



BACTERIAL DISEASES I



FURUNCULOSIS

- **Agent:** *Aeromonas salmonicida*
- Seen in Salmonids
- **Culture:** skin lesions, blood or kidney
- **Epizootiology:** All parts of world except Australasia



FURUNCULOSIS

- **Gross pathological signs :**
- **Furuncles (or boils)** involving skin and/or muscle, progressing to crater lesions (usually in adult salmon)
- Furuncles are raised, dark tumefactions, which ulcerate to release clear blood-stained fluid into the water

(Australian Government, Department of Agriculture, Fisheries and Forestry)



FURUNCULOSIS

- **Haemorrhages** on the skin, mouth and fin bases
- Darkening of body color and pale gills
- **Bloody** discharge from nares and/or vent
- Exophthalmos
- **Haemorrhages** in muscle and internal organs
- Enlarged spleen and focal necrosis of the liver
- Death without any clinical signs other than darkening of the skin, which can occur in peracute infections in juvenile salmon.
(Australian Government, Department of Agriculture, Fisheries and Forestry)



FURUNCULOSIS

- **Microscopical findings:**
- Histopathologically furuncles;
 - Early response: hyperemia, fibrinous edema in dermis and/or hypodermis, macrophages and leucocytes
 - Liquefactive necrosis of center of the lesion with fibrin deposition
- fusion of gill lamellae, with necrosis of the epithelium
- inflammatory changes in gills
- bacterial colonies in tissues



FURUNCULOSIS

- fusion of gill lamellae, with necrosis of the epithelium
- inflammatory changes in gills
- bacterial colonies in tissues



FURUNCULOSIS

- **Control/ Treatment**
- The disease is controlled on farms by medication or vaccination.
Terramycin(oxytetracycline), Sulfamerazine
- Iodine is also used to decontaminate the surface of fertilised eggs to prevent vertical transmission (passage of infection from parent to offspring).

VIBRIOSIS

- The disease characterized by septicemia, dermal ulceration, ascitis and haematopiotic necrosis.
- One of the oldest recognized infectious disease of fish. **Red pest of eels** was described in 1904.





VIBRIOSIS

- **Agent:** *Vibrio anguillarum*
- **Epizootiology:** is disease of cultered and wild marine fish in salt or brackish water. Occurs in shallow waters in late summer when temperatures are high.



VIBRIOSIS

- Gross pathological signs :
- Anorexia, Darkening, Sudden death
- Periorbital/abdominal dropsy (young fish)
- Swollen, dark, skin lesions which ulcerate to release **blood-colored** exudate. Ulcers may deep and necrotic.



VIBRIOSIS

- Enlargement and liq. necrosis of spleen (+kidney)
- **Focal haemorrhages** on the surface of heart, gills and liver
- **Petecchiation** of peritoneum.
- In chronically, skin lesions may organize and become granulomatous



VIBRIOSIS

- **Microscopical findings:**
- Skin lesions comprise *acute hypodermal inflammatory foci* extending deep into the muscle.
- They eventually **ulcerate**.
- *Severe necrosis* of **internal organs**.



VIBRIOSIS

- **Control/ Treatment**
- *Vibrio* vaccines are now available
- Antibiotic therapy can be used for treatment
 - Oxytetracycline
 - Sulphonamides
 - Nitrofurans,...



COLUMNARIS DISEASE

- **Agent:** *Flavobacterium columnare*
- Seen in Salmonids
- **Epizootiology:** reported worldwide and most species of fresh-water
- Disease has also been described as “**saddleback**” disease due to *the development of areas of grey discoloration around the base of the dorsel fin.*



COLUMNARIS DISEASE

- **Gross pathological signs :**
- Lesions are usually located in the skin of the head, back and gills
- They begin as raised whitish plaques with reddish zone of hyperemia around the periphery .
- On the gills the lesions are often necrotic.
- On the skin they develop into haemorrhagic ulcers.



Control/ Treatment

- Environmental improvement, for example increased oxygenation, control of organic addition to the water and reduction of water temperature, are important for supportive therapy. Antibiotic treatment is very difficult as affected fish rarely feed.