

**AF 1101 (1/12:06)**

**Farm Animal Health Management  
Major Diseases, Outbreaks and  
Prevention of Diseases**



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# Disease

- A disease is a particular abnormal, pathological condition that affects a part or all of an organism
- Associated with specific symptoms and signs
- A disease can be,
  - Communicable/Transmissible
  - Non-communicable

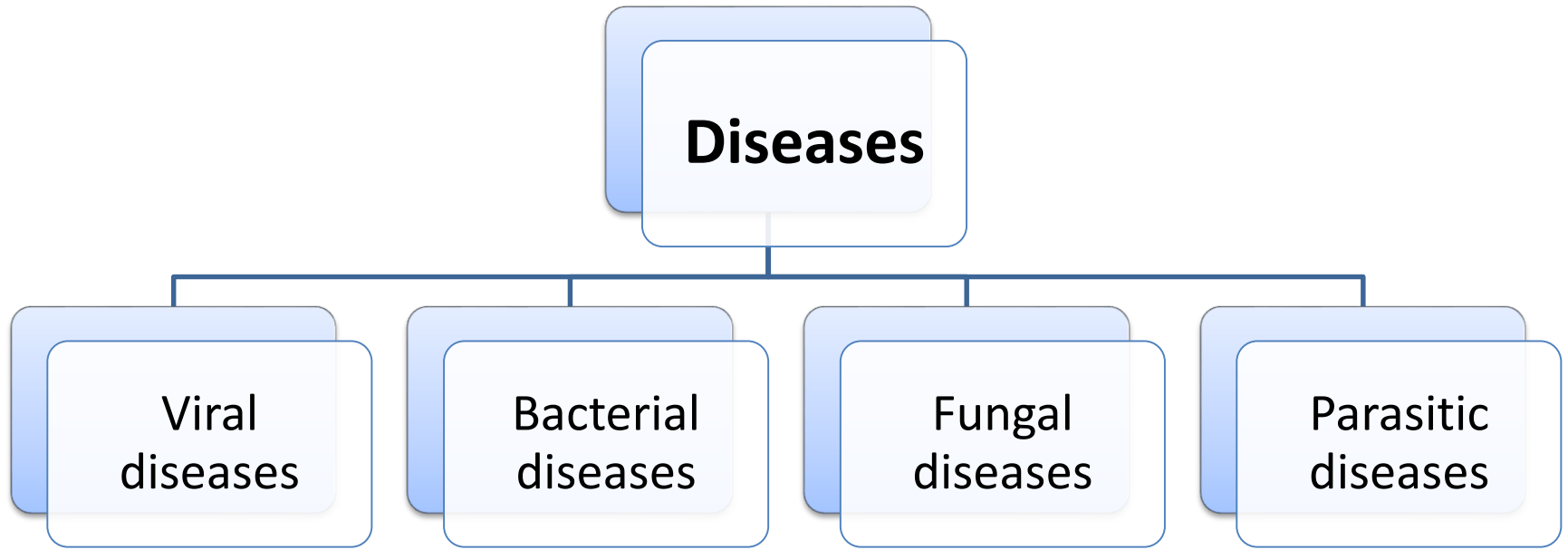
# Why is it important to keep animals healthy?

- Unhealthy animals cost money!!
- Millions of Rupees/dollars are spent every year on keeping animals healthy.
- PROFITABILITY!!

# Classification of Diseases

- Four types of diseases ;
  1. Pathogenic disease
  2. Deficiency disease
  3. Hereditary disease
  4. Physiological disease

- Pathogenic diseases can be categorized as ;



# Viral Diseases

- Viruses spread
  - Directly by contact
  - Indirectly through vectors
- For certain diseases, animals recovered from a disease act as carriers
  - They harbour the virus in their system without showing symptoms
  - Ex : Fowl pox  
Foot and mouth disease

# Bacterial Diseases

- Not all the bacteria are pathogenic or disease producing
- Some essential properties of a pathogenic organism to produce disease are,
  - Toxicity
  - Invasiveness
    - ability of microorganisms to enter the body and spread in the tissues

# Fungal Diseases

- Fungi are eukaryotes with a differentiated nucleus and rigid wall
- Approximately 1.5 million different species of fungi on Earth
- About 300 of those are known to make diseases
- Fungal diseases are often caused by fungi that are common in the environment
- Fungi live outdoors in soil and on plants and trees as well as on many indoor surfaces and on animal skin.
- Most fungi - not dangerous, but some types can be harmful to health.



# Parasitic Diseases

- A parasite is an organism, plant or animal, which lives upon or within another living organism at whose expense it obtains some advantage without compensation
- A parasite may live on
  - Outside the body - Ectoparasite
  - Inside the body - Endoparasite

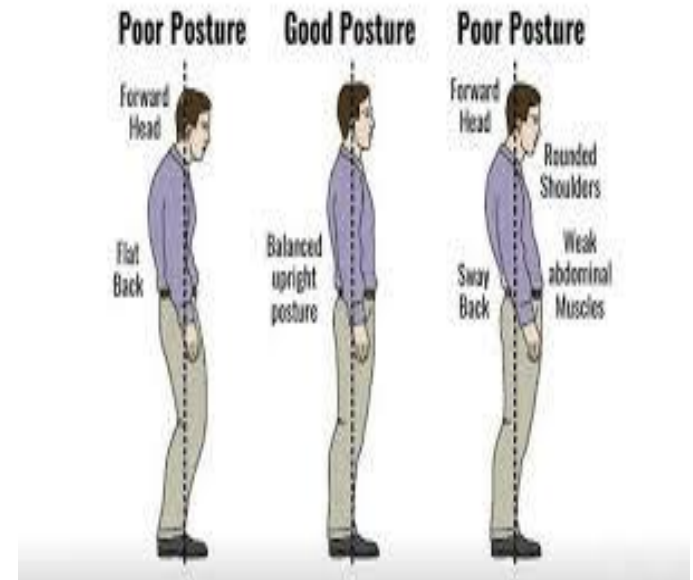


# How do we detect unhealthy animals?



# *Visual Signs*

- Body posture
- Off feed and water
- Isolated
- Sounds
- Trauma/distress



# *Non-visual signs*

- Temperature
- Pulse
- Respiration
- Blood types and counts
- Mucous membranes
- Tissue cultures

# Vital Signs

- Temperature
  - internal temperature of the animal taken with a thermometer
- Pulse
  - The heart rate of the animal, taken by pressing on the blood vessel.
- Respiration
  - the rise and fall of the body cavity, or breaths per minute.

# Normal Temperature, Pulse and Respiration

- Temperatures (<sup>0</sup>F) Among Different Animals

– Cat	101.5
– Cattle	101.5
– Horse	100.5
– Pig	102.0
– Rabbit	102.5
– Sheep	103.0

# Normal Temperature, Pulse and Respiration Continued

- **Pulse**

- When taking a pulse, count for 15 seconds and then multiply by four to get a full minute reading
- Ways to take human and some animal pulses include using: stethoscope, by hand on wrist or neck which contains a major artery

# Normal Temperature, Pulse and Respiration Continued

- Respiratory Rates Among Different Animals

**Animals:**

**Beats/minute:**

– Cat	26
– Cow	30
– Dog	22
– Horse	12
– Human	12



# Notifiable Animal Diseases

- Notifiable disease – any disease that is required by law to be reported to government authorities
- The collection of information allows the authorities to monitor the disease, and provides early warning of possible outbreaks
  - Foot and mouth disease

# Reasons for requiring notification of such animal Diseases

- Spread quickly
- Cause serious damage to the species
- Cannot be prevented or controlled by normal commercial methods
- A serious threat to public health

# Disease Outbreak

- The occurrence of causes of disease in excess of what would normally be expected in a defined community, geographical area or season
- An outbreak may occur in a restricted geographical area, or may extend over several countries
- It may last for a few days or weeks, or for several years

# Diseases.....

- Reduce growth rates
- Reduce reproductive rates
- Cause condemnation of carcasses
- Reduce milk production
- Reduce fleece weight, fiber diameter and staple strength
- Damage hides and fleece

# Disease Prevention

- Many diseases and disorders can be prevented through,
  - Sanitation
  - Proper nutrition
  - Adequate exercise
  - Vaccination
  - Health measures

# Major Livestock Diseases

## 1. Foot and mouth disease

- An infectious and sometimes fatal viral disease that affects hoofed animals
- Zoonotic disease
  - Ex : cattle, sheep, goat, pig



## Clinical signs

- High fever that declines rapidly after 2 or 3 days
- Blisters inside the mouth that lead to excessive secretion of saliva
- Blisters on the feet that may rupture and cause lameness



# Transmission

- Close contact of animal-to-animal
- Direct and indirect contact with infected animals and their secretions
- Saliva, blood, urine, faeces, milk and semen, aerosol droplet dispersion, infected animal by-products, Fodder and motor vehicles
- The clothes and skin of animal handlers
- Cows can catch from the semen of infected bull



# Prevention and Control

- Control the introduction of new animals to existing stock
- Control over access to livestock by people and equipment
- Maintain sanitation of livestock pens, buildings, vehicles and equipment
- Monitor and report illness
- Appropriate disposal of manure and dead carcasses

## 2. Mastitis

- An inflammation of the udder;
- Which causes destruction of mammary tissue, the passage of watery, flaky or stringy milk and then eventual formation of non-productive areas of scar tissue
- Two types :
  - I. Clinical mastitis
  - II. Sub clinical mastitis



## Predisposing factors to the infection

- Injury to teat and udder

It results lack of protective barriers

- Unsanitary barn or milking habits

Disease spread cow-to-cow through direct contact with contaminated milk, poorly cleaned milking cups or from the milker's hand

# Symptoms

## I. Clinical mastitis

- Udder- swollen, hard
- watery or clotted milk



## II. Sub clinical mastitis

- Abnormal secretion of milk
- Swelling of infected quarter



# Control

- Clean milk production
  - Milking order - animals diagnosed positive should be milked at last
  - Milkers must wash hands before milking
  - Clean cloth should be used to wash the udder with a disinfectant
- Intra mammary infusion
  - Clinical - strip cup test
  - Sub clinical - California Mastitis Test (CMT)



### 3. Brucellosis

- Among cattle and buffaloes
- Heavy economic losses due to abortions in late pregnancy and reduction in milk production
- Zoonotic disease

#### Causative organisms

- ✘ *Brucella abortus*
- ✘ *Brucella suis*
- ✘ *Brucella melitensis*

## 4. Salmonellosis

### Causal organism

- ✘ *Salmonella* spp. - intestinal pathogen
- Adult birds are symptomless carriers
- Infected animals excrete organisms in the faeces, contaminate the environment
- Infected ovaries carry the organisms in yolk

# Symptoms

- Loss of appetite and thirst
- Drooping of wings and ruffled feathers
- Diarrhea
- Lowered egg production
- Dead chicks - yellowish liver with hemorrhages



## 5. Swine fever

- Also known as “Hog cholera”
- Highly infectious viral disease
- All excretions, secretion and body tissues of the affected pig contain the virus



# Symptoms

- Fever
- Loss of appetite
- Dullness and anorexia
- Initially hogs may be constipated, but during the disease, accompanied by diarrhea



# Treatment, Prevention and Control

- Vaccination
- Animals that recover from swine fever have a long lasting immunity

## 6. Mange

- A parasitic disease of the skin caused by mites
- *Sarcoptes scabiei* or *Demodex phylloides*



## 7. Bird flu, or avian influenza, is a viral infection spread from **bird to bird**.

- Currently, a particularly deadly strain of **bird flu**
- H5N1 is a highly pathogenic **avian influenza (HPAI)** virus. It's deadly to most **birds**.

### Bird flu and danger to humans

Bird flu, or avian flu, has a high mortality rate in humans, but as of yet, can ~~not~~ be transmitted from person to person. ... WHO, February 20th, 2006: "Human infections remain a rare event."

#### Infection with type A virus H5N1

**1** Most virulent bird flu virus; mutates rapidly, altering its genetic material

**2** Humans infected by close contact with live infected poultry

**3** Birds carry virus and excrete it in feces, which dries, becomes pulverized and then can be inhaled or taken in by touch

**4** Humans have no immunity against this virus

#### Reason for concern

Humans infected with bird flu could serve as a host for a new genetic subtype that can be transmitted from person to person

#### Symptoms

Similar to common influenza

Virus

Fatigue  
Fever  
Conjunctivitis

Sore throat

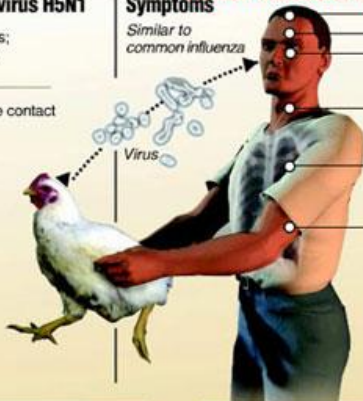
Cough

Muscle aches

#### When untreated

Rapid deterioration; viral pneumonia leading to respiratory distress, kidney failure, multi-organ failure, death

Might start influenza pandemic



## 8. Fowl cholera

- a contagious, bacterial disease
- sudden onset with high mortality
- *Pasteurella multocida*, the causal agent
- Enlargement of the liver and spleen



## 9. Fowl pox

- A slow-spreading viral infection
- Lesions in the skin that progress to thick scabs (cutaneous form) and by lesions in the upper GI and respiratory tracts



## 10. Coccidiosis

- Bloody diarrhea
- Mucus secretion from mouth
- Sudden death

