

# Diseases 1

# Lungs

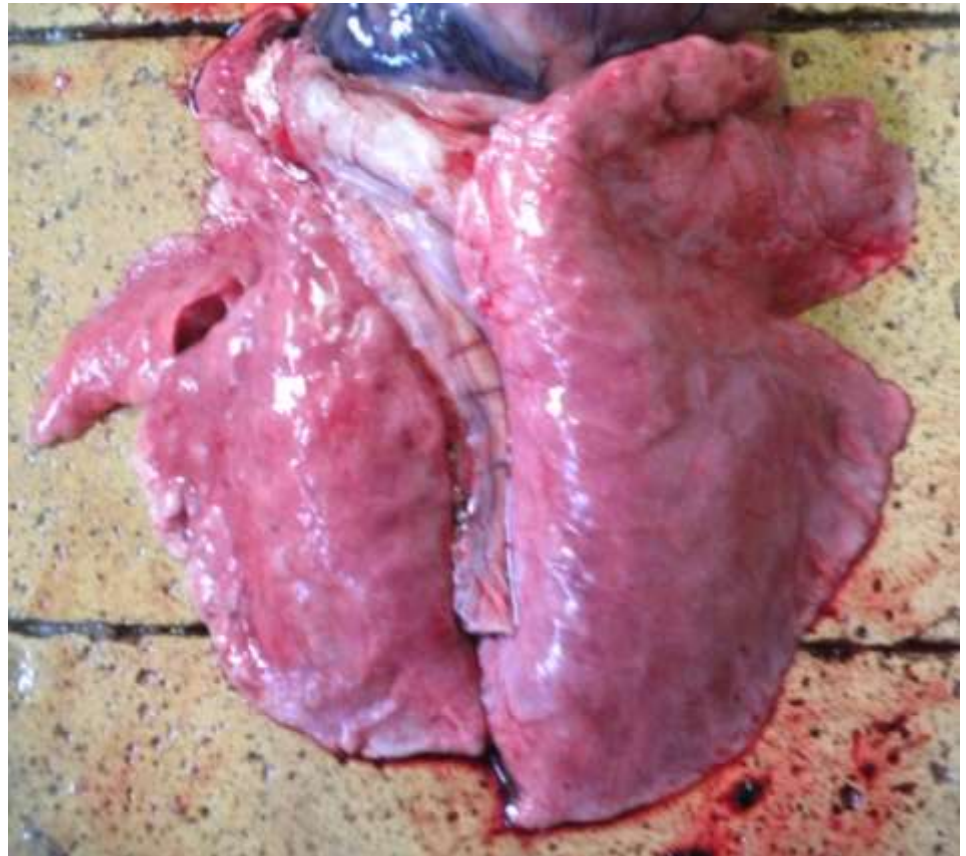


- ▶ Normal lung
- ▶ Virus infection
  - Influenza
  - PRRS
- ▶ *Mycoplasma hyopneumoniae*
- ▶ *Actinobacillus pleuropneumoniae*
- ▶ Not always easy

# Normal lung



- ▶ Remember that normal lungs have variable colors
- ▶ Use your fingers to find disease
  - Soft

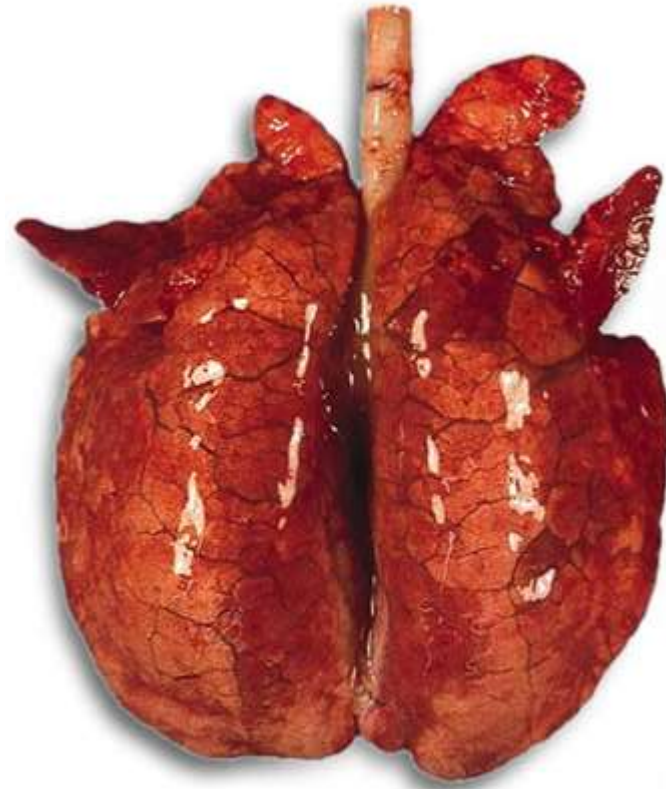
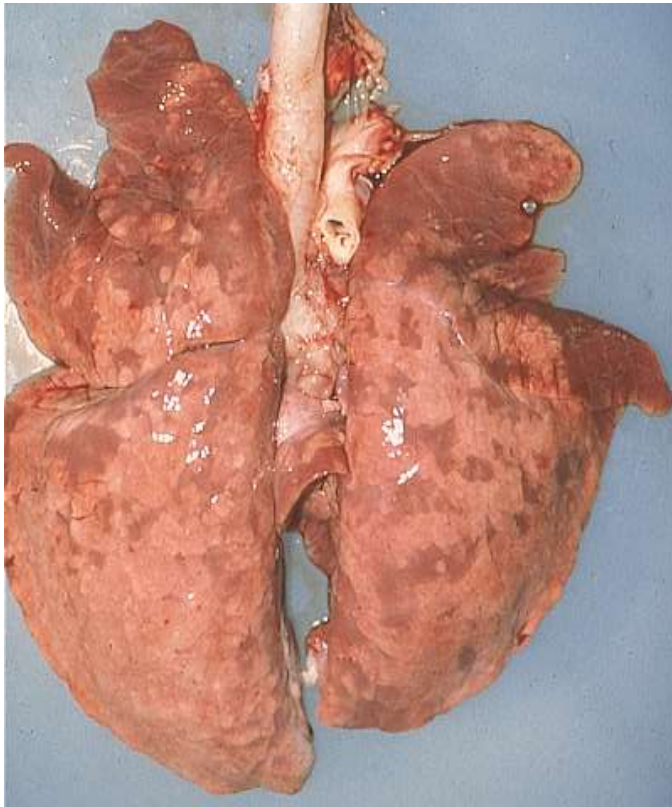


Årsmøde Vet-Team 14.11.17

# Virus infection in lungs



- ▶ Autopsy findings



# Virus infection in lungs



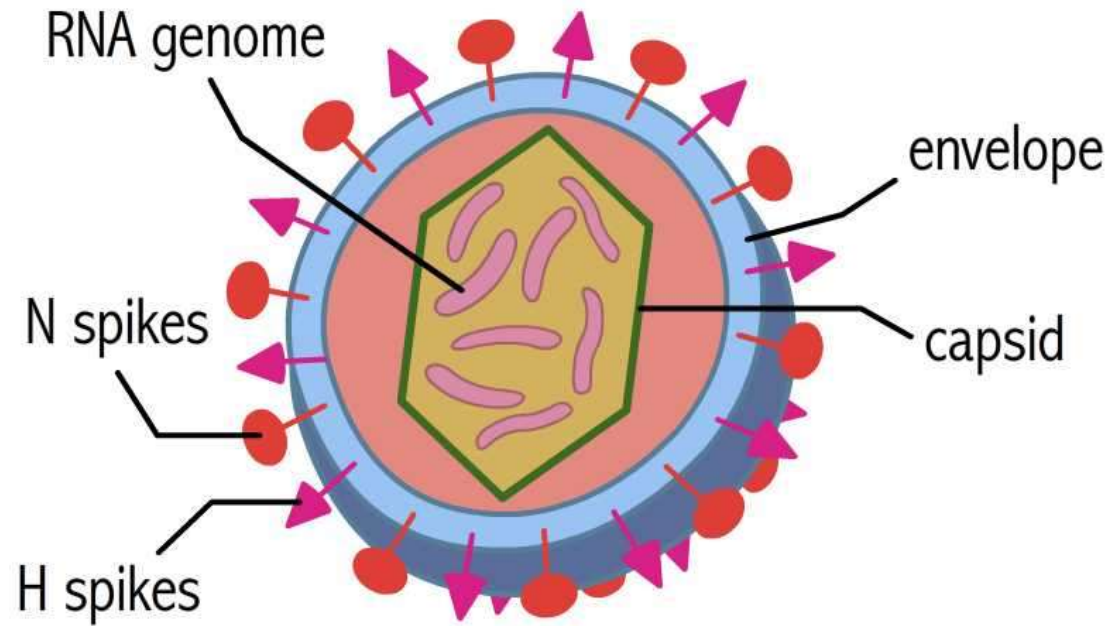
## ▶ Autopsy findings

- Heavy
- "Non collapsed"
- Fluid in between lobuli
  
- OBS: Secondary infections make it more difficult to make the right diagnose by autopsy

# Influenza



- ▶ Explained by Gerben Hoornenborg



Human influenza virus

# PRRS



- ▶ Short for Porcin Reproductive and Respiratory Syndrome
  - Caused by PRRS virus
  - Two types
    - PRRS EU/DK, type 1
    - PRRS Vac/US, type 2
  - PRRS–virus has a particular affinity for the macrophages particularly lung macrophages.
    - Virus multiplies in macrophages and kill them
    - Lower amount of macrophaes decreases the pigs defense against other bacteria or virus

# PRRS



## ▶ Symptoms

- Differ from farm to farm
- Sow herds
  - Lack of appetite
  - Fever
  - Low or ceased milk production
  - Abortions or early farrowings
  - Diarrhea and increased mortality in piglets



# PRRS



## ▶ Symptoms

### ◦ Finishers

- Increase in respiratory disease
- Co-infection (low health status) causes more severe disease
- Wasting

# PRRS



## ▶ Diagnosis

- Blood samples
  - Maternal antibodies until 12 weeks/30 kg
  - No export from farms that are virus positive – but possible for farms with positive antibodies
- Saliva test
  - A lot of pigs tested easy
  - Not possible to find antibodies only virus

# PRRS



- ▶ What to do?
  - McRebel management
    - Management rules to prevent spread of virus
  - Vaccination
    - Blitz – all animals/ all sows are vaccinated
    - Vaccination of new breeding animals (gilts)
      - To prevent new breeding animals excrete virus

# Mycoplasma hyopneumoniae



- ▶ Also called "Enzootic pneumonia"
  - Caused by a bacteria
  - Infection in the upper / frontal parts of lungs
  - Transmission by droplets, often by contact between pigs
  - Attaches to the cilia in the airways
    - > loss of cilia and excessive production of mucous
    - > making the respiratory tract more susceptible to opportunistic infections

# Mycoplasma hyopneumoniae



- ▶ Autopsy findings
  - Firm collapsed front part of the lung



# Mycoplasma hyopneumoniae



## ▶ Symptoms

- Mild chronic pneumonia with a non-productive cough
- Rough hair coat
- Reduced growth rate and feed efficiency

# Mycoplasma hyopneumoniae



## ▶ Diagnosis

- Blood samples
  - Antibodies or bacteria
  - Maternal antibodies 10 weeks
- Slaughter house evaluation of lungs
  - Estimate on amount of lungs with changes
  - Estimate on percentage of affected tissue per lung
    - Estimated 2,3– 4,3 g decreased daily gain per percentage of affected lung tissue – more if secondary infections

# Mycoplasma hyopneumoniae



- ▶ What do we do?
  - Prevent spread from old to young pigs
  - Vaccination
    - 20–25 % of Danish pigs are vaccinated



# Actinobacillus pleuropneumoniae



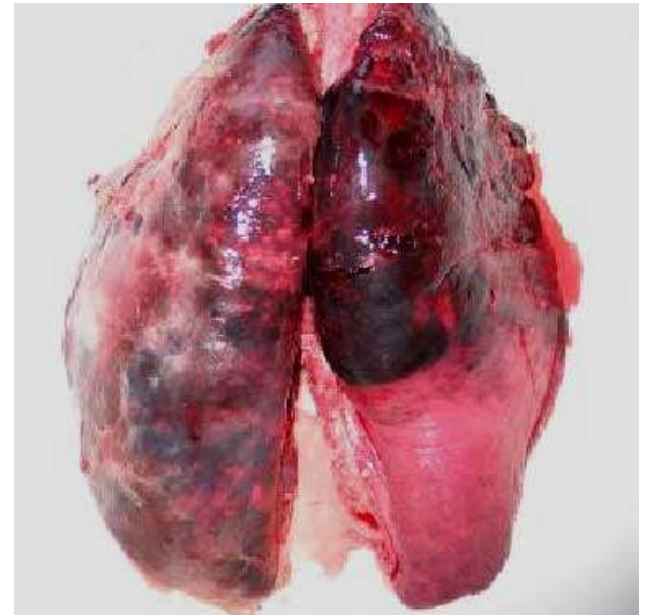
- ▶ Malignant pneumonia
  - Caused by a bacteria
  - 15 types – 10 types found in DK
  - Severity of disease depend on App type
  - Infection in the lower parts of lungs
  - Transmission by droplets, often by contact between pigs
  - Incubation period is very short (hours to 2–3 days)
  - App bacteria produce toxin in the lung → dark necrotic lesions

# Actinobacillus pleuropneumoniae



## ▶ Autopsy findings

- The lesions in the lung are very characteristic with large red-blue firm areas in the lower part of the lung with an overlying pleurisy
- Chest cavity often filled with fluid



# Actinobacillus pleuropneumoniae



## ▶ Autopsy findings



- Pleurisy is a white, dry film often attaching the lung to ribs.
- Pleurisy makes the lung look dry

# Actinobacillus pleuropneumoniae



## ▶ Symptoms

- Sudden death – blood and froth discharged from the nose
- Cough (chronic stage)
- Severe breathing difficulties– abdominal breathing and blueing of the ears
- Badly affected pigs are severely depressed.
- Body temperature is often high
  
- Other infection as *M. hyopneumoniae*, influenza or PRRS increase the symptoms

# Actinobacillus pleuropneumoniae



## ▶ Diagnosis

- Blood samples
  - Maternal antibodies until 16 weeks
- Isolation and culture of bacteria from lungs

# Actinobacillus pleuropneumoniae

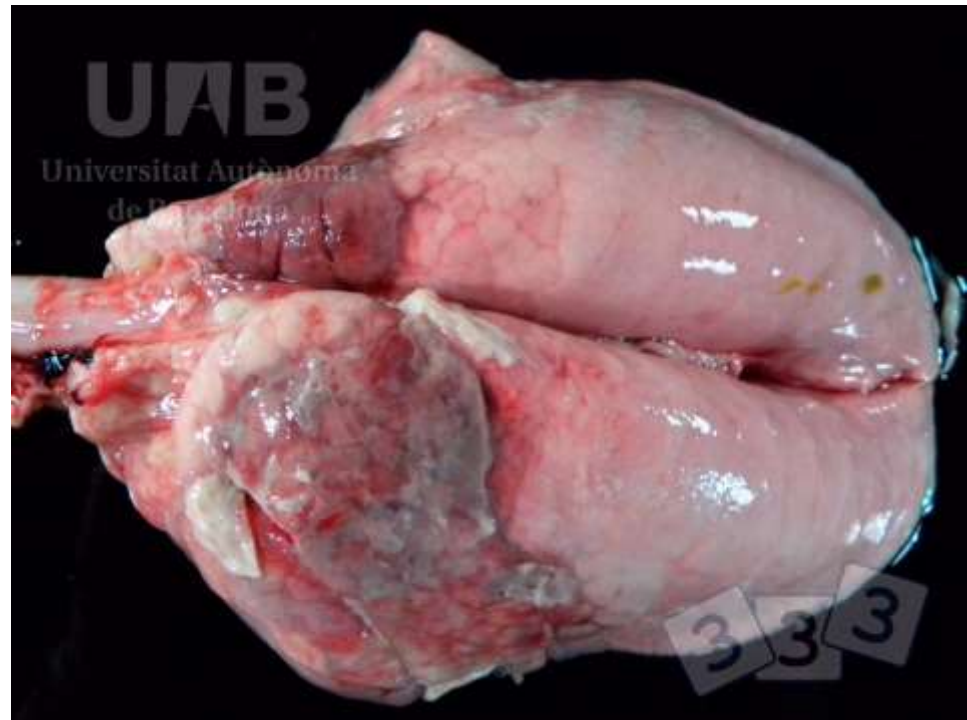


- ▶ What do we do?
  - Prevent spread from old to young pigs
  - Vaccination
    - If a farm is infected with both *M. hyopneumoniae* and *A. pleuropneumoniae* often vaccination against *M. hyopneumoniae* is the first choice
  - Acute infections needs treatment

# Not always easy!



- ▶ *Bordetella bronchiseptica* in suckling pig
  - Look like *A. pleuropneumoniae*



# Not always easy!



- ▶ Haemophilus parasuis (Glässer)
- Look like A. pleuropneumonia
  - Often we find fibrin on other organs as well





# Not always easy!



- ▶ **Streptococcus suis**
  - Fluid in breast cavity, pleurisy
  - Look like *A. pleuropneumonia*



# Just do it!



- ▶ Start doing autopsies on dead pigs
  - Practice makes perfect → knowledge can save other pigs
  - Send pictures to the veterinarian
  
- A lot of pictures on the internet
  - <https://www.pig333.com/pathology-atlas/>