

VETERINARY SURGEONS

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www.stdavids-poultryteam.ie

Coccidiosis in Broilers

CALLUM TURNER DVM MRCVS

ST DAVID'S POULTRY TEAM



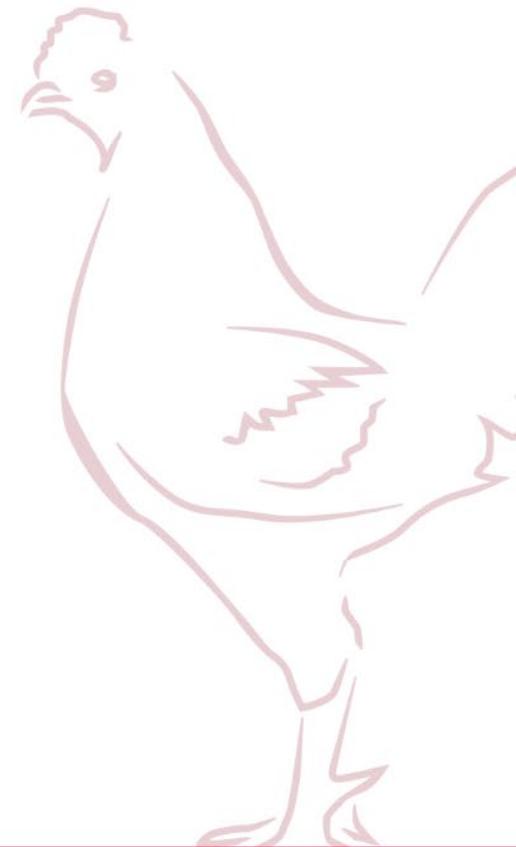
Why Should We Be Concerned About Coccidiosis?

- Economic Factors
- Poor Weight Gain / FCR
- Mortality – *E. tenella*
- May cause gut leakage which may lead to pericarditis, peritonitis, lameness and other issues
- Damage to the gut may lead to *Clostridia* to reproduce (if present) and cause necrotic enteritis

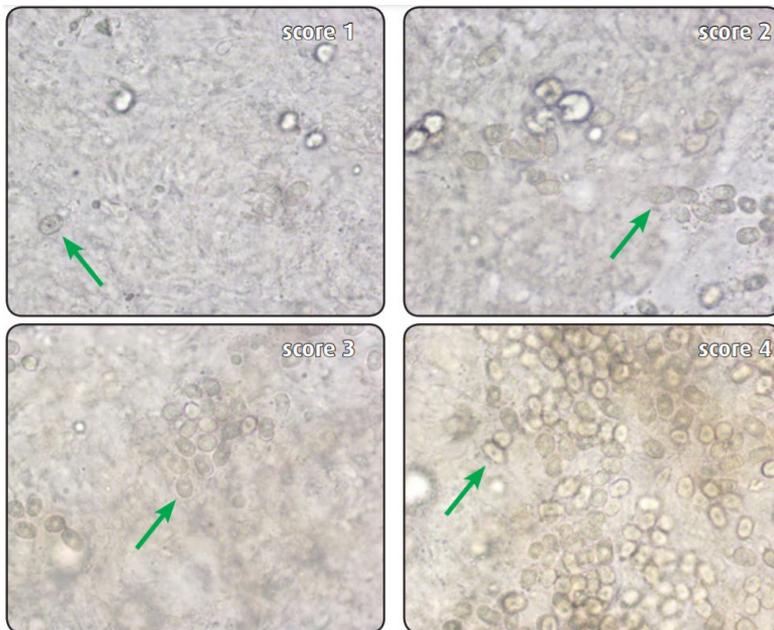


How Do We Manage Coccidiosis on Farms?

- Biosecurity
- Cleaning and Disinfection (C&D)
- Coccidiostats or Vaccination
- Litter Management
- Diagnostics
 - Oocyst Count
 - OPG (oocysts per gram of faeces)
 - Direct visualisation and counting of oocysts using a microscope
 - PCR Testing
 - Lesion Scoring – Johnson & Reid (1970)

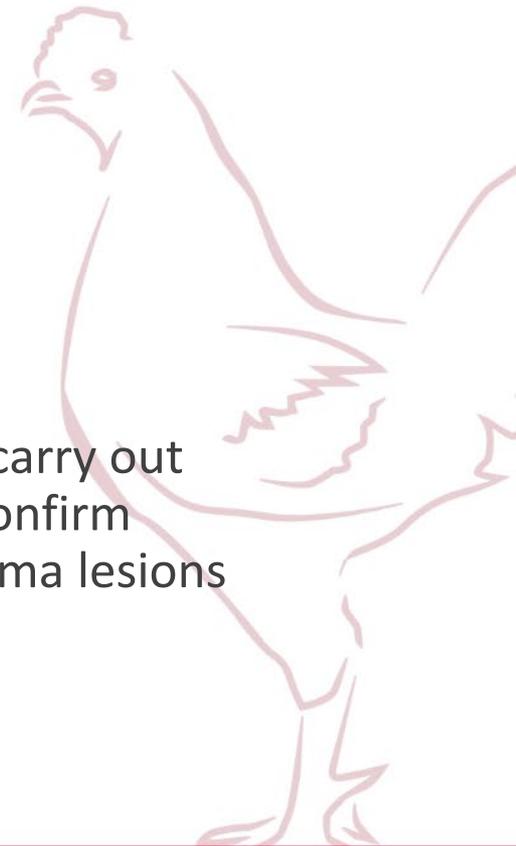


Oocyte Count



- E. maxima
 - 0: No oocysts
 - 1: 1 – 10
 - 2: 11 – 20
 - 3: 21 – 49
 - 4: > 50
- It is important to carry out oocyte count to confirm suspected E. maxima lesions

Images from: www.huvepharma.com



Lesion Scoring: Johnson & Reid (1970)

- Standardises coccidiosis based on lesions found throughout the intestinal tract
- Focused species:
 - *E. acervulina*
 - *E. maxima*
 - *E. tenella*
- Allows a numerical value to be giving to a scoring visit (Total Mean Lesion Score) which allows for comparative analyses to be made



E. acervulina



Score 1

- White plaques are present in the duodenum with less than 5 lesions per sqcm



Score 2

- Numerous individual white plaques present in the duodenum and / or jejunum with more than 5 lesions per sqcm

www.immucox.com/coccidiosis/disease-monitoring
Photo credits: Chicken lesion scores / Jean-Michel Répérant

E. acervulina cont...



Score 3

- The white plaques are more numerous than score 2 and they coalesce so individual lesions are not distinguishable



Score 4

- Individual white plaques are not distinguishable



E. maxima



Score 1

- Small red petechiae on the serosal surface of the mid intestine; small amounts of orange mucus content may be present



Score 2

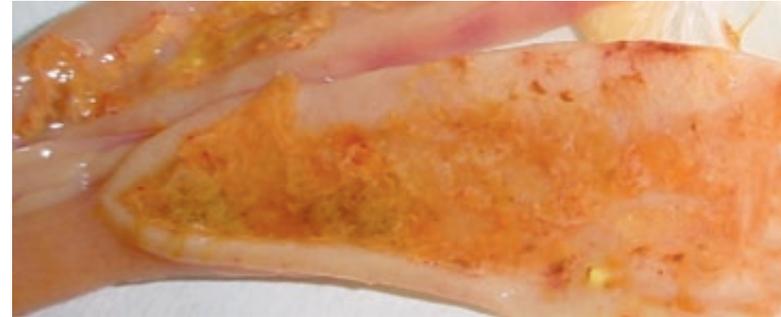
- More numerous red petechiae with some orange mucus content; some ballooning may be present along with thickening of the intestinal wall

E. maxima cont...



Score 3

- Ballooning of the small intestine and thickening of the intestinal wall. Orange mucus content with small amounts of blood



Score 4

- Significant gut ballooning with blood clots, orange mucus and watery contents present

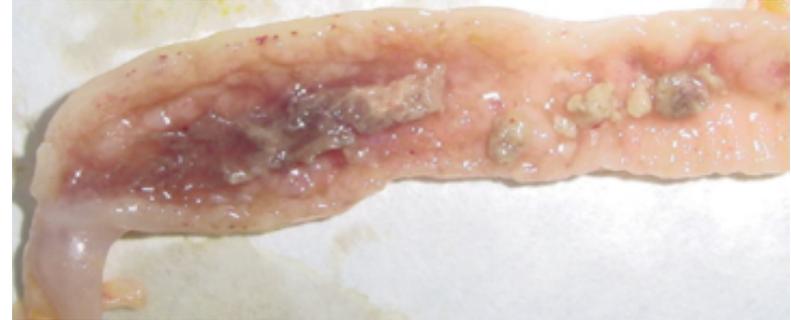
www.immucox.com/coccidiosis/disease-monitoring
Photo credits: Chicken lesion scores / Jean-Michel Répérant

E. tenella



Score 1

- Some petechiae on the serosal and mucosal surfaces with little to no blood present



Score 2

- More petechiae present on the serosal and mucosal surfaces. Thickened cecal wall with some bloody contents

www.immucox.com/coccidiosis/disease-monitoring
Photo credits: Chicken lesion scores / Jean-Michel Répérant

E. tenella cont...



Score 3

- Thickened cecal wall with absence of normal cecal contents



Score 4

- Ceca are distended and club-shaped. Contents consists of blood clots

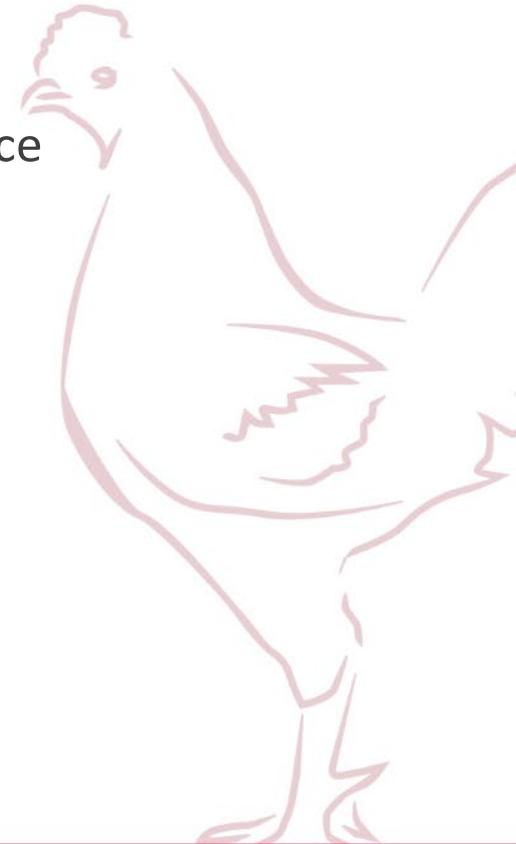
www.immucox.com/coccidiosis/disease-monitoring
Photo credits: Chicken lesion scores / Jean-Michel Répérant

Treatment and Control

- Vaccines
- Amprolium
- Infeed coccidiostats



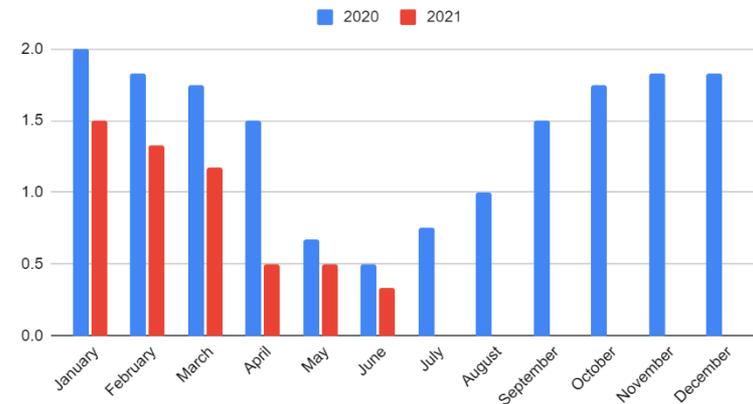
- Cleaning and disinfection
- Floor burning
- House maintenance
- Biosecurity



Tracking Gut Scoring

- Apps can be used to track scoring visits (inhouse app)
- These can be graphed to give trends and comparisons:
 - Sites / Houses / Flocks
 - Coccidiostats
 - Feed mills
- Other parameters are monitored including:
 - Skeletal issues (TD, femoral head)
 - Podo / Hock burns
 - Among other parameters

Total Mean Lesion Scores



Values have been imputed to show differences in trends

Cleaning and Disinfection

- Ensure a thorough wash down
- Use a detergent
- Re-wash the house to remove as much organic material as possible
- Floor burning
- Once house is **DRY**, apply a coccidiosis specific disinfectant
 - Chlorocresol based disinfectant
- Use disinfectant at the correct rate to ensure a minimum contact time of four hours
- Disinfect the store and the apron

Disinfection of House Specific Footwear

- Dirt / debris in tread
- Buy footwear with a smooth sole
- Place boots in a coccidiosis specific disinfectant between crops:
 - Dipping isn't sufficient for the disinfectant to affect the oocysts
- Use house specific footwear
 - Frustrating problem:
 - Crossing stepover barrier without changing footwear



Disinfection of House Specific Footwear cont...



Floor Burning

- Carry out **BEFORE** disinfection
- Important to ensure that vehicle carrying equipment is free of debris



House Maintenance



- Fill in cracks
- Expansion joints
- Gaps in doors or other structures



House Maintenance cont...



Biosecurity

- Entering through the store
- Entering through the barn door
- Litter spreading
- Chick placement
- One way system
- Maintenance
- Step over barriers
- Footwear

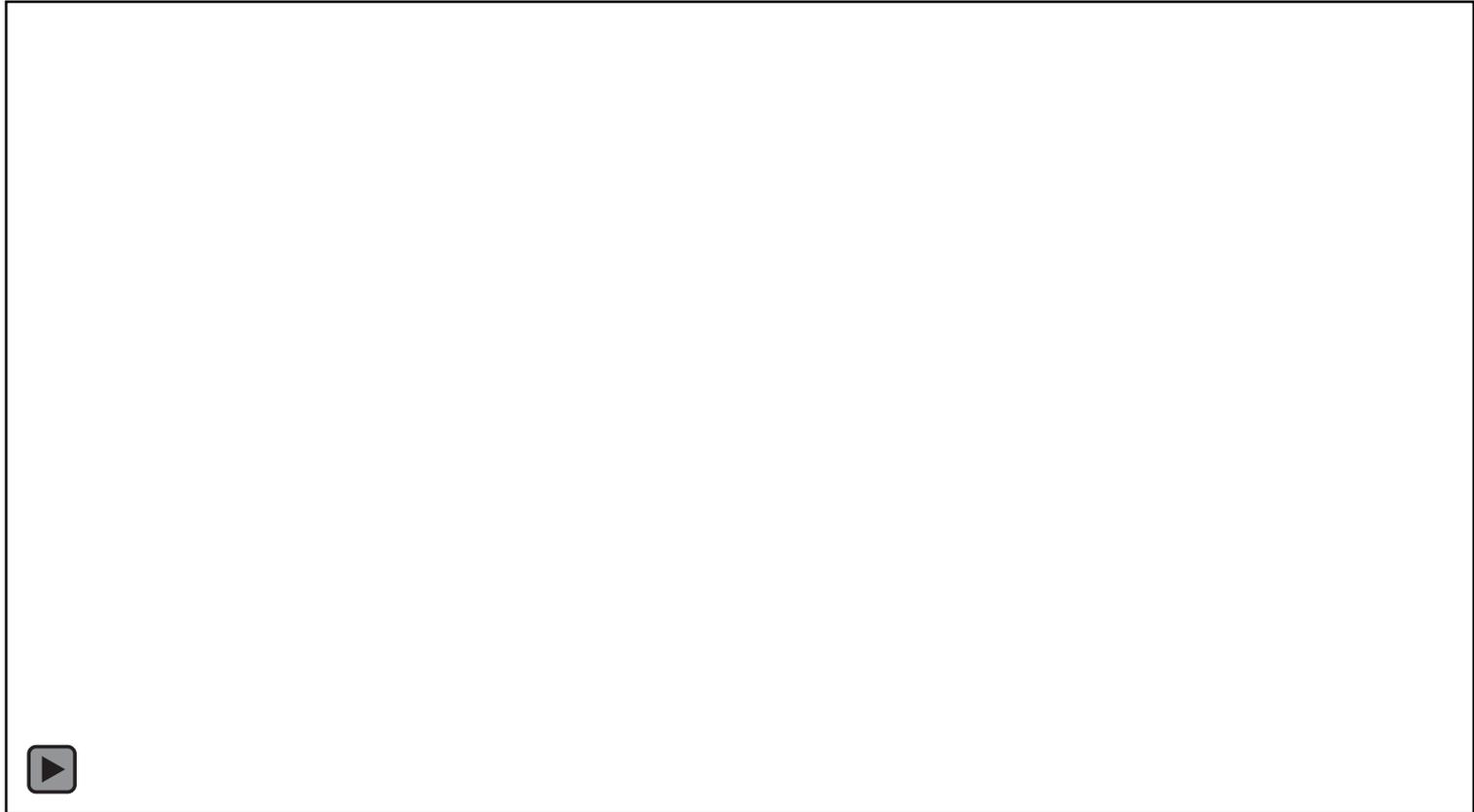
- Let's Talk Poultry – Biosecurity

 **IMPORTANT** 

Prior to placement: once a house has been cleaned and disinfected, it should be treated the same as a house containing birds

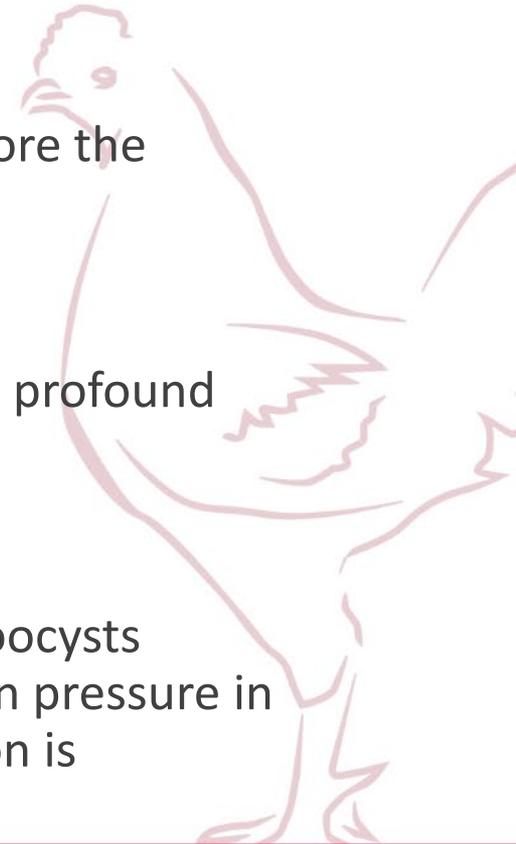
Good biosecurity starts long before the chicks are placed

Chick Placement



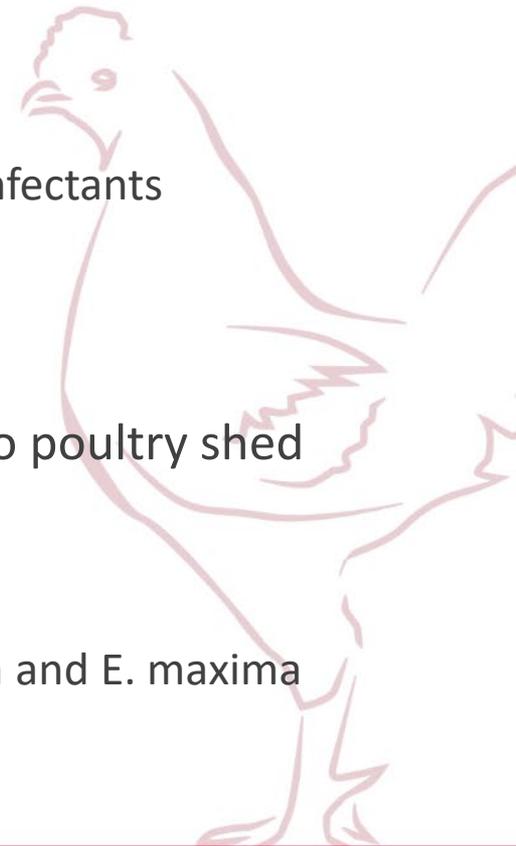
The Bad News

- You will not remove coccidiosis from your poultry houses completely
- The goal is to reduce the number of oocysts and therefore the infection pressure in the house
- Intercrop cleaning and disinfection practices can have a profound impact when done correctly
- As coccidiosis cycles through the birds, the number of oocysts increase in the house which will cause a higher infection pressure in the following flock, especially if cleaning and disinfection is inadequate



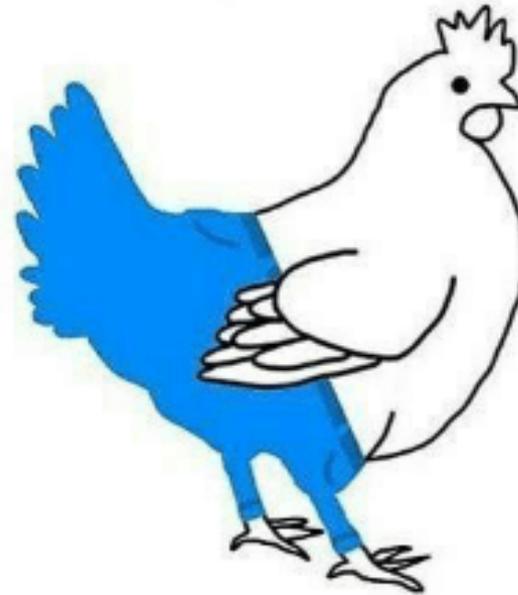
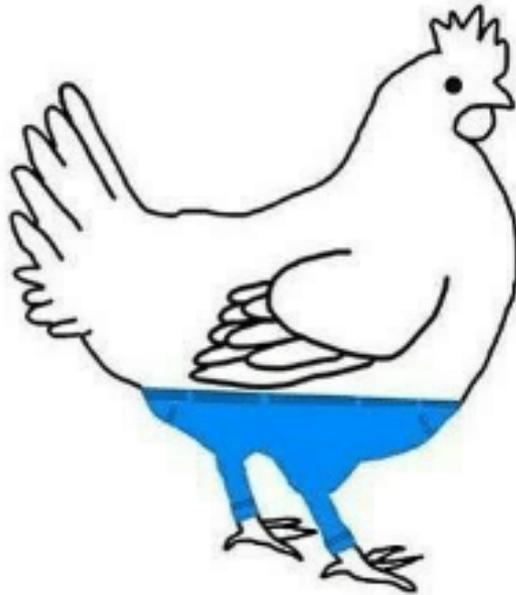
Coccidiosis Myths

- Coccidiosis is present in the feed
 - Coccidiostat vs Coccidiosis
- Disinfectants
 - Coccidiosis specific disinfectants – chlorocresol based disinfectants
- It comes with the chicks from the hatchery / breeders
 - Vaccinated strains
- Cross species infection – walking from the cattle shed to poultry shed
 - Species specific
- No blood in the droppings = No coccidiosis challenge
 - *E. tenella* causes true blood in the droppings; *E. acervulina* and *E. maxima* don't



Questions?

If a chicken wore pants would it wear them
like this or like this?



The real question

