

# Animal health and food safety

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**One gram prevention is  
better than one ton  
treatment**

**Pay one pound in prevention is better than  
paying million in treatment**



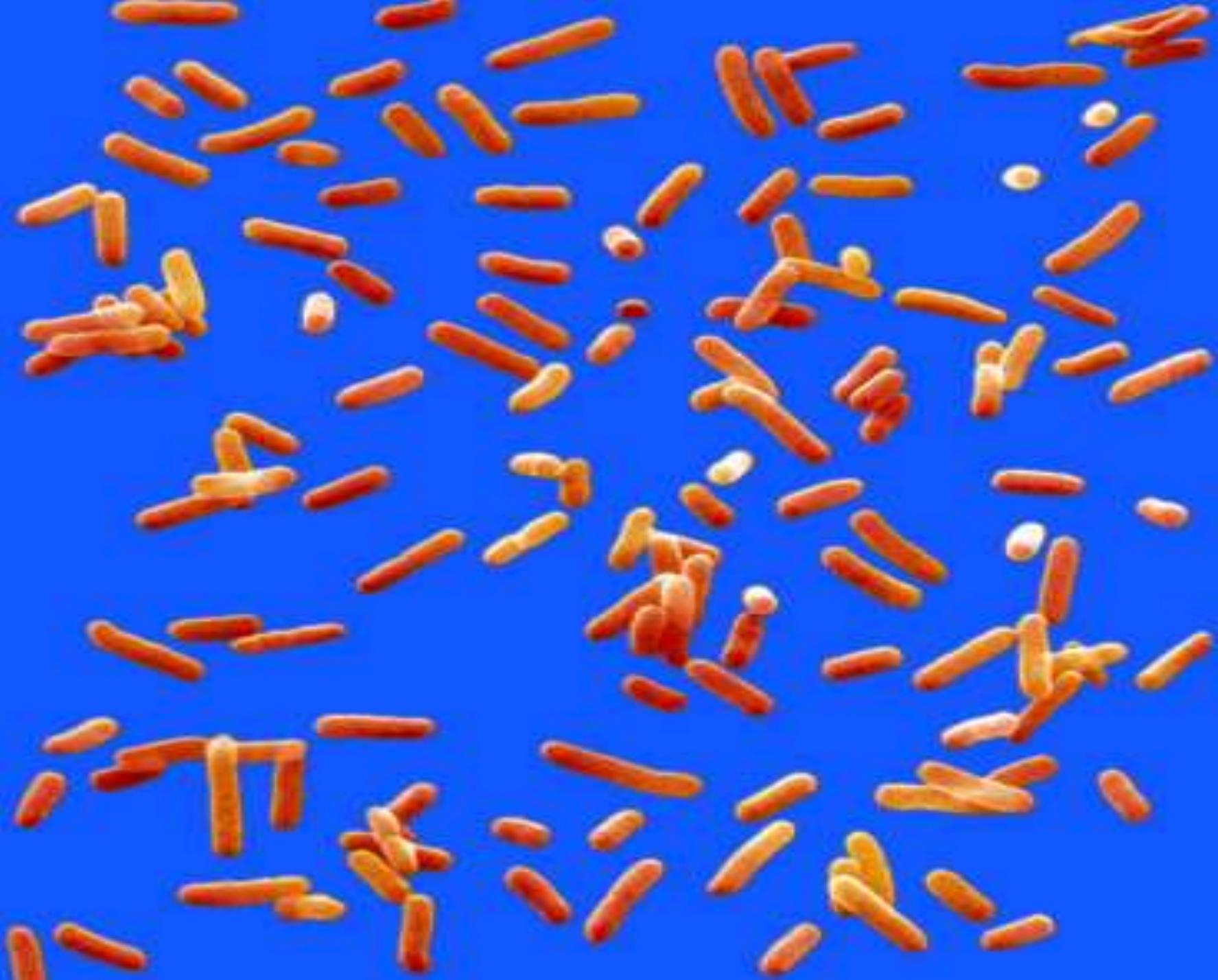
**Open abattoir close hospital**

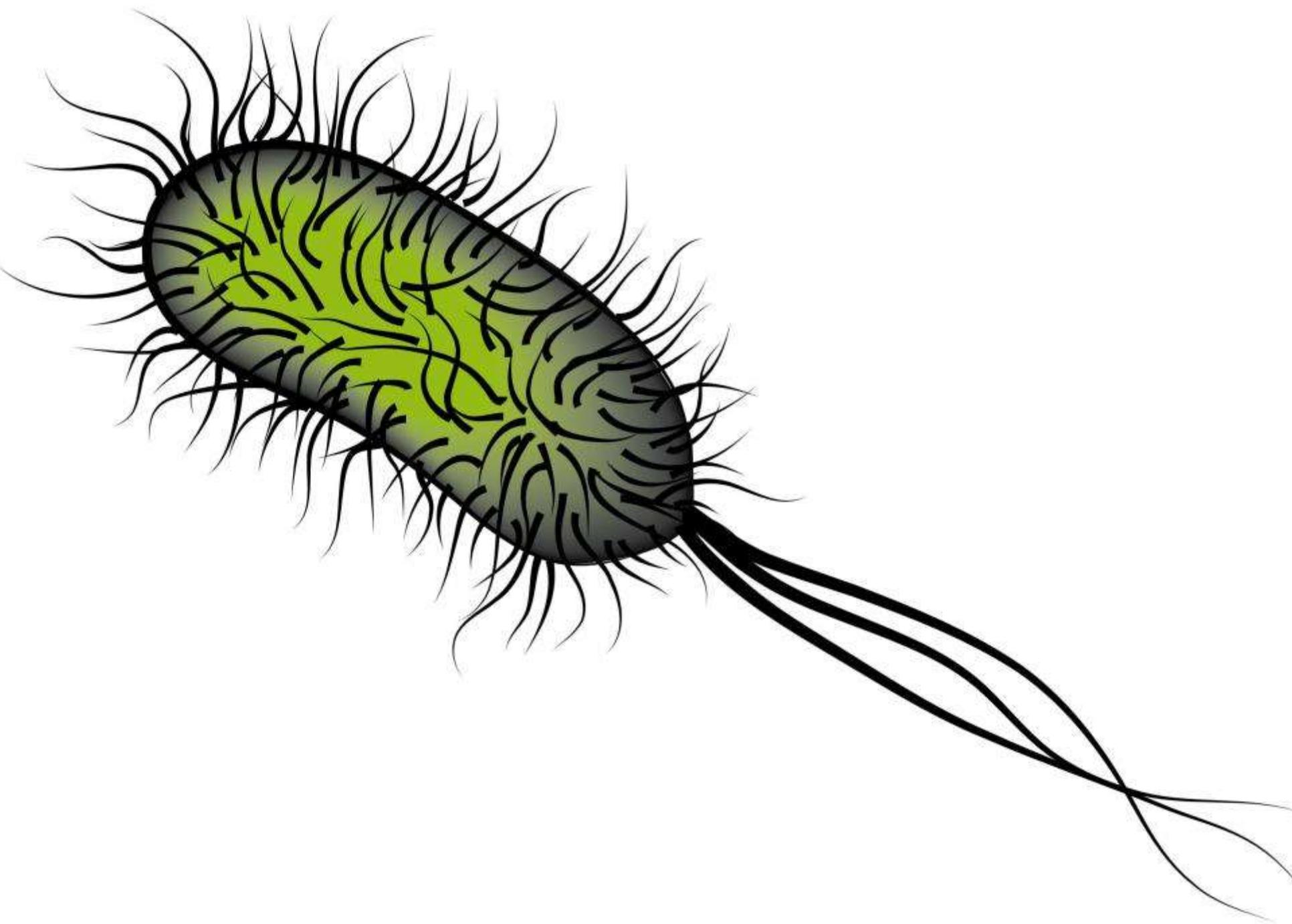
# Diseases

- Bacterial
- Viral
- Parasitic
- Chemical residues

# Bacterial diseases

- Tuberculosis
- Anthrax
- Salmonellosis
- Listeriosis
- Brucellosis
- E.coli







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# Viral diseases

- Foot and mouth disease
- Avian influenza
- Swine influenza







# **Parasitic diseases**

**A – Direct transmissible to man**

**B – Indirect transmissible to man**

**C – Not / or rarely transmissible to man**

# Parasitic diseases direct transmissible to man

- 1-Cysticercus bovis
- 2- cysicercus cellulose
- 3- Trichinella spiralis cyst
- 4-Hetrophyes hetrophyes
- 5-Opistherchois tenuicollis
- 6- Diphyllbothrium latum
- 7- Anaskiasis

# 1- *Taenia saginata* (Beef tapeworm)

- Lives in the small intestine of man
- Cyst called *Cysticercus bovis* , *Beef measels* or *cysticercus inermis*
- Cyst is rounded or oval in shape
- The cyst is found most commonly in cattle but occasionally in buffalo

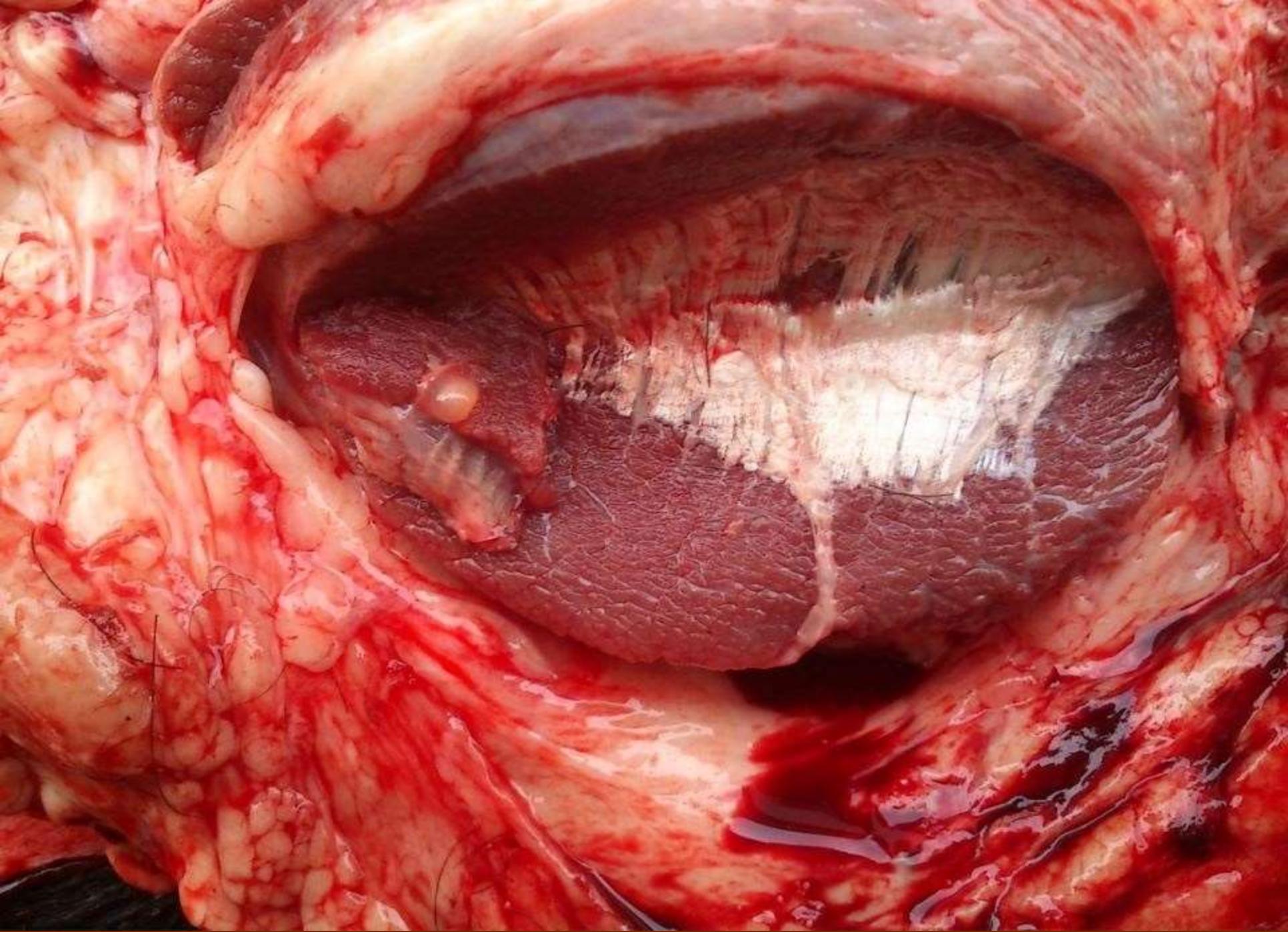
# Infestation system

- 1- Direct in undeveloped areas when animals are contact with humans in the same area. Ova may remain infective up to 6 monthes
- 2-indirect as by wild birds

# Location ( predilection site)

- Heart , tongue , masseter muscles, diaphragh , shoulder, hind quarter , oesophagus ,





# Control measures

- Improving meat inspection
- Prevention of cattle infection
- Treatment of infected persons.
- Use of modern method as ELISA for diagnosis of infected animals.
- Vaccination of cattle against C.bovis
- Thorough cooking of meat.

## *2- Pork tapeworm( taenia solium)*

- In the upper part of small intestine of man.
- Cestode.

# Pork measles ( *Cystidercus cellulosae* )

- The cyst is found more commonly in the pig.
- Size 1.6 x 0.9 cm
- The cyst may be present also in humans by  
A- ingestion of eggs  
B- retro[ristalsis movement of small intestine of man resulting in movement of eggs to the stomach hexacanth embryo release.
- Cyst may be present in brain and eye so called C.racemosus or proliferative cyst.

# Location

- Heart , diaphragm , tongue , neck thigh shoulder, intercostal, and abdominal muscles

# Trichinosis ,trichiniasis, trichinellosis , trichinellasis

- Disease caused by *Trichinella spiralis*
- Produce toxic products leads to myocarditis and fatal encephalitis
- Adult worm is found in the intestinal tract.
- The sexes are distinct , male 1.5 mm, female about 3 mm.
- It is found in pig, rat , mouse , dog and man

# Larvae

- Are found in muscular tissue ( intramuscle fiber) of the same host.
- The cyst is lemon shaped containing coiled larva. It is parallel to the longitudinal axis of muscle fiber, near the tendon.
- Location : in pig pillars of diaphragm, muscles of tongue , larynx and the abdominal and intercostal muscles

# Methods of detection

- Trichinoscope

# Infection in man

- Man become infected by ingestion of raw or undercooked trichinosed flesh

# Fish parasites transmissible to man

## *Opistherchois tenuicollis* (*O.felineus*)

- It is a trematode lives in the bile duct and pancreatic duct of dog ,cat, fox, pig and man. It measures 18 mm x 3mm
- Encysted metacercaria present in fish at the base of the fins

# Life cycle

- 1<sup>st</sup> intermediate host snail
- 2<sup>nd</sup> intermediate host fish
- *Containing encysted meycercaria*

# *Hetrophyes hetrophyes*

- Very small trematode in the small intestine of dog , cat , fox , and man
- with a size 1.7 mm x 0.7 mm

# Life cycle

- 1<sup>st</sup> intermediate host snail
- 2<sup>nd</sup> fish (*Mugile cephalus*, *Tilapia nilotica*)
- *Containing encysted meyacercaria*

# *Diphyllobothrium latum*

- It is a cestode , Occures in the small intestine of man, dog , cat and fox with a length 2--20 meter

# Life cycle

- 1<sup>st</sup> intermediate host cyclope
- 2<sup>nd</sup> intermediate host fish ( as Eel) containing pleurocercoid.
- In the caviar or liver

# 7- Anaskiasis

- Nematode
- It is found in Japan, the Netherland and USA.
- Definitive hosts are marine mammals.
- In Europe the disease called herring worm disease.
- In human cases :
  - in europe involved intestine
  - In Japan involved both gastric and intestinal infection..It is found in Japan due to eating raw fish is a traditional way of life

# Parasitic diseases indirect transmissible to man

- Hydatid cyst

# Echinococcosis

- Caused by *Echinococcus granulosus*
- Cestode ,Found in the small intestine of dog.
- Cyst called hydatid cyst
- Hydatid cyst is present in food animals and man

# Structure of hydatid cyst

- External cuticular membrane
- Internal germinal layer, small papillae from which broad capsule attached by short pedicle or stalk
- Vesicular fluid
- Daughter cyst appear as a projection from the broad capsule

# Shape of hydatid cyst

- Oval or spherical
- Size from pin head to child's head

# Chemical residues

- Pesticides
- Heavy metals
- Hormones
- Antibiotics
- Food additives

*Thank you*

