\* Moderate control
- \*\* Better than nothing
- \* Not better than nothing

17  **Results: 4 Pheasant tests**

18  **Results: 3 chukar tests**

19  **Results: Bobwhite quail tests**

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21  **Using anticoccidial drugs wisely**

- ⊙Avatec: Efficacy in pheasants described by McQuiston (1985). Highly effective.
- ⊙Avatec tested by McDougald and Fuller in 2008; only moderately effective.
- ⊙Drug resistance because of extensive usage?

22  **Rapid drug resistance with some drugs:**

- ⊙Slow: Avatec, other ionophores
- ⊙Moderate: Rofenaid, sulfas
- ⊙Fast: Robenz, Coyden, Clinacox, Deccox

For this reason, long term use of products in the 'fast' category is discouraged.

Learn to rotate the products to maintain effectiveness

23  **How does management affect coccidiosis control?**

- 24  **Management?**
- 25  **Management  
for disease  
control?**
- 26  **If it's good for the bird...**  
 1 ...It's probably  
 good for the  
 parasites  
 Too.
- 27  **Future control of coccidiosis**  
 ◎Control by vaccination? (3<sup>rd</sup> goal)  
 ◎Vaccines for chickens and turkeys are very successful in  
 preventing mortality and morbidity.  
 ◎Why not pheasants and chukars?  
 ◎Administered at hatch.  
 ◎Cost-effective
- 28  **Immunization feasibility with chukars:**
- 29  **Immunization of chukars:**  
 ◎Initial study showed that chukars could be immunized with low  
 dose of oocysts
- ◎Study raised the possibility that immunity was not as 'species  
 specific' as that observed for other Eimeria. (Isolates C3 and  
 C13 are PCR-distinct)
- 30  **Summary / conclusions**  
 •Coccidiosis is prevalent in the gamebird industries, often  
 causing great loss.  
 •Some tested drugs were shown to be of good value if used  
 correctly.
- 31  **Summary/conclusions**  
 ◎Choose drugs carefully and rotate programs as practiced in  
 the poultry industry.  
 ◎Improvements in manage-  
 ment will reduce but not  
 eliminate coccidiosis

◎Vaccine development  
should be a high priority  
program