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# Eimeriidae

# The life cycle of Eimeria



<https://eimeriaprevention.com/eimeria-biological-cycle-an-example-of-perfect-complexity-in-biology/>

# Taxonomic Consideration

Phylum: Apicomplexa

Family: Eimeriidae

Subclass: Coccidia

Suborder: Eimeriina

Genus: Eimeria

Species: acervuline

mivati

necatrix

brunetti

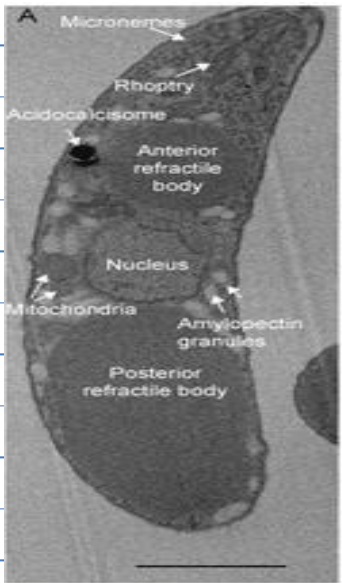
praecox

maxima

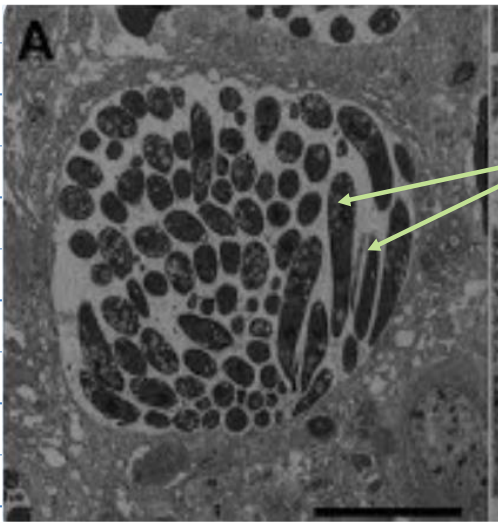
hagani

Tenela

mitis

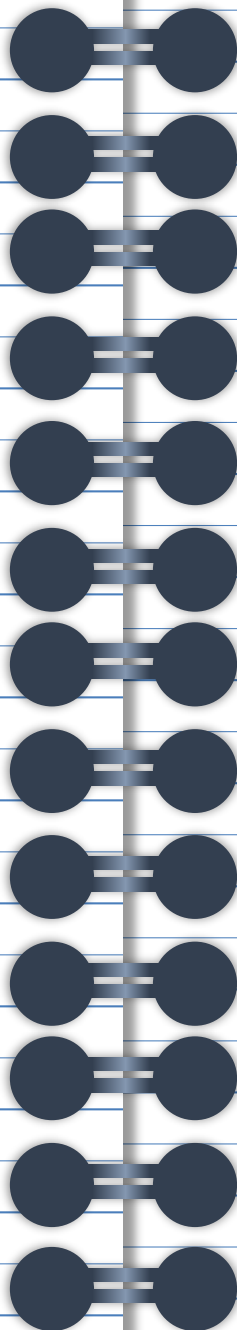


**Sporozoites**

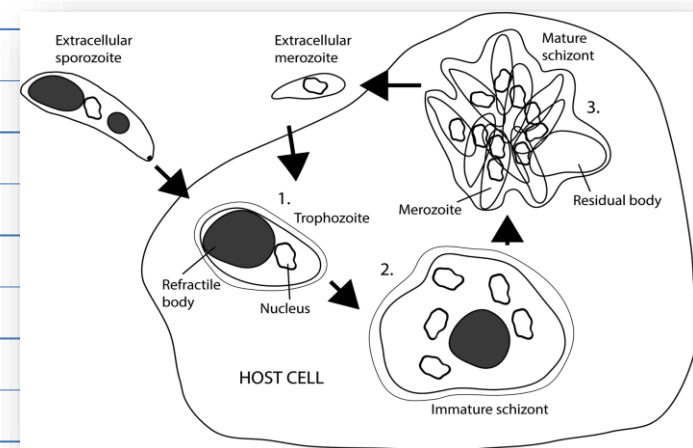
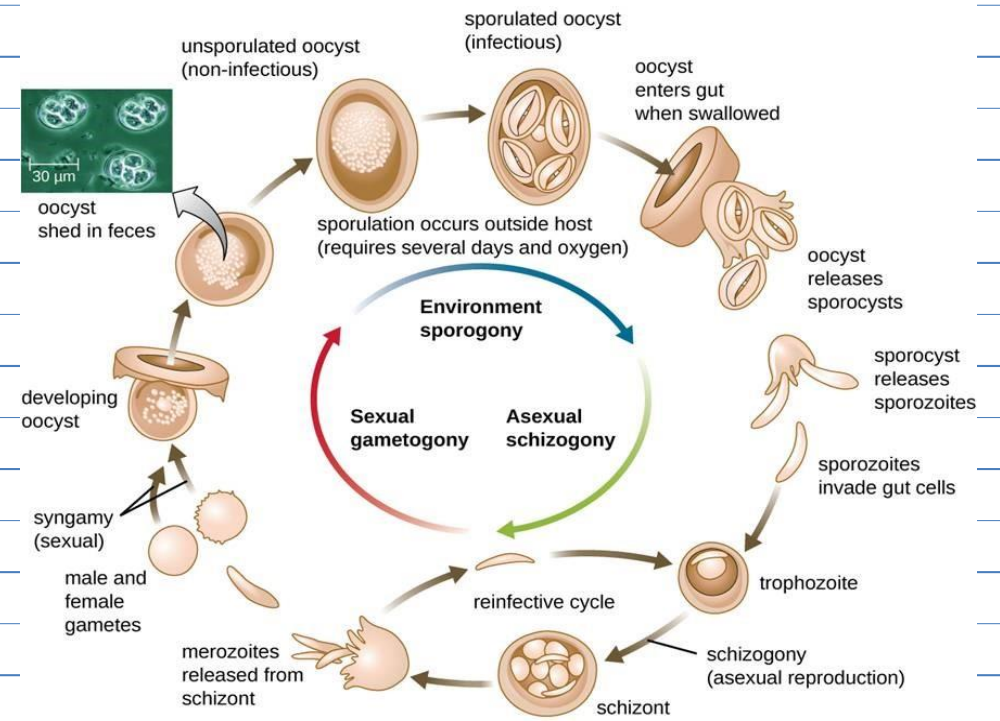


**merozoites**

**schizon**



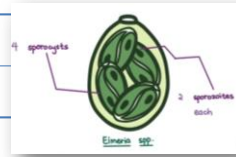
**Eimeria Life Cycle**



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## Unsporulated Oocysts

## Sporulated Oocysts

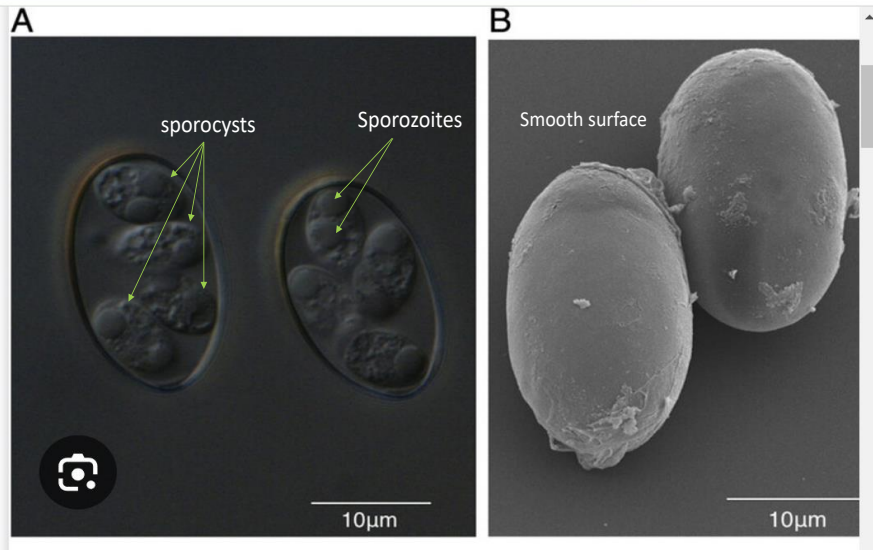


Optimal environmental conditions:

21-32 °C

Moist little

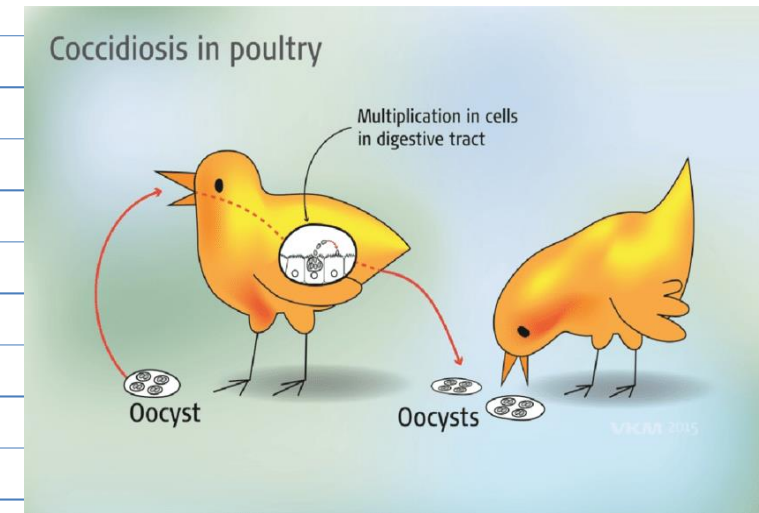
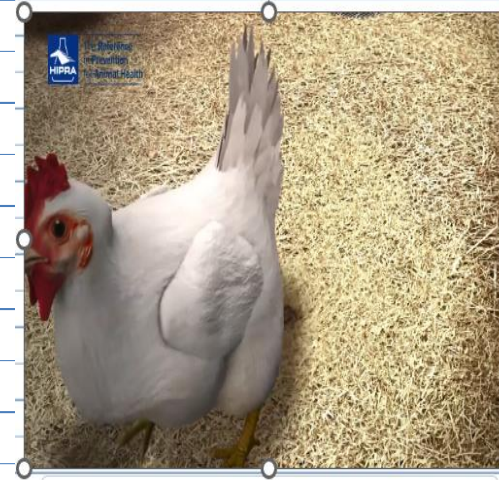
Sufficient oxygen



Sporulated Oocysts

## Mode of infection

Eimeria are transmitted via the fecal-oral route



## Is Eimeria a pathogen?

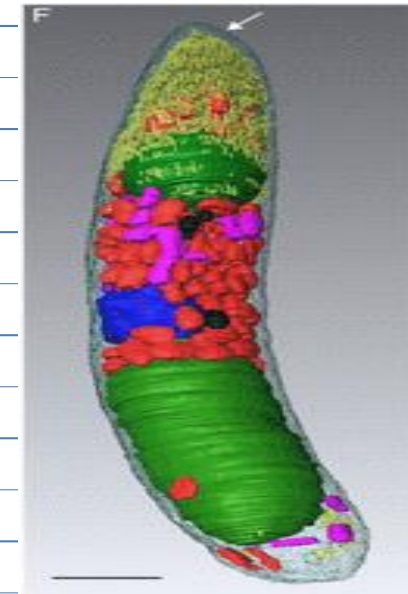
Yes, Eimeria species were divided into different pathogenic levels

The disease caused by Eimeria Species

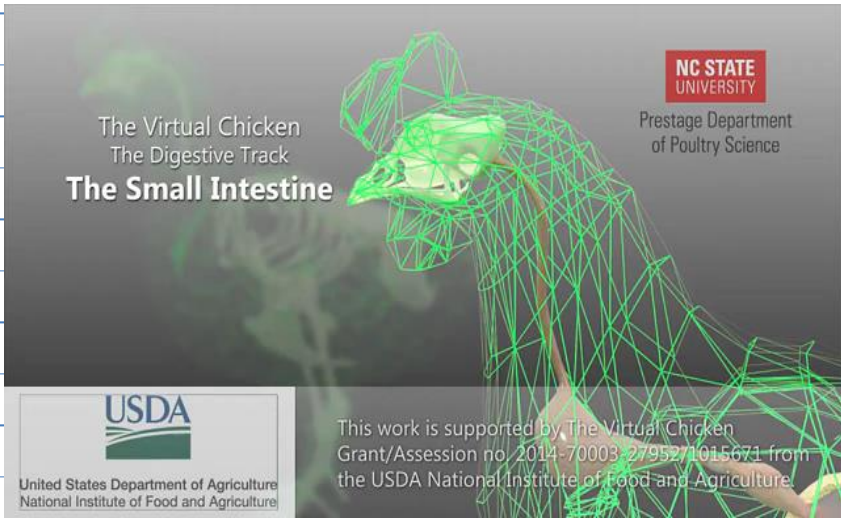
## Coccidiosis

## The infective stage of Eimeria

The infective unit of all Eimeria is the sporozoite stage, which is a banana-shaped motile cell



Sporozoites



<https://www.youtube.com/watch?v=t2nXXiozarw>



<https://www.youtube.com/watch?v=T5CNZvKBT2A>

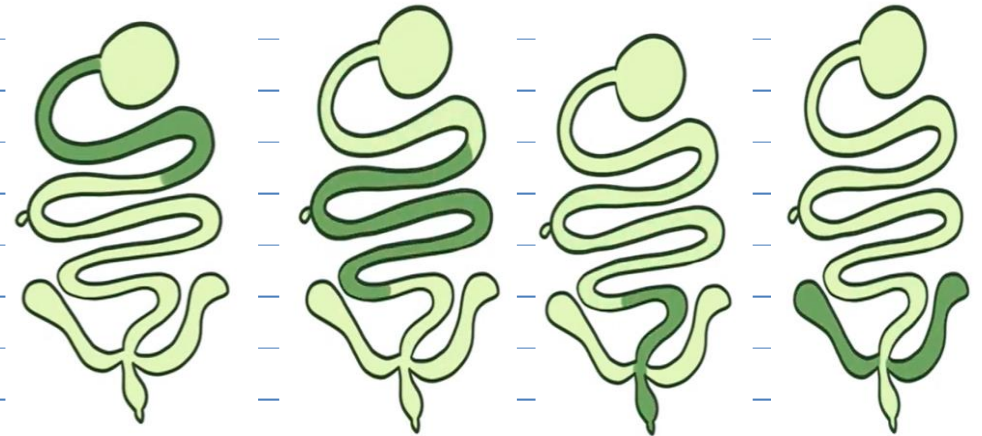
## The site of infection

- E. acervulina
- E. Mitis
- E. mivati
- E. Praecox
- E. hagani

- E. Maxima
- E. necatrix

E. brunetti

E. tenella



Intestine

## Clinical signs of coccidiosis

Sever diarrhea

Decrease feed and water consumption

Weight loss

Decrease growth rate

Decrease egg production

High mortality (death rate)

Necrotic enteritis, this caused by *Clostridium perfringens*



## Factors that effect on the development of disease

-Ineffective dose:

number of sporulated Oocysts ingested

-Environmental factors:

stocking density

size of the farm

quality of the litter

Ventilation system

presence of animals of different ages

anticoccidials

-Host factors:

Host genetics

concurrent disease

age

acquired immunity

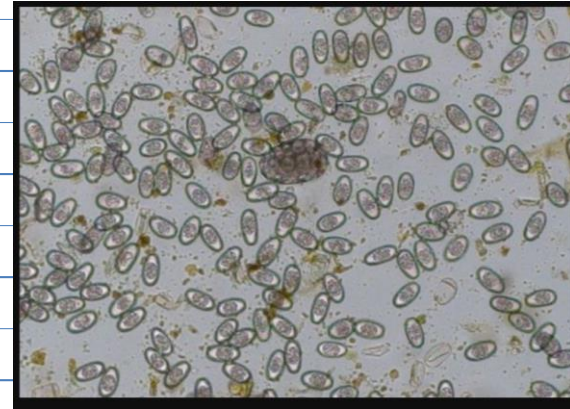
## Veterinary drug treat coccidiosis

Diclazuril is highly effective against a broad spectrum of coccidia. It is used mostly for prevention at 1 ppm in the feed.



## Eimeria diagnosis

Diagnosis is by fecal flotation to detect oocysts, often in combination with characteristic necropsy findings.



Fecal flotation: a routine veterinary test used to diagnose internal parasites or worms. The test detects the eggs of mature parasites that live inside the body and pass their eggs to the outside by shedding them into the host's stool



Depopulation involves ending the life of large numbers of animals due to emergency situations

Biosecurity refers to measures that are taken to stop the spread of harmful organisms to human and animal life

## Control

Cleaning and disinfection

Batch depopulation

Good ventilation

Biosecurity

Antibiotics: sometimes given to prevent secondary infections

