



INTERNATIONAL

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Sanitary aspects of cage-free hens

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What is happening?



1. Faecal-oral infection is possible



2. Hens have contact with pathogens in the outdoors



3. Flock management is more complicated

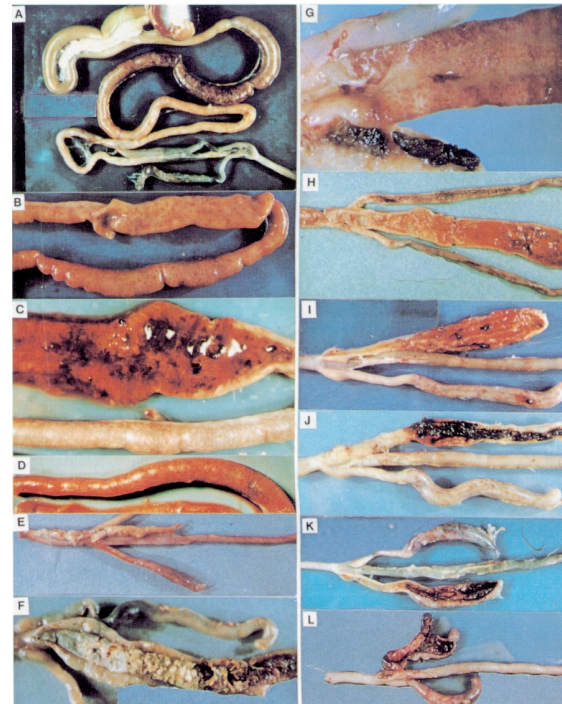
Topics

- Coccidiosis
- Round Worms
- Brachyspira
- Spotty liver disease
- Eating feathers
- Toes pecking
- Pilling/Smotering

Coccidiosis

Where to look:

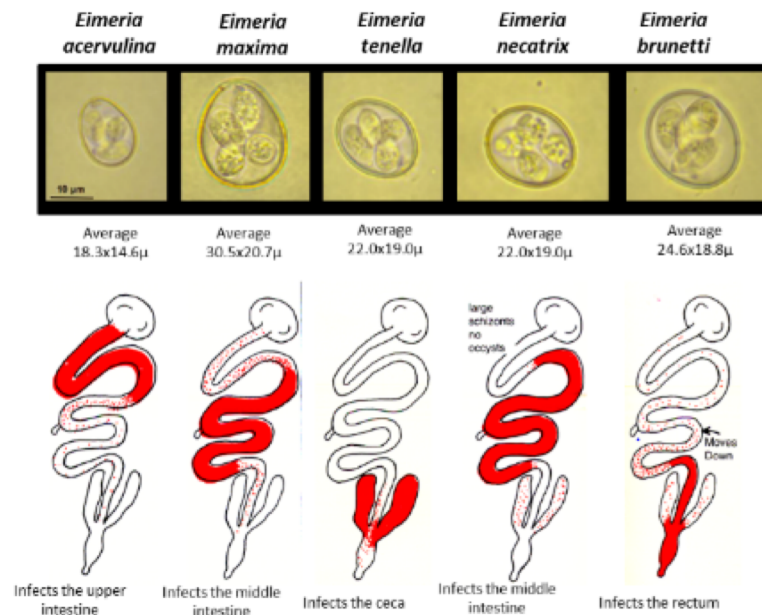
- All chickens housed in floor systems can be affected worldwide.
- Lesion & Clinical sign depending on different species but most common will include:
 - Weight and uniformity loss,
 - Ruffled feathers,
 - Paleness,
 - Depression,
 - Watery or bloody diarrhea
 - Increased Mortality



Coccidiosis

Etiology:

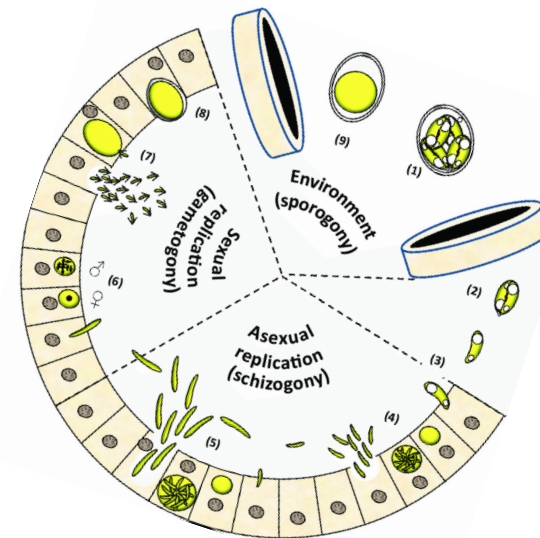
- Etiologic agent: Eimeria Spp.
- It is a protozoa that needs to cycle in the environment and in the poultry gut
- Different species produces different lesion in the gut
- There is no cross protection between species



Coccidiosis

Solutions:

- Develop a long-lasting immunity against the different Eimeria species
- Different strategies:
 - Essential oils
 - Vaccines + anti cocci programs
 - Long-life-bird vaccines
- **Vaccine need to be used correctly**
 - Administration is uneasy. Preferred administration route: Hatchery by Coarse droplet / gel
 - Vaccine coccidia strains should recirculate several time before conferring complete protection.
 - Attenuated and non attenuated vaccines need different farm management.



Round Worms

Where to look:

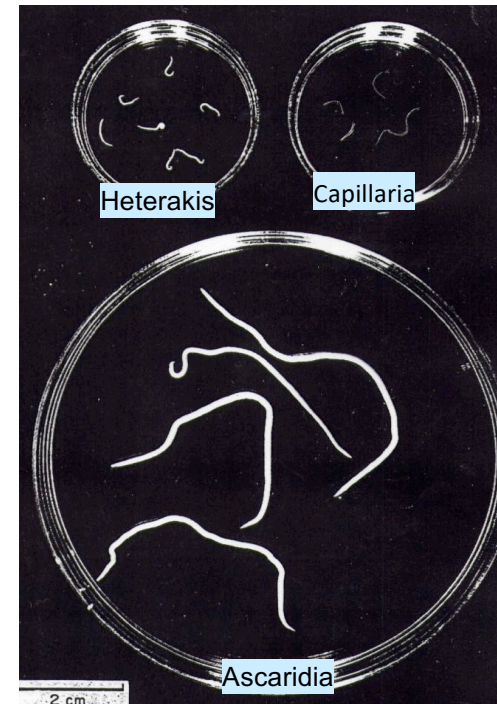
- All chickens housed in floor systems can be affected worldwide.
- Lesion & Clinical sign depending on different species but most common will include:
 - Weight and uniformity loss
 - Egg production drops
 - Presence of worms in the gut and in feces.
 - In some case worms can appear in eggs



Round Worms

Round worm species:

- Different species affecting laying hens:
 - *Ascaridia* sp.
 - *Heterakis* sp.
 - *Capillaria* sp.
 - Strongles
 - *Trichostrongylus tenuis*
- Direct cycle in most of them but still earthworm and other have an important role on its spread
- Some of them play a critical role in *Histomonas meleagridis* epidemiology

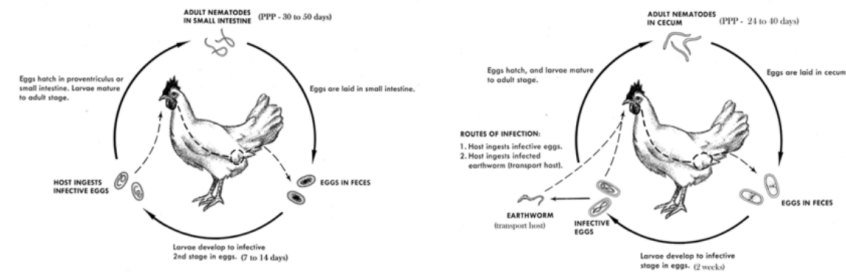


Round Worms

Solutions:

Erradication is not possible. Go for population control:

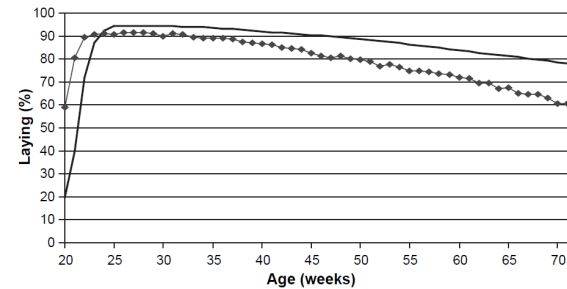
1. Monitor infestation level
 - Ascaris finding in autopsies
 - Egg in faecal droppings
2. Treat flock when needed
 - Flubendazol
 - Piperazine
 - Be careful about resistance
3. Passive control
 - Clean & disinfection (Quick lime)
 - Outdoor park rotation



Brachyspira

Where to look:

- All long-life chickens housed in floor system. It colonizes 70% of laying hens flocks.
- Lesion & Clinical sign:
 - Reduced egg production
 - Downgraded eggshell
 - Bodyweight loss
 - Presence of yellowish, foamy droppings
 - No sharp mortality



Brachyspira

Etiology:

- Etiologic agent: Bacteria genus spirochaeta
 - *Brachyspira piloscoli*
 - *Brachyspira intermedia*
- Mostly present at ceca epithelium level
- Pathogeny depending in the strain and gut health
- More common in:
 - Free range
 - Multiage farm
 - Aged flocks (>40 weeks)



Brachyspira

Solutions:

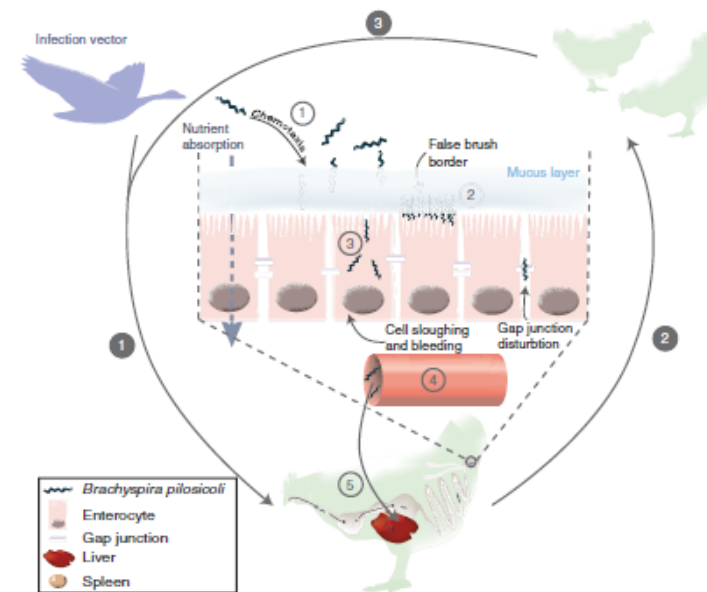
Avoid colonization

- C&D protocol in the service period
- Strict biosecurity routines
- Rodent control

No vaccines are currently available for use in poultry or other animals.

Antimicrobial treatment.

- Tiamuline, lincomycin, ...
- Lack of appropriate licensed products in many countries
- Repetitive treatment are needed most of times



Spotty liver disease

Where to look:

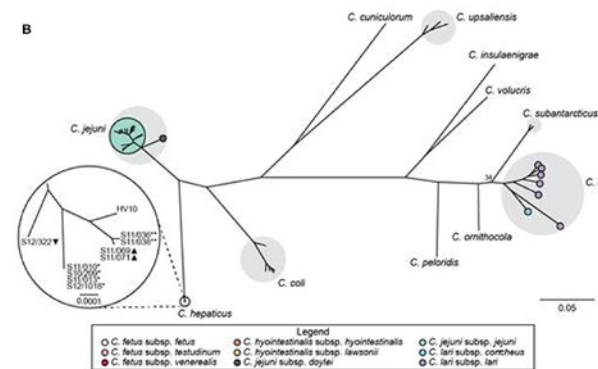
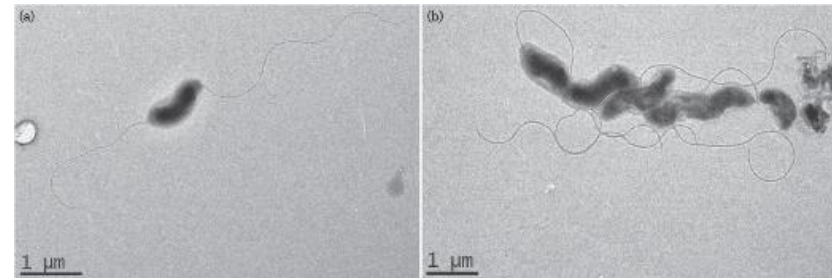
- Mostly in free range brown hens. Most of the cases in Australia but it have been already reported in other parts of the world.
- Lesion & Clinical sign:
 - Sharp increase of mortality in good condition laying hens.
 - Often decreased production
 - Multiple necrosis small foci and inflammation at liver



Spotty liver disease

Etiology:

- Etiologic agent: *Campylobacter hepaticus*
- Recently identify as causative agent in 2017
- It can be isolated also from wild birds and rodents
- Still research to do on this bacteria



Spotty liver disease

Solutions:

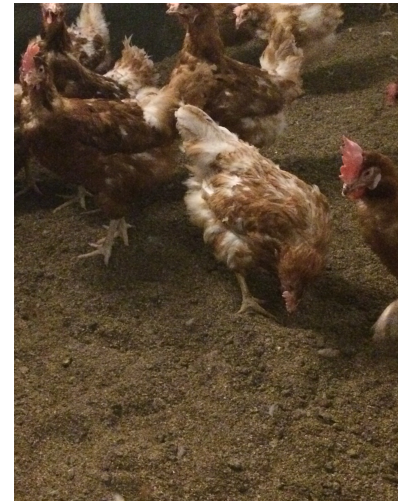
- NOT an effective treatment present day
- Antibiotics
 - Chlortetracycline 3-5 days
 - Lincomycin and spectinomycin
- Medium chain fatty acids (as preventive)
- Good husbandry
- Vaccine ??



Eating feathers

Were to look:

- Litter
- Bird (behaviour)
- Section (crop/stomach)



Eating feathers

Reasons of feather eating:

- Nutrition
- Select Feed intake



Eating feathers

Solutions:

- Use Alfalfa to check if the pullets/layers are on balance
- Use fast feed distribution to deliver right feed to every bird
- Feeding on a empty feeder



Toes pecking

Were to look:

- White layers in production (0,1-0,3% mortality weekly)
- No beak treatment



Toes pecking

Reasons of toes pecking:

- No clear reason!

All white breeds

All feedcompany's

All type's of cage-free systems

All flocks without any beak-treatment



Toes pecking

Solutions:

No clear solution found till now!?

- Lower light intensity
- Good nutrition and feedmanagement
- Use of additional supplements in water

Vitamin C, Choline (No FLS-Mix), Magnesiumoxide gives some positive effects.

Calcium, Milk Powder, Zinc gives very little effect

Pilling/Smotering

Were to look:

- White and brown layers
- Less problems in rearing
- Age and time during the day of pilling/smotering
 - Nest boxes or scratch area
- All type's of housing systems!



Pilling/Smothering

Reasons of pilling/smothering:

- Light distribution and daylight influence
- Gut health
- Climate
- High uniform flocks in cage free production
- Stocking density and nest space



Pilling/Smotering

Solutions:

Check when and where birds pilling/smotering!

- Lower the light intensity and reduce direct daylight influence
- Use barriers in scratch area, and for nest boxes
- Support gut health
- Check climate



Thank you for your attention!
Your Questions, please!





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