

A Field Manual of Animal Diseases by Syndromes

with emphasis on

Transboundary Animal Diseases



2nd Edition

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AU-IBAR / USDA-FAS /
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A Field Manual of Animal Diseases by Syndromes

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■ **NOTE:** *in this manual, the red squares symbolize a disease-causing agent, which can be a virus or bacteria*



INTRODUCTION

Healthy animals and healthy people contribute to stable and productive economies and societies everywhere.

The livestock industry of Africa is a vital component of the economy in every region. At the village level, animal production supplies valuable dietary animal protein and drives the microeconomy. At the national level, countries benefit economically from the export of all types of livestock. Ensuring the health of livestock is critical.

TRANSBOUNDARY ANIMAL DISEASES are highly significant because they are capable of severe impact and rapid spread far beyond the initial outbreak. These diseases, which cause sickness and death to animals, rob communities of valuable animal source food and cash resources. They might also lead to national trade restrictions which can cripple the economy of a country.

Some transboundary animal diseases cause additional harm as they also are ZOONOTIC DISEASES which can be transmitted from animals to humans.

National veterinary services strive to keep track of transboundary animal diseases and control them. Recognizing and reporting the suspicion of a transboundary animal disease as soon as possible is essential so that governments and livestock

SYNDROMIC SURVEILLANCE

owners can implement controls before further spread. This will also help improve livelihoods throughout the region.

In this book we have presented transboundary animal diseases in a basic pictorial format. We hope this helps everyone associated with animals to recognize these diseases so they can participate in the system of reporting them.

We recognize that within the communities of livestock producers there is an immense resource of knowledge about animal husbandry and management, and additionally about livestock diseases. Herders and farmers, truckers, marketers, butchers, processors, and others whose livelihoods are associated with livestock can become part of this system of recognizing and reporting transboundary animal diseases.

Please use this book to further your knowledge about identifying and describing diseases so you can report them to your nearest local or national veterinary official. The sooner a transboundary animal disease is confirmed, the easier and cheaper it is to control it, and that is to the benefit of everyone.

Our goal is to help everyone work together whenever possible to contain harmful diseases.


HOW TO FIND WHAT YOU NEED IN THIS BOOK


 If you see sick or dead poultry, go to the
POULTRY SECTION (ND and HPAI)

 If you see sick or dead pigs, go to the
SWINE SECTION (ASF)

 **SECTION FOR ALL OTHER ANIMALS –
SHEEP, GOATS, CATTLE, and HORSES**


 If you see diarrhea - *Go to:* PPR

 If you see respiratory problems - *Go to:*
PPR, CCPP, CBPP, Heartwater, ECF, AHS

 If you see mouth or foot lesions - *Go to:* FMD

 If you see skin disease - *Go to:* SP, GP, LSD

 If you see abortion - *Go to:* RVF, Brucellosis

 **FOR ENDEMIC DISEASES OF CONCERN –**
Go to: Trypanosomiasis, Rabies

BIOSECURITY

Biosecurity means taking steps to prevent your animals from catching disease. These steps are commonly used in countries around the world and they should be used all the time.

The main concept is to keep your herds and flocks isolated from people, animals, and objects which may be capable of transmitting disease. Most of the time there is no way to tell if an object, person, or animal is carrying a disease.

For instance, if you visit another producer and your footwear has feces from other animals, even you may be bringing disease-causing agents back to your own animals. The same is true for everyone else.

And, if you bring a new animal to your herd or flock, there's no way to know if the new animal is carrying a disease – so you must keep the new animal isolated from your healthy animals for a period until you are sure this new animal is healthy.

All producers should become familiar with the biosecurity procedures for their herds and flocks. The following page features the five main steps for biosecurity, which we call **The Stop-and-Go Rules**. These are very important and should be followed every single day.



The **STOP-and-GO RULES** for BIOSECURITY

If you follow the
STOP-and-GO RULES for your animals,
you will keep them healthy and
STOP bad diseases from coming.

Separate sick animals from healthy ones right away
Take off your footwear & clean them after travelling
Only people you know should come near your animals
Protect your tools, equipment, & trucks — If you lend
them, clean them thoroughly when returned

❖ *and* ❖

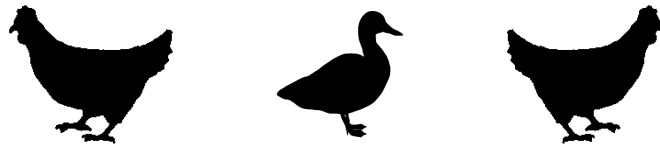
GO from healthy animals and then to sick animals
when you are attending to them as the sick
animals may be shedding a disease which you
could take to the healthy ones

POULTRY SECTION



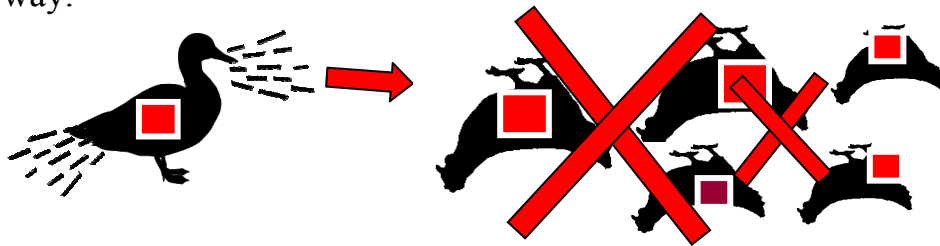
1. HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)

◆ *A Transboundary Animal Disease* ◆



How do they get it?

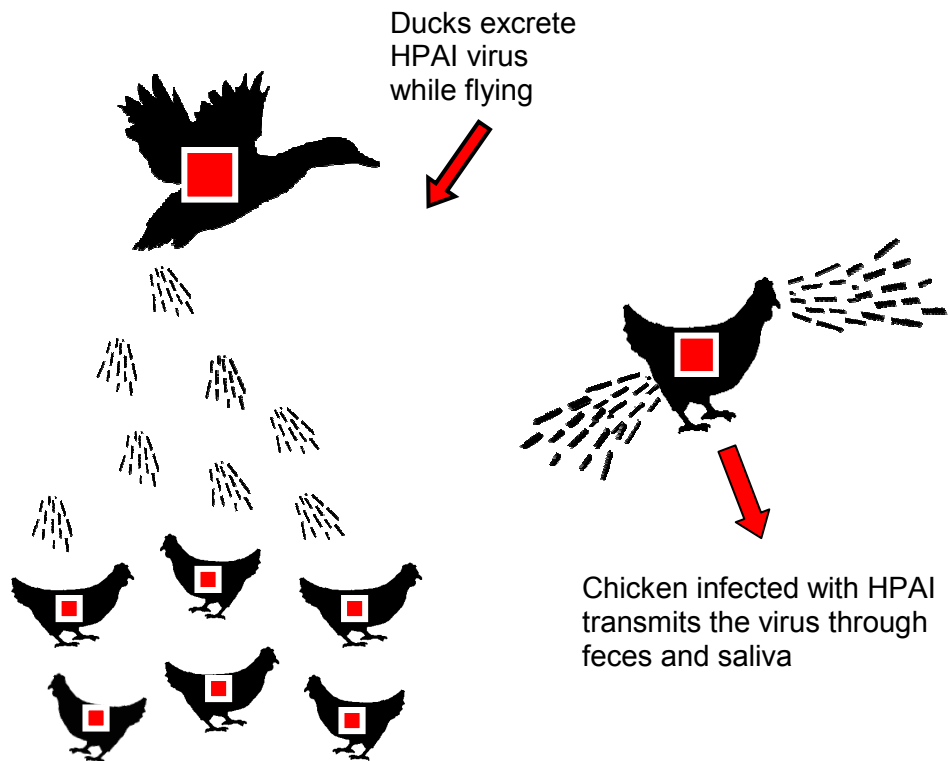
Feces or saliva have the virus so other birds can get it that way.



REMEMBER, in this manual, the red squares symbolize a disease-causing agent, which can be a virus or bacteria.

SYNDROMIC SURVEILLANCE

Infected birds, including flying ducks, will easily spread HPAI virus to other birds.



SYNDROMIC SURVEILLANCE

How many animals in the flock will be affected?

Most of the birds will be infected.

Will they die?

Almost all infected birds will die.



Viruses are easily spread at live bird markets. Humans spread the viruses from flock-to-flock or village-to-village by transporting infected birds, contaminated equipment, cages, footwear, clothing, egg trays, feed trucks, and personnel.



All of the materials in contact with the infected chickens could have virus -- so it is important to clean the cages and the trucks and the tools to keep from spreading the disease.

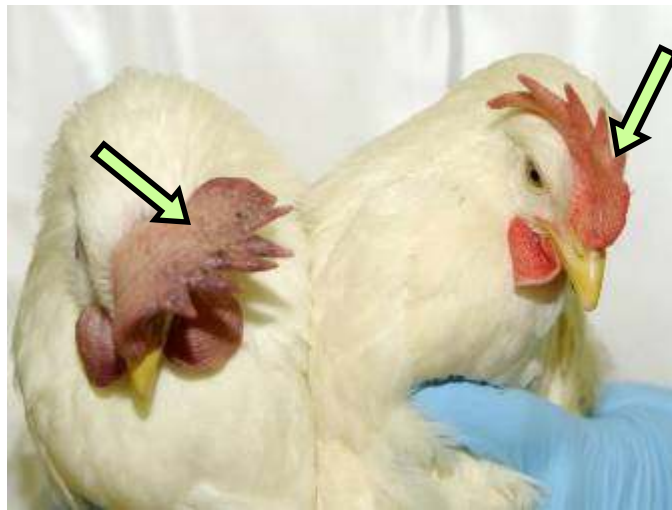
SICK BIRDS (HPAI)

Most frequently, the first sign of disease is sudden death in large numbers of birds.

Combs and wattles may be swollen and purple.

LEFT-
The infected chicken has a comb that has become partly blue

RIGHT-
On the right is a healthy chicken with a red comb



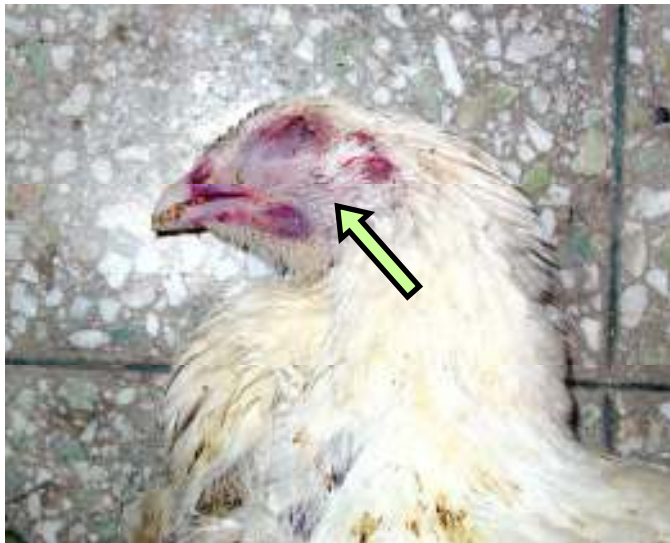
SYNDROMIC SURVEILLANCE

...signs of HPAI

The legs can have red streaks – this is bleeding under the skin



Blue areas in the skin of the head of a broiler (cyanosis)



SYNDROMIC SURVEILLANCE

...signs of HPAI

This infected rooster has a blue/purple comb



Swollen head tissues



<<<< >>>>

CAUTION REGARDING DEAD BIRDS!

*On the following pages we have photos of
dead birds with HPAI.*

Caution is required when opening a carcass if
clinical signs are noted, as some of these HPAI
viruses can infect humans.

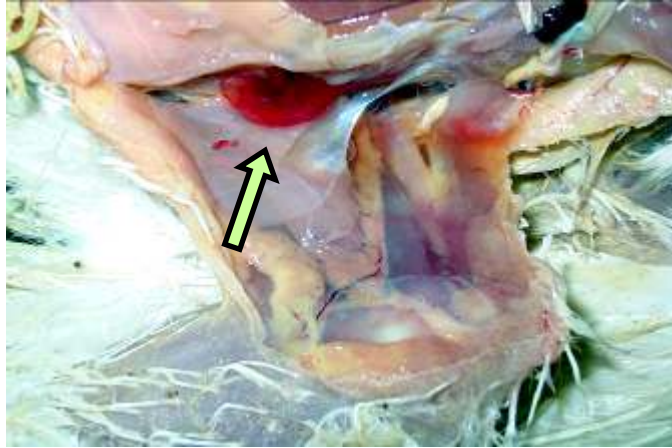
DEAD BIRDS (HPAI)

Fluid within the
neck tissues,
very
characteristic
of HPAI

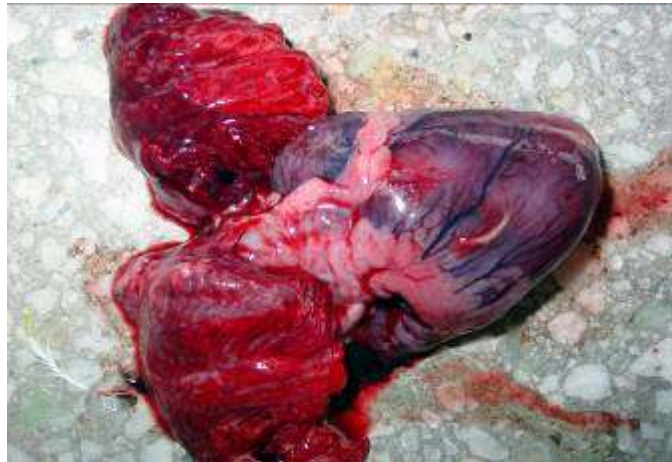


...lesions of HPAI

Accumulation of
fluid (edema) in
the inner thigh



Accumulation
of blood and
fluid in lungs



**If you see this disease, please call your local
Veterinary Officer**



2. NEWCASTLE DISEASE (ND)

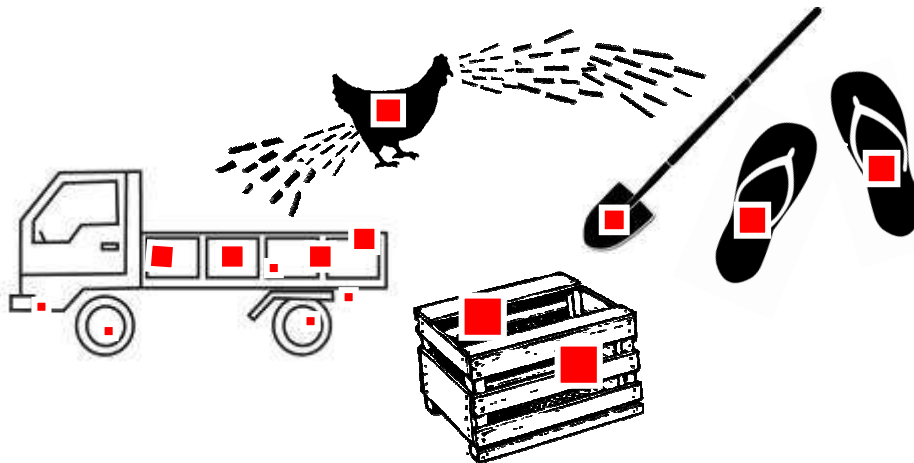
◆ *A Transboundary Animal Disease* ◆

Who gets it?

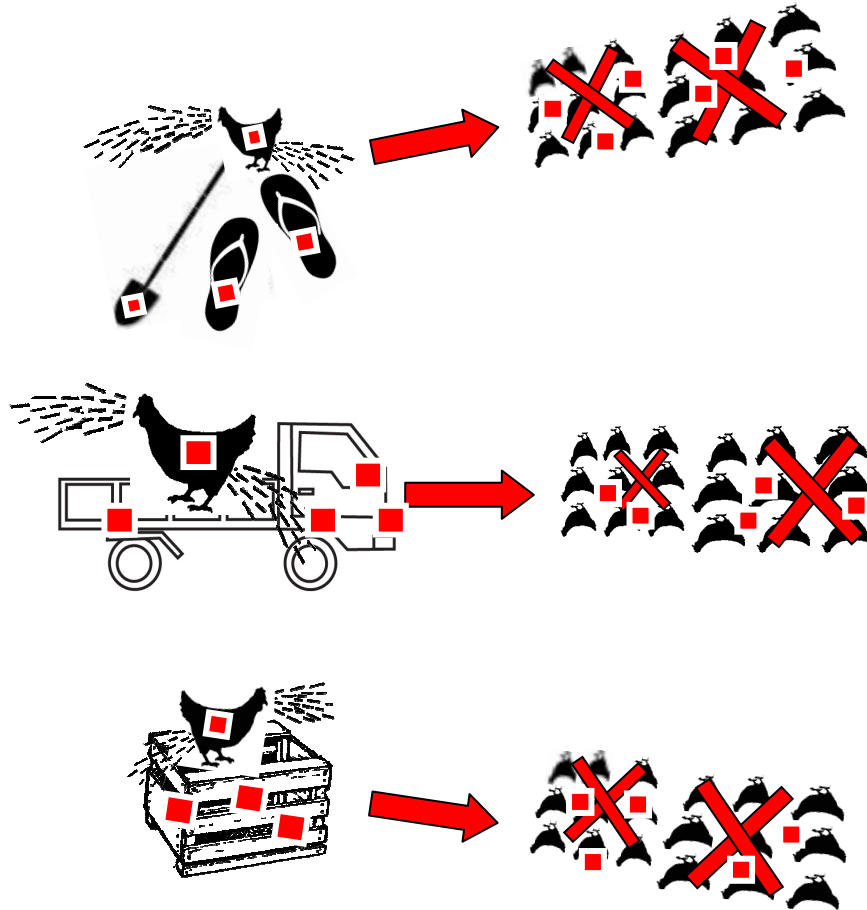
There are numerous species of birds that can be infected with ND. Not all species will get sick.

How do they get it?

Feces and saliva will have the virus, this can infect other birds. Dried feces or saliva on cages, footwear, or equipment such as shovels can take the disease to new places.

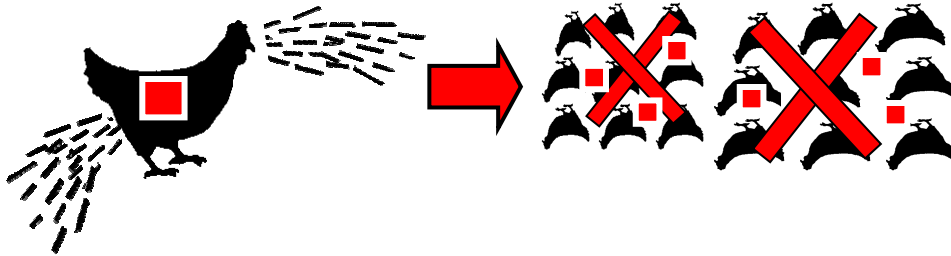


Infected birds, and infected objects which come into contact with these birds, can transmit the ND virus to healthy birds.



How many animals in the flock will be affected?

Virtually all birds which come in contact with this virus will acquire ND or will become carriers of this disease. It spreads very quickly and is extremely contagious.



Will they die?

Many, if not most, of the infected birds will die.

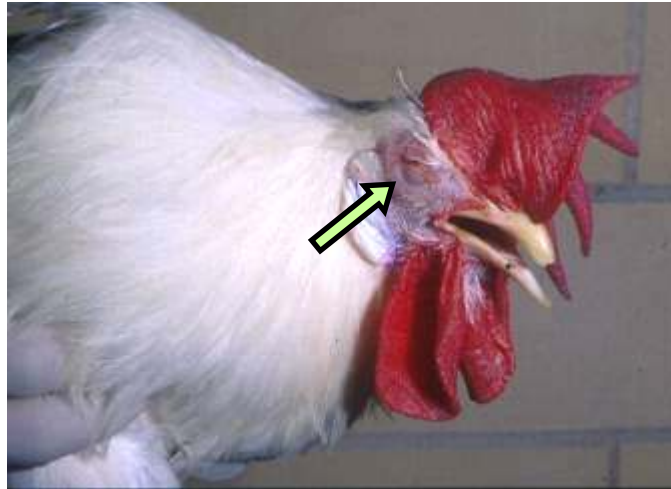
SICK BIRDS

Chickens stop eating, they don't move around much, and may lie down. They stop laying eggs, might have diarrhea. Some will get a crooked neck and might become paralyzed.

The clinical disease may look a lot like HPAI, but there are differences in the lesions seen. Laboratory diagnosis is the definite method to tell what disease it is.

SICK BIRDS (Newcastle)

Swelling and redness of the eyelids



Very depressed hen and she has some diarrhea and a crooked neck



...signs of Newcastle

Depressed
chicken, with
open-mouth
breathing



Chicken may
be paralyzed
but still alert



DEAD BIRDS (Newcastle)

Bleeding
in eyelid
Spleen can
be enlarged
and spotted

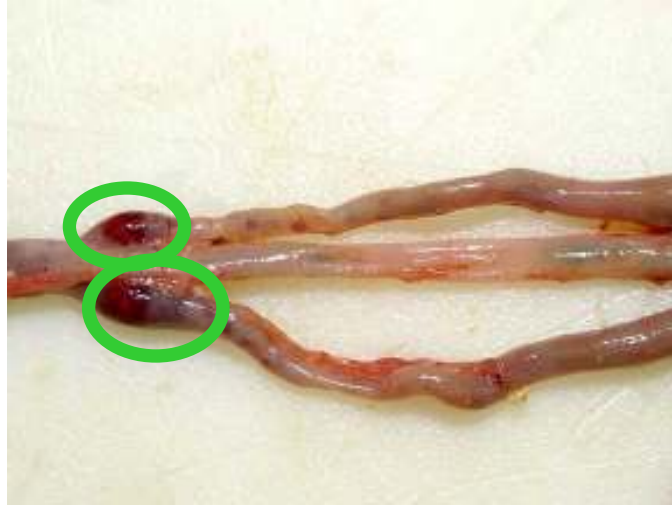


Spleen can
be enlarged
and spotted



...lesions of Newcastle

At the
beginning of
the cecum
(cecal tonsils)
there is
hemorrhage



Opened cecal
tonsils showing
hemorrhage



...lesions of Newcastle

Hemorrhage in
the lining of the
stomach
(proventriculus)



Hemorrhage in
some parts of
the intestine



**If you see this disease, please call
your local Veterinary Officer**



SWINE SECTION



3. AFRICAN SWINE FEVER (ASF)

◆ *A Transboundary Animal Disease* ◆

Who gets it?

All kinds of swine. Domestic pigs get sick with ASF.
Warthogs and African bush pigs carry the virus but don't get sick.



How do they get it?

Feces, saliva, and blood have lots of virus, so pigs pick up the disease this way. Also, a tick can take it from a warthog to a pig. And, feeding pork scraps to pigs may spread the disease.

How many animals in the herd will be affected?

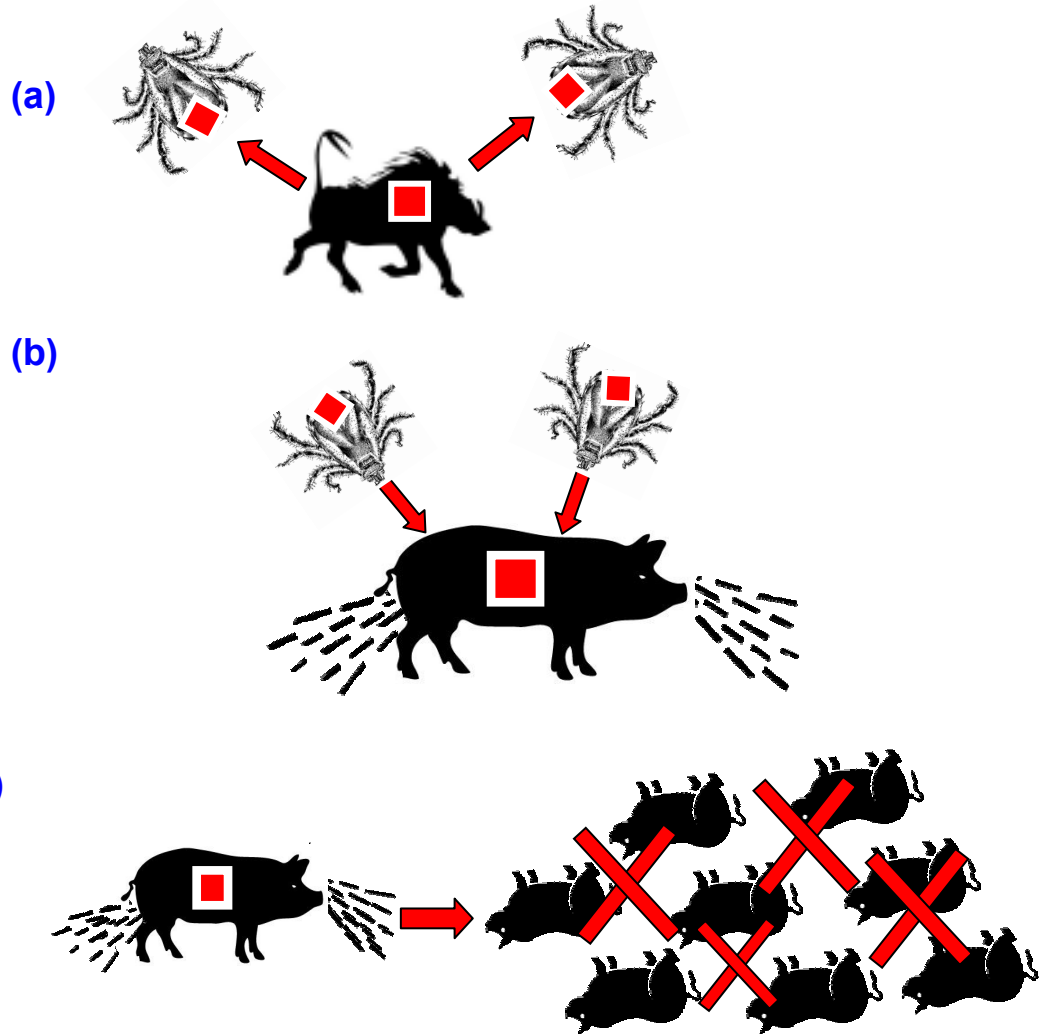
Almost the entire herd may be affected.

Will they die?

Mortality rates vary widely, from just a few pigs here and there to all of them in the community.

Transmission of ASF virus:

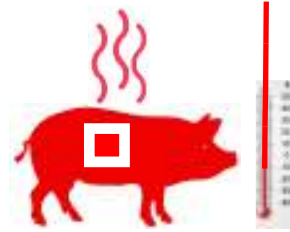
- (a) ticks feed on warthogs which are carriers of ASF, so the ticks now become carriers
- (b) when the ticks feed on a pig, they pass ASF to the pig
- (c) infected pigs then pass ASF to other pigs in the herd.



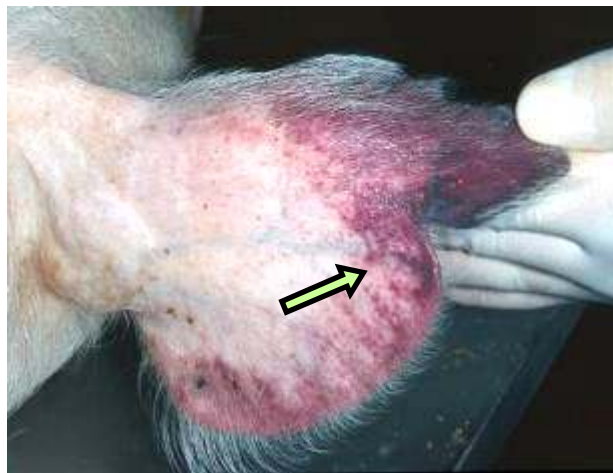
SYNDROMIC SURVEILLANCE

SICK PIGS (ASF)

High fever. Skin on ears and tail is RED.
Pigs stop eating, and huddle with each other.

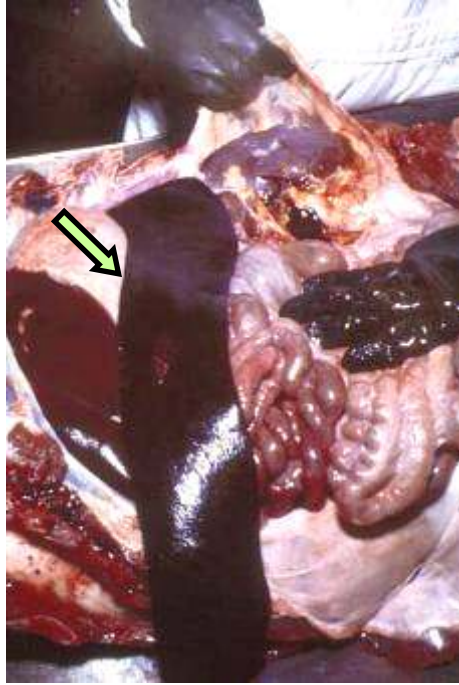


The edges
of the
ears may
become
dark red to
blue

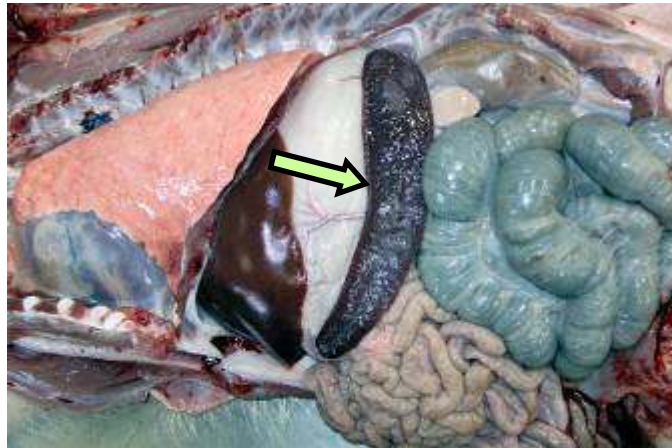


DEAD PIGS (ASF)

The spleen becomes HUGE, this spleen is probably 4X to 5X its normal size

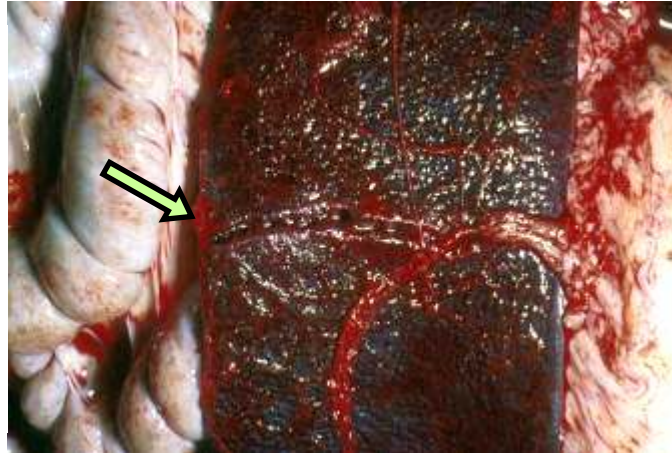


Here is the spleen of a healthy animal

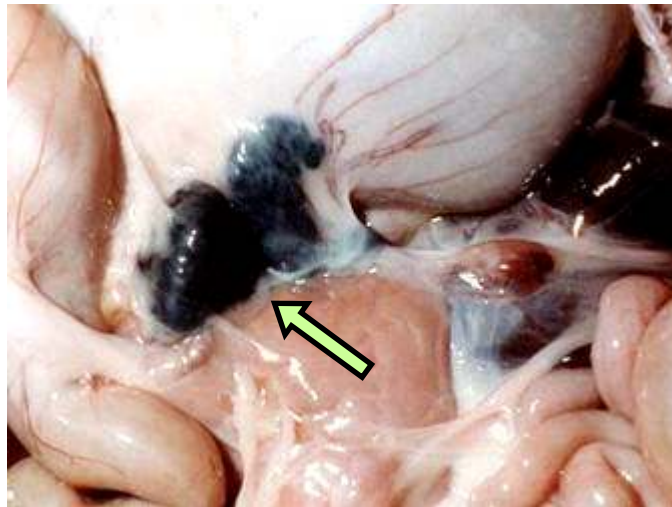


...lesions of ASF

Spleen is
enlarged
and breaks
easily

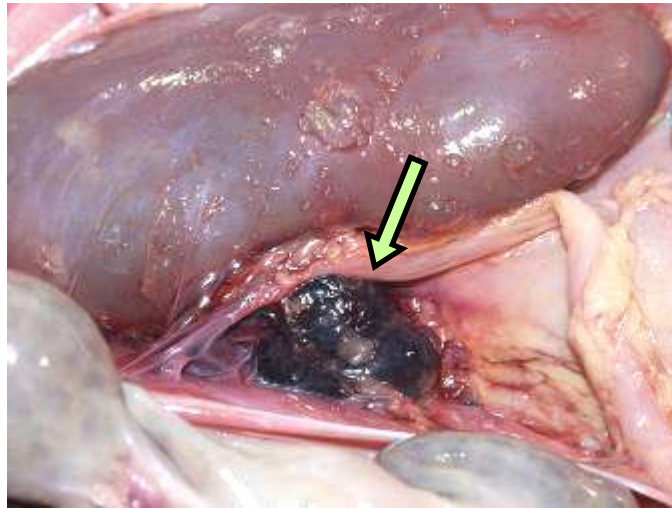


Very enlarged
dark red
(hemorrhagic)
gastrohepatic
lymph node in
a pig infected
with ASF



...lesions of ASF

African swine
fever -
enlarged
dark red
renal lymph
node



**If you see this disease, please call your local
Veterinary Officer.**



SHEEP, GOATS, CATTLE and HORSE SECTION



DIARRHEA

RESPIRATORY

MOUTH & FOOT LESIONS

SKIN DISEASES

ABORTION

(A) DIARRHEA

**4. PESTE DES PETITS RUMINANTS
(PPR)**

◆ *A Transboundary Animal Disease* ◆

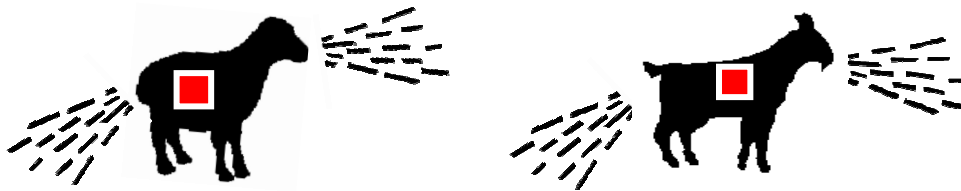
Who gets it?

Sheep and goats

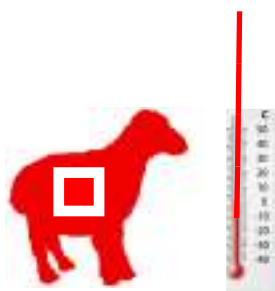


How do they get it?

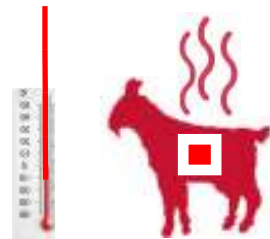
Feces and saliva can transmit it.



How many animals in the herd will be affected?

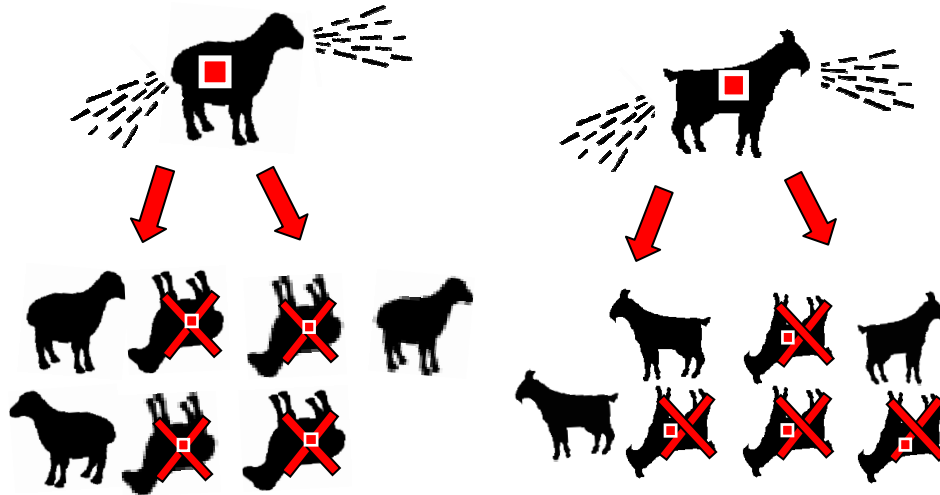


Young stock (kids and lambs) will suffer more.
In susceptible sheep and goat populations, almost all of the animals will get sick.



Will they die?

Most of the affected animals will die. The young animals are especially susceptible. Older animals are likely to have severe disease if they have other complicating factors – such as parasitic infestation, poor nutrition, lack of shelter, and adverse climatic conditions.



SICK ANIMALS (PPR)

PPR can result in discharge around mouth and nose, and foul-smelling diarrhea



...signs of PPR



Crusting around mouth, nose, and eyes



Crusting around eyes

Crusting around mouth and nose. with discharge

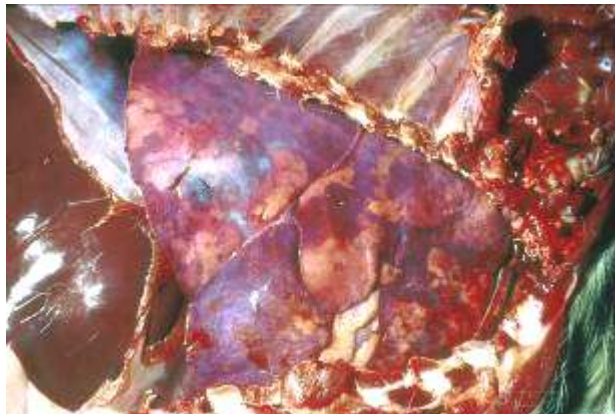


DEAD ANIMALS (PPR)

The mouth
can have
severe ulcers,
which is one
reason why
animals don't
want to eat



Lungs can
be very
reddened,
and animals
have trouble
breathing



SYNDROMIC SURVEILLANCE

...lesions of PPR

Here is an earlier stage of the pneumonia with PPR, where the lung is filled with small slightly firm "nodules".



**If you see this disease, please call
your local Veterinary Officer.**



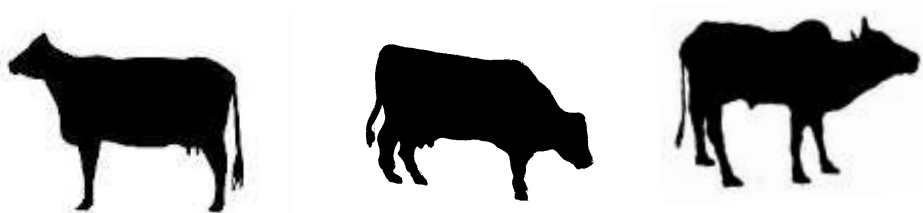
(B) RESPIRATORY

**5. CONTAGIOUS BOVINE
PLEUROPNEUMONIA
(CBPP)**

◆ *A Transboundary Animal Disease* ◆

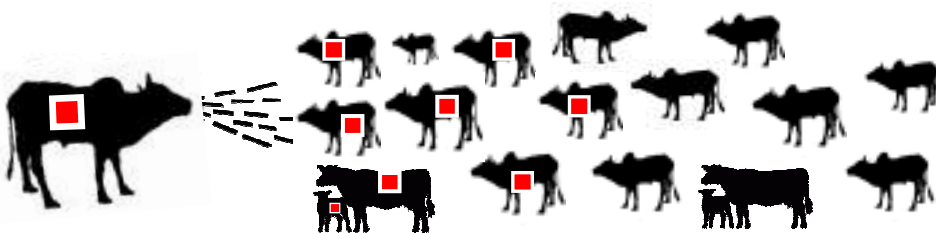
Who gets it?

All breeds of cattle are susceptible.



How do they get it?

Only saliva or mucus from the nose can spread the disease.
Animals must be very close together to catch it.



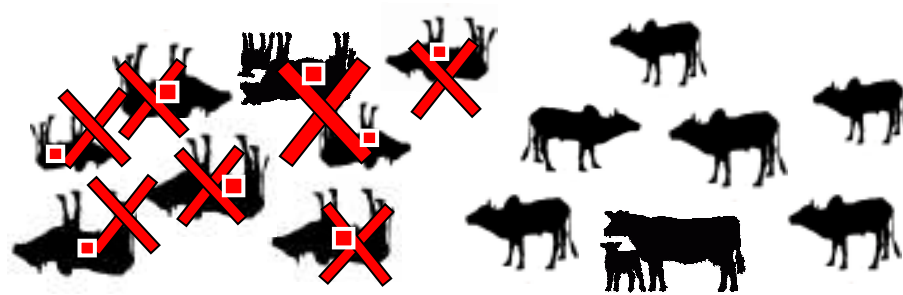
SYNDROMIC SURVEILLANCE

How many animals in the herd will be affected?

When there is close contact of animals, many animals will be affected.

Will they die?

Many of the animals that develop severe respiratory problems will die.



SICK ANIMALS (CBPP)

Animals are depressed and have a runny nose



Cow with runny nose



SYNDROMIC SURVEILLANCE

...signs of CBPP

The extended neck and head are due to respiratory distress and coughing

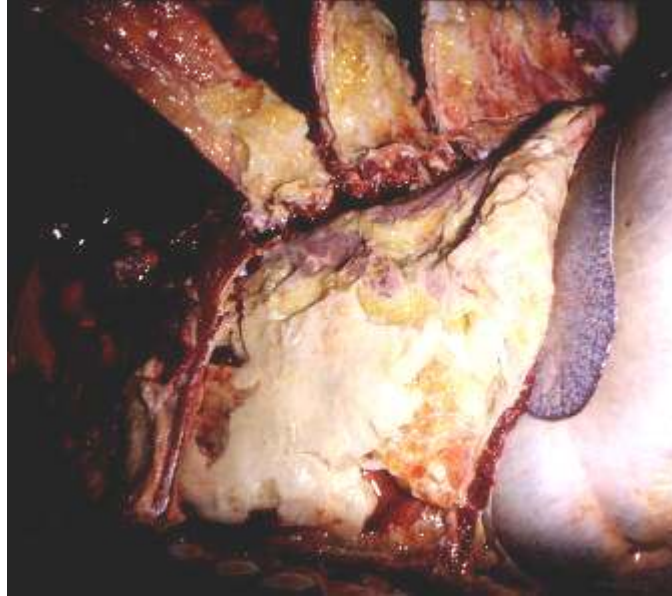


Animals with CBPP are often depressed and separate themselves from the herd



DEAD ANIMALS (CBPP)

Lungs have
yellow covering



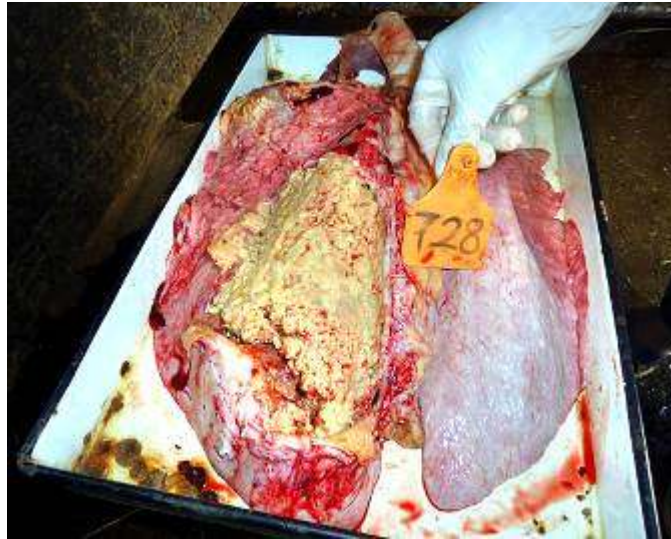
Lungs can be
covered with
yellow material



...lesions of CBPP

Lungs may have abundant yellow material on the surface and within.

CBPP usually affects only one side of the lungs



When you cut through the lungs, they are heavy and firm, and there is a network pattern known as marbling



If you see this disease, please call your local Veterinary Officer.



6. CONTAGIOUS CAPRINE PLEUROPNEUMONIA (CCPP) ♦ A Transboundary Animal Disease ♦

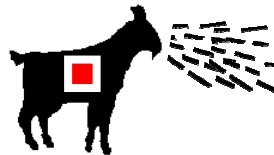
Who gets it?

Goats. Every so often, a sheep, kept with goats, can get it.



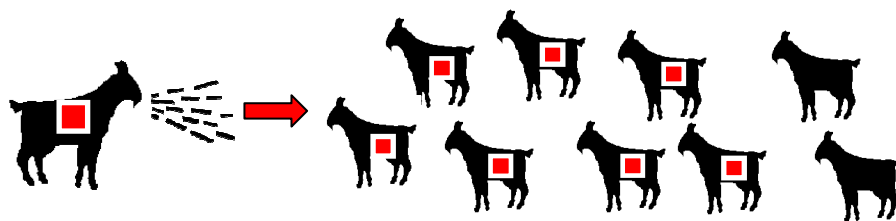
How do they get it?

Saliva or mucus from the nose may spread it. Animals need to be close in order to catch it.



How many animals in the herd will be affected?

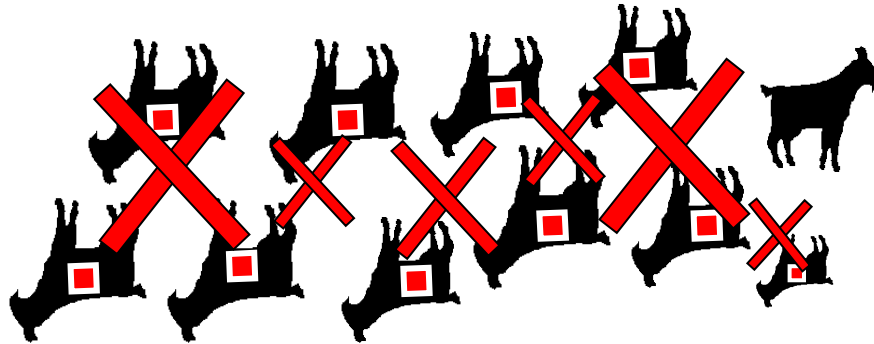
Many animals in the herd may get the disease.



SYNDROMIC SURVEILLANCE

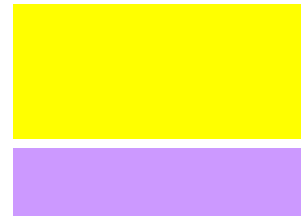
Will they die?

Most of the infected animals will die.



SICK ANIMALS

Infected goats will have extreme fever, severe difficulty breathing, coughing, and high mortality. Decreased energy, weight loss. Possible grunting and bleating. Frothy nasal discharges prior to death.



SICK ANIMALS (CCPP)

Goat with
nasal
discharge
due to CCPP

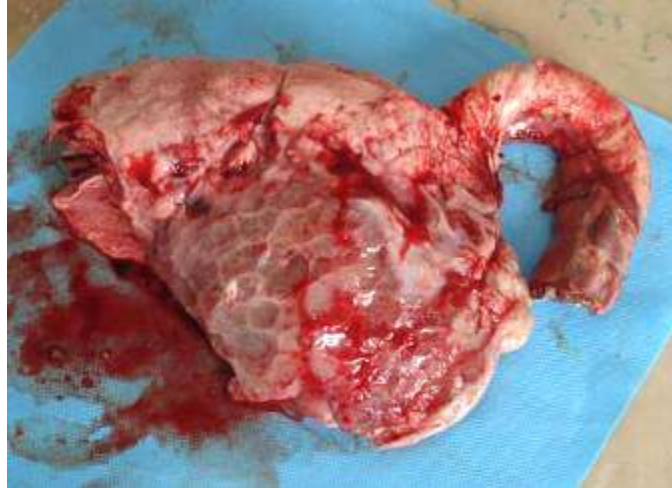


Goat infected
with CCPP
showing
respiratory
distress



DEAD ANIMALS (CCPP)

Lung is firm,
enlarged,
and bloody



Often the
lung may be
stuck to the
body wall
(adhesion)



SYNDROMIC SURVEILLANCE

...lesions of CCPP

The lungs are severely affected by this disease, and are almost unrecognizable as lungs



**If you see this disease, please call
your local Veterinary Officer.**

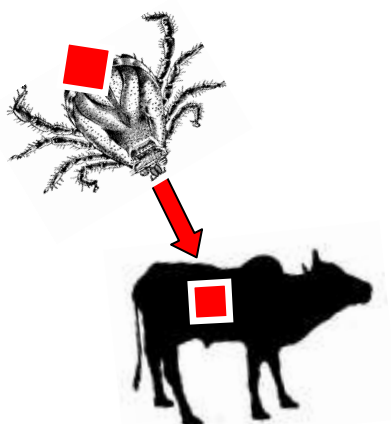


7. EAST COAST FEVER (ECF)

◆ *A Transboundary Animal Disease* ◆

Who gets it?

Cattle and buffalo



How do they get it?

By infected brown ear ticks.
The ear is the preferred feeding site of this tick.

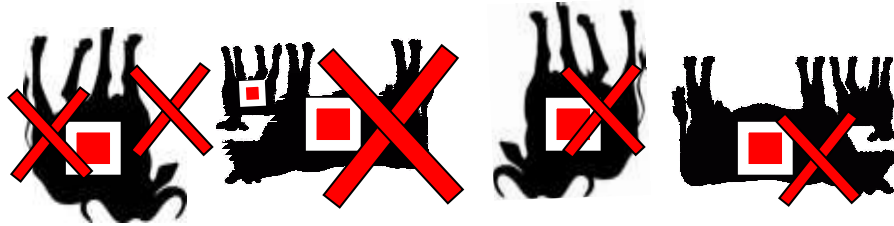
How many animals in the herd will be affected?

The number of animals affected depends on the number of infective ticks and the degree of acaricide (anti-parasite) protection. It can range from a couple of animals to many.

SYNDROMIC SURVEILLANCE

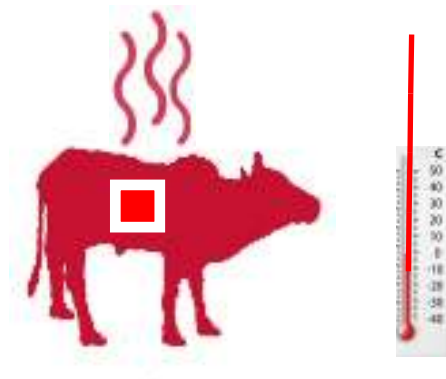
Will they die?

Most of the animals that get sick with ECF will die.



SICK CATTLE AND BUFFALO

ECF is characterized by high fever and swelling of the lymph nodes. Then infected animals stop eating, have difficulty breathing, and die.



SICK ANIMALS (ECF)

Animals
may
have
enlarged
lymph
nodes

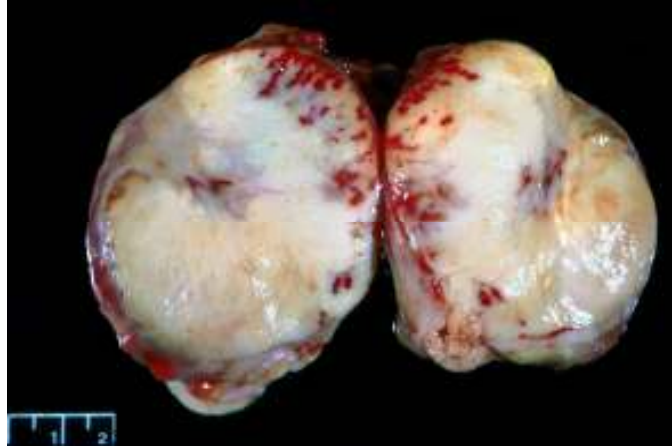


Difficult
breathing
is seen
in this
cow with
an open
mouth



DEAD ANIMALS (ECF)

Swollen
lymph nodes
are
evident
after
dissection



Lungs can be
very wet and
heavy



**If you see this disease, please call your local
Veterinary Officer.**



8. HEARTWATER

◆ A Transboundary Animal Disease ◆

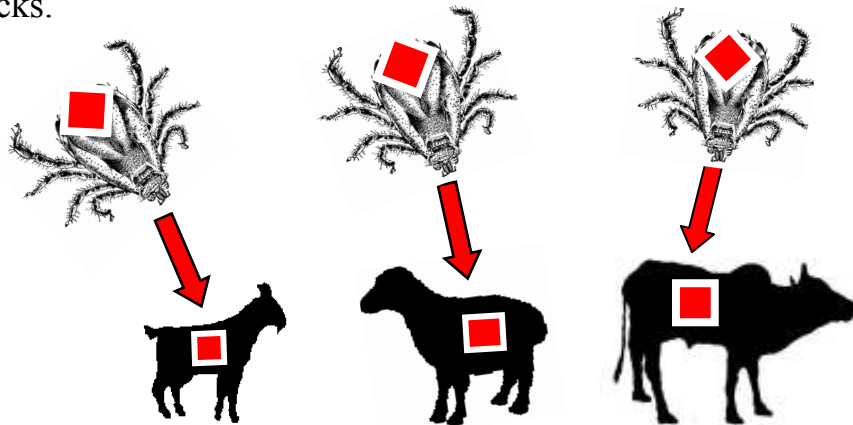
Who gets it?

It affects cattle, sheep, and goats.



How do they get it?

Heartwater is caused by a small bacteria that is transmitted by ticks.



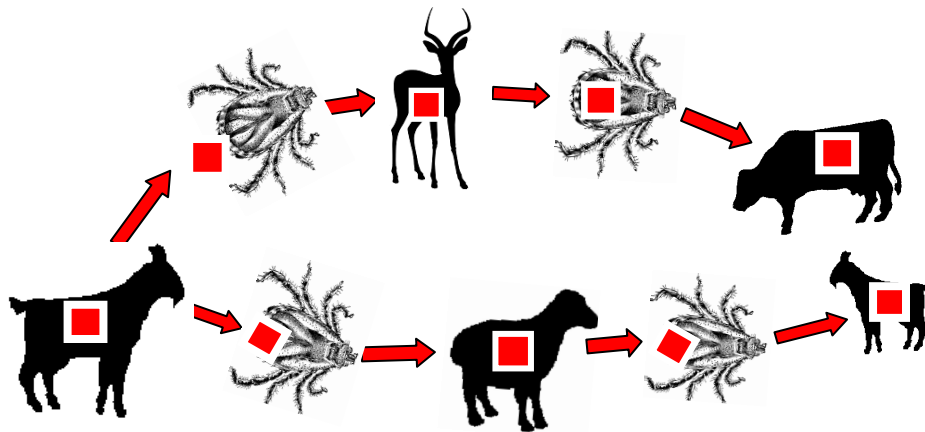
How many animals in the herd will be affected?

It depends on the degree of tick infestation, the previous exposure of the animals to infected ticks, and the level of

SYNDROMIC SURVEILLANCE

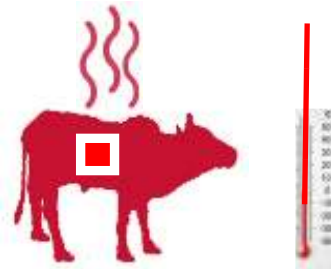
acaricide (pesticide) protection. Just one animal or many can be affected.

Heartwater spreads from one animal to another by a tick bite. It cannot spread from animal to animal without a tick.



What will the animals look like clinically?

They have high fever. They are depressed and breathe rapidly. Then, they develop nervous signs such as convulsions or crooked necks and they die.

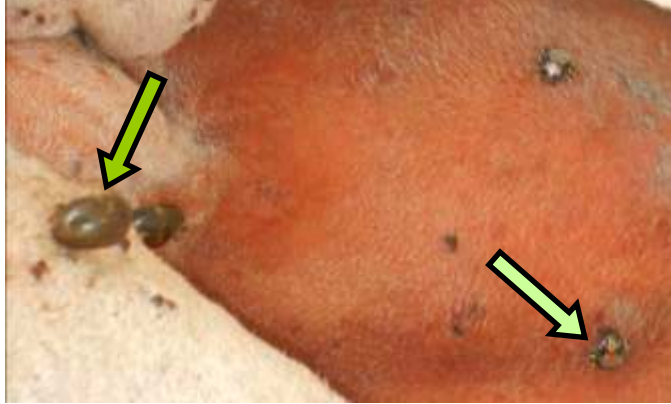


Will they die?

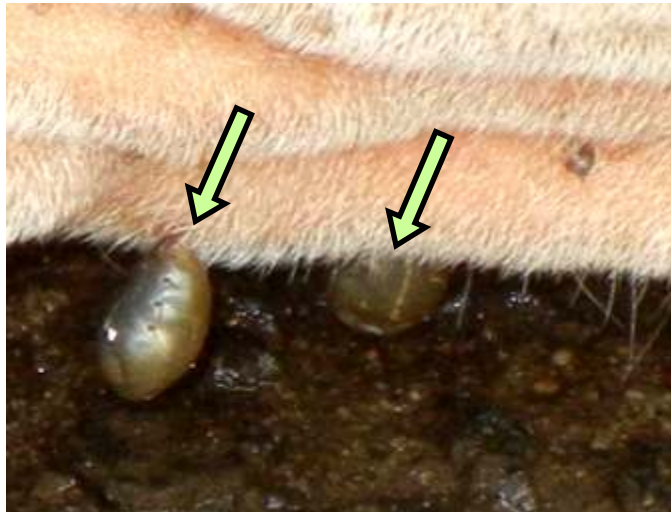
The death rate in infected animals is very high.

SICK ANIMALS (Heartwater)

Amblyomma
ticks on
the skin of a
bull

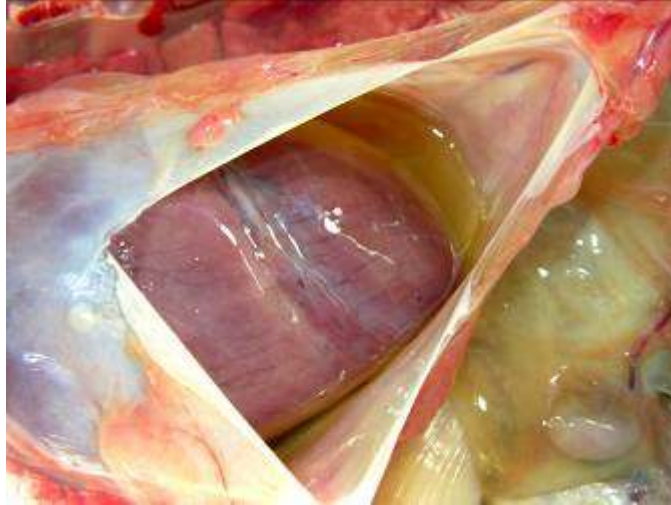


Engorged
Amblyomma
ticks on
the skin

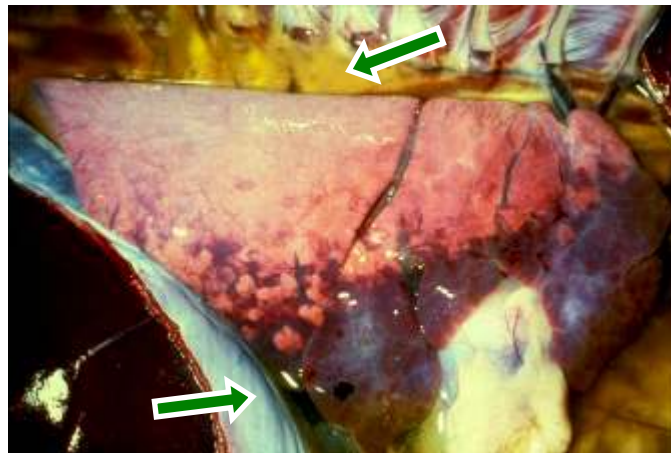


DEAD ANIMALS (Heartwater)

Excess fluid
around the
heart



Excess fluid in
and around the
lungs



If you see this disease, please call your local
Veterinary Officer.



9. AFRICAN HORSE SICKNESS (AHS)

◆ *A Transboundary Animal Disease* ◆

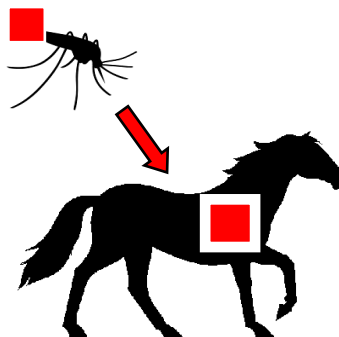
Who gets it?

Horses are most susceptible to AHS, and mules are less susceptible. Donkeys and zebras are very resistant to it.



How do they get it?

The AHS virus is transmitted by small biting insects. After biting an infected horse, they can spread it to other animals.



These insects are most active just after sunset and at sunrise. They are very tiny and range in size from 1 mm to 4 mm.

Size of Biting Insects

The actual size of these biting insects ranges from 1mm to 4 mm:



The insect in the above box is about 1 mm



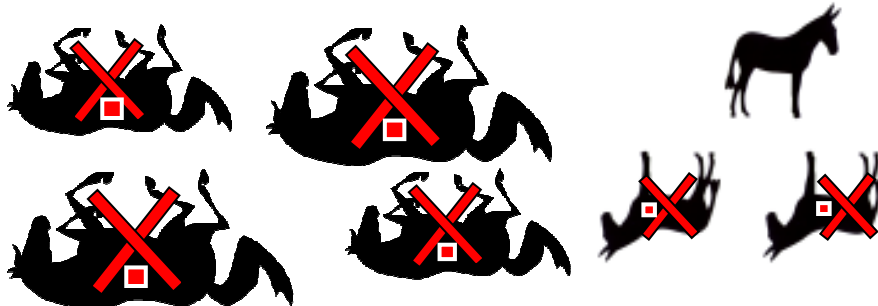
This insect is about 4mm

How many animals in the herd will be affected?

The number of infected animals will depend on the number of infected insects. If there are many insects, there will likely be many dead horses.

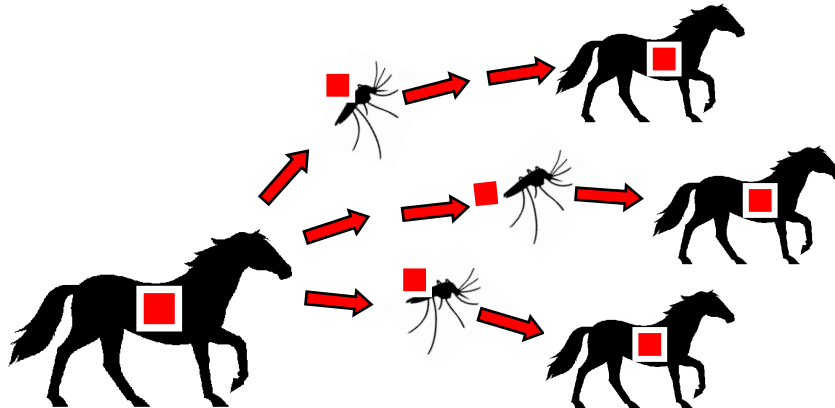
Will they die?

The death rate for horses is high. In mules, the rate is lower.



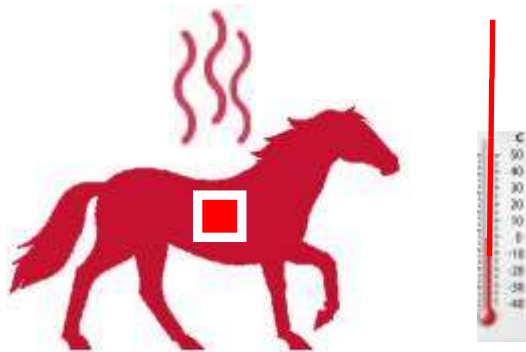
SYNDROMIC SURVEILLANCE

AHS spreads from one horse to many through small flying insects.



SICK ANIMALS (AHS)

They will have high fever with sweating, then coughing and severe problems with breathing. There will be foam from the nostrils, then death.



SYNDROMIC SURVEILLANCE

...signs of AHS

Eye
membranes
are red and
swollen



Area above
the eye is
swollen



DEAD ANIMALS (AHS)

Horse has died, with froth at the nose



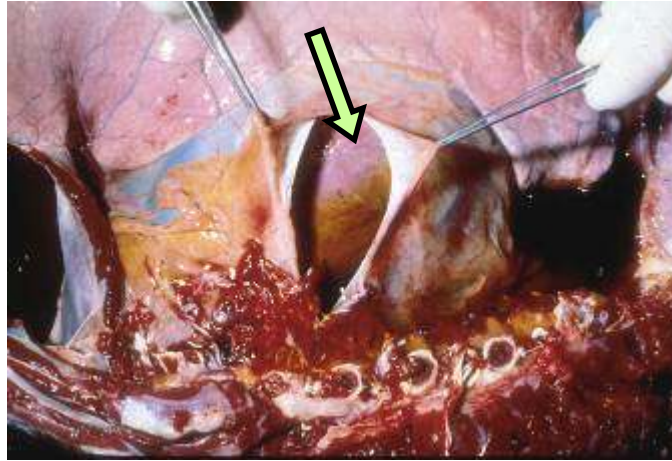
Lungs are FILLED with fluid



SYNDROMIC SURVEILLANCE

...lesions of AHS

The sac
around the
heart may
be filled
with fluid



**If you see this disease, please call your local
Veterinary Officer.**



(C) MOUTH AND FOOT LESIONS

10. FOOT-AND-MOUTH DISEASE (FMD)

◆ *A Transboundary Animal Disease* ◆

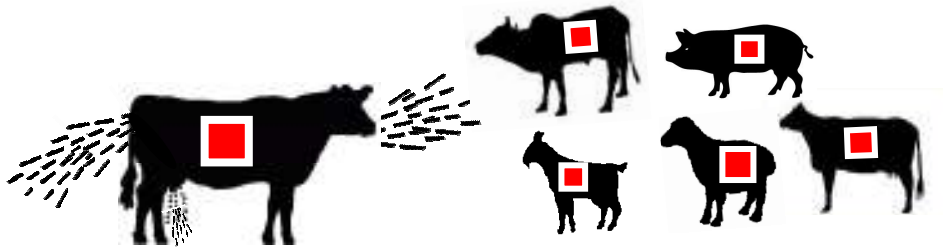
Who gets it?

All cloven-hoofed animals are susceptible to FMD. Cattle often show a more severe form of the disease than do sheep and goats.



How do they get it?

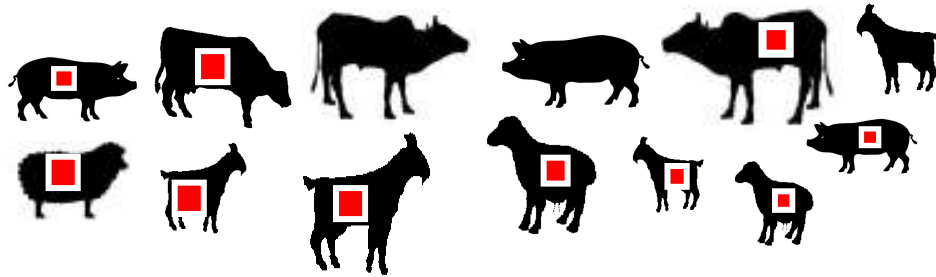
Air breathed out by infected animals is infectious and will cause disease in other animals breathing in that air. Another method of transmission is by ingestion of contaminated forage and water. Also, all body excretions, including urine, milk, feces, and semen are infective.



SYNDROMIC SURVEILLANCE

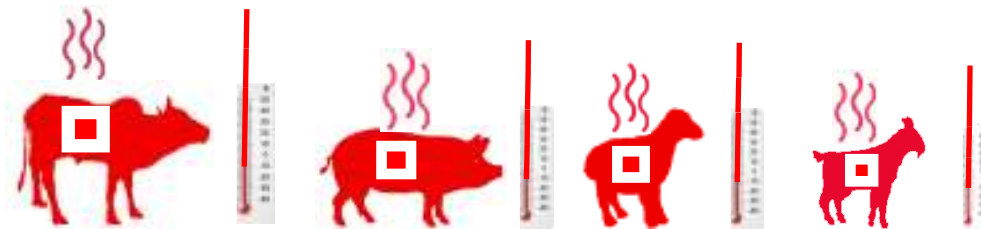
How many animals in the herd will be affected?

It will spread very quickly through an entire herd. It is EXTREMELY contagious. You can expect most animals to show clinical signs.



Will they die?

No, this is not usually a fatal disease. Adults will recover, but a few very young or newborn animals may die from the disease. Some will have permanent foot problems.



(...see photos next page)

SICK ANIMALS (FMD)

Animals get
very sore feet
so they lie
down or kneel



Saliva
dripping from
the mouth
of a cow



...signs of FMD

Sores in the mouth of a cow begin as blisters



Gum lesions seen during FMD examination



...signs of FMD

Sores due to FMD... these are starting to heal

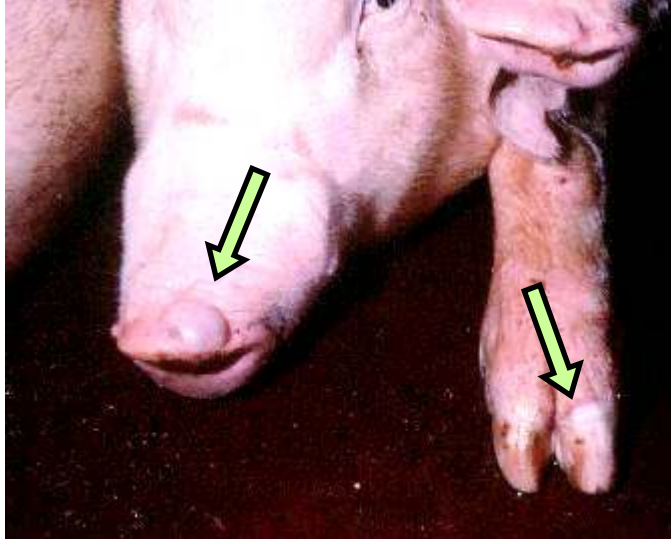


The lesions around the hooves may be so severe that the outside of the hoof will fall off



...signs of FMD

Pigs can get big blisters on their snouts, in addition to the lesions in the feet

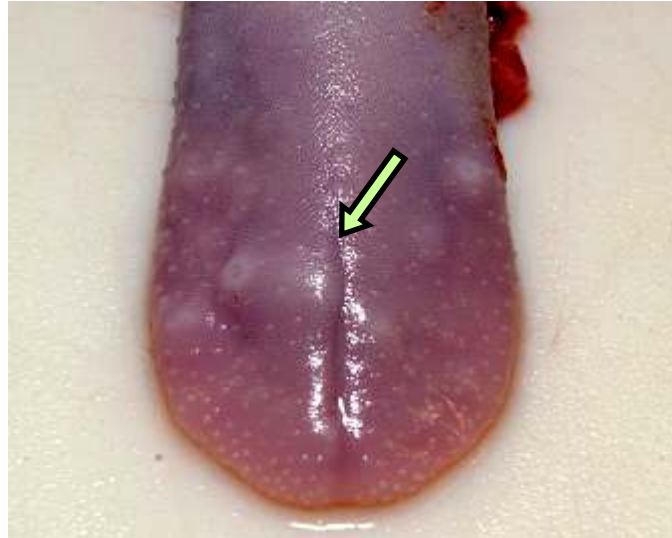


Ulcers around the feet can cause great pain, and permanent foot problems



...signs of FMD

Blisters
forming on
the tongue
of an
infected
sheep



BLISTERS ARE THE FIRST SIGN OF FMD,
SO IMMEDIATELY REMOVE AND ISOLATE
ANY ANIMAL WITH A **BLISTER**

If you see this disease, please call your local
Veterinary Officer.



(D) SKIN DISEASE

**11. SHEEP POX AND GOAT POX
(SP, GP)**

◆ *A Transboundary Animal Disease* ◆

Who gets it?

Sheep and goat pox affects all ages and breeds of domestic and wild sheep and goats. The viruses involved usually infect only one species, so goats get goat pox and sheep get sheep pox.



How do they get it?

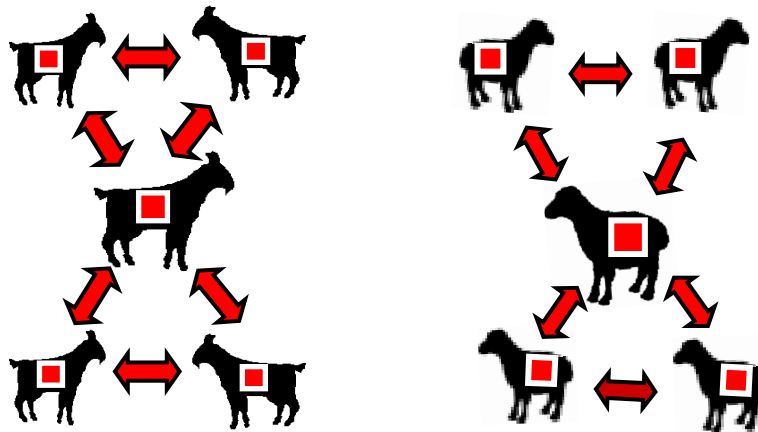
Skin sores and saliva are infectious. Skin scabs can be infectious for a long time. Other animals contacting the scabs will get sick.



Sheep with SP only infect other sheep

-and-

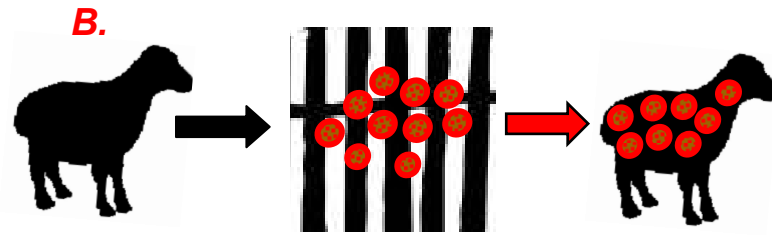
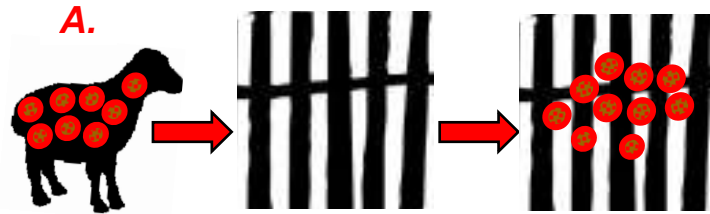
Goats with GP only infect other goats



SGP TRANSMISSION

A. If an infected animal with scabs rubs or scratches itself on a fencepost, the live virus can be transmitted to the fencepost from the scabs.

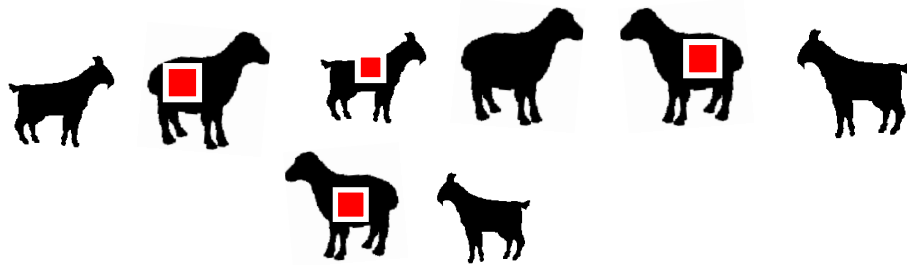
B. Then, an uninfected animal can become infected by rubbing against the same fencepost.



SYNDROMIC SURVEILLANCE

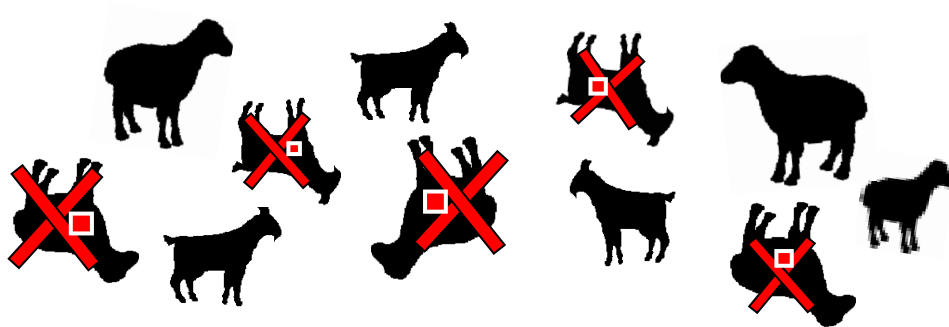
How many animals in the herd will be affected?

Usually most of the animals in the herd or flock will show some disease.



Will they die?

Some animals will die, and it may depend on other factors present – such as parasites, nutrition, and weather.



SICK ANIMALS (SGP)

Darkened
pimples
(papules) form
on the lips of a
sheep infected
with sheep pox

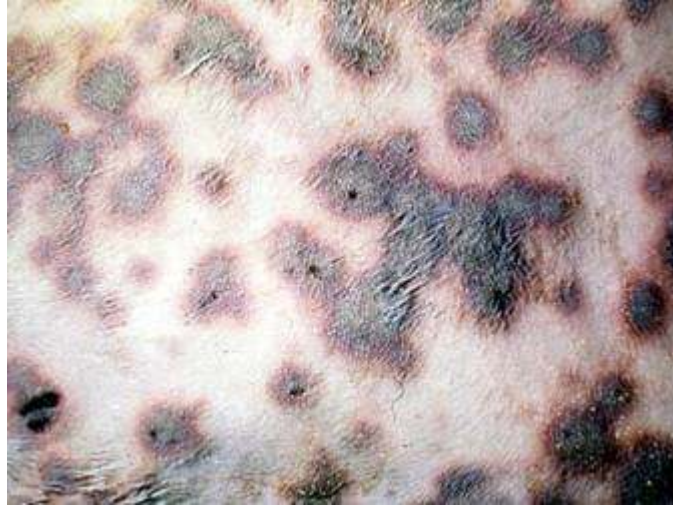


Blackhead
sheep with
typical lesions
of sheep pox



...signs of SGP

Sheep pox
results in
raised
darkened
spots on the
animal's
skin



There can
be multiple
raised spots
all over the
skin



...signs of SGP

Typical signs
of goat pox



Pimples
(papules) are
developing
on the
underside of
the tail due
to sheep pox



DEAD ANIMALS (SGP)

Lungs can have multiple nodules and spots in SP and GP



If you see this disease, please call your local Veterinary Officer.

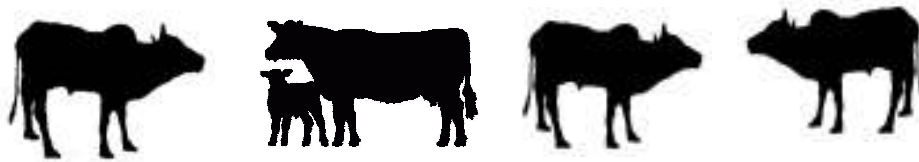


12. LUMPY SKIN DISEASE OF CATTLE (LSD)

◆ *A Transboundary Animal Disease* ◆

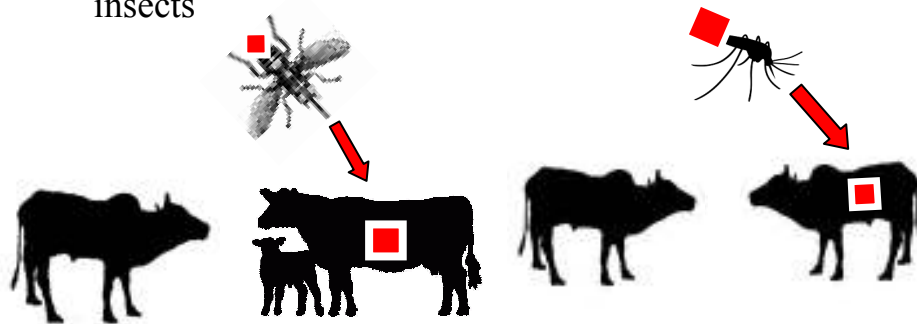
Who gets it?

Cattle

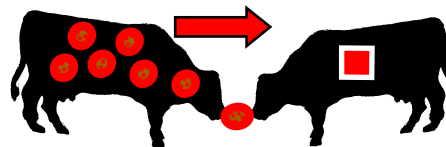


How do they get it? There are 2 methods of transmission:

(1) From mosquitoes and other biting and blood feeding insects



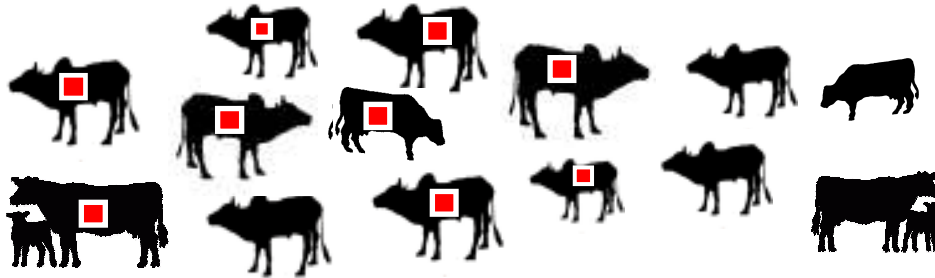
(2) Uninfected animals rub against the lesions and become infected themselves



SYNDROMIC SURVEILLANCE

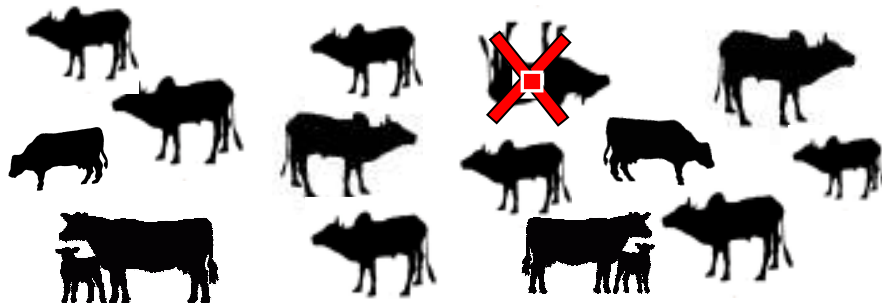
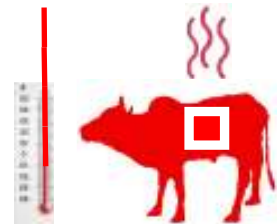
How many animals in the herd will be affected?

Most of the herd will be affected. It starts with high fever and large raised lumps are seen everywhere.



Will they die?

Some animals may die. The hides of infected animals are ruined by the disease.



SICK ANIMALS (Lumpy Skin Disease)

Lumps all
over the body,
with lumpy
skin disease



Nodules are
very thick
and damage
the hide



SYNDROMIC SURVEILLANCE

...signs of Lumpy Skin Disease



Skin may have multiple nodules



Lesions due to LSD are very deep

Damage to the hide can be very severe due to LSD



If you see this disease, please call your local Veterinary Officer.



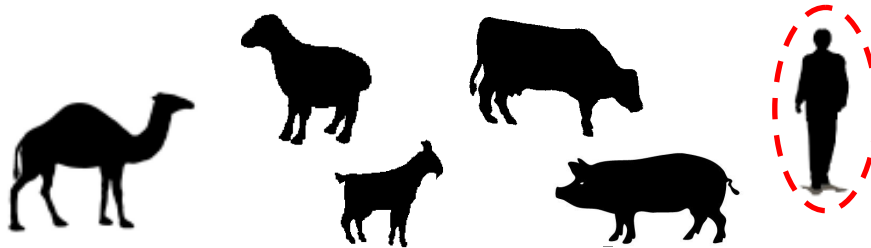
(E) ABORTION

13. BRUCELLOSIS

◆ *A Transboundary Animal Disease* ◆

Who gets it?

Lots of species. Humans can also become infected by these bacteria.



How do they get it?

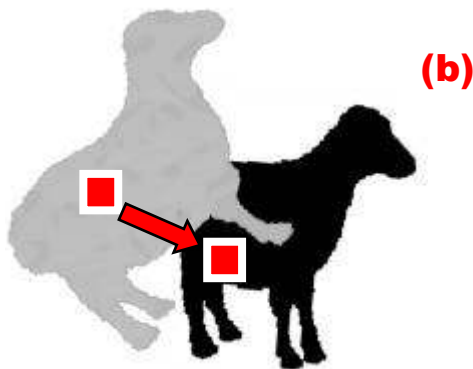
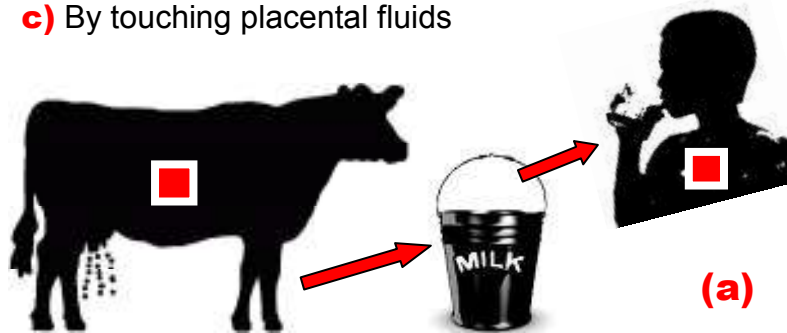
- Direct contact with tissues or fluids from an infected animal
- Consuming milk from an infected animal
- Consuming feed or water that has been contaminated by infected tissues or fluids
- Through contact with an environment that has been contaminated with vaginal discharges after an infected animal has aborted or calved – such as aborted fetuses and placental membranes or fluids

SYNDROMIC SURVEILLANCE

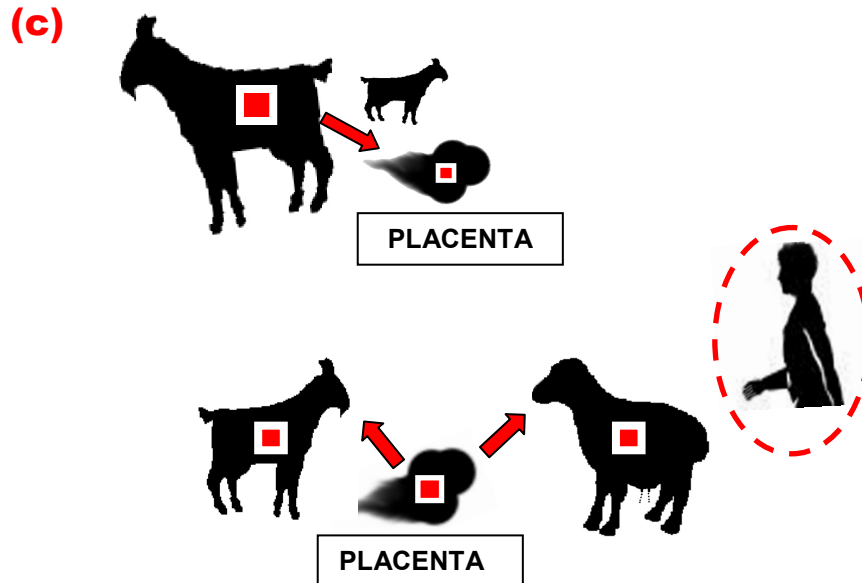
- Brucellosis can be carried from one herd to another by an infected or exposed animal

Brucellosis spreads in many ways, for instance:

- a)** By drinking the milk of an infected animal
- b)** From one animal to another by mating
- c)** By touching placental fluids



SYNDROMIC SURVEILLANCE



How many animals in the herd will be affected?

Many of the animals in a herd will be infected but may not appear to be ill.



**STEPS TO PREVENT HUMAN CASES
OF BRUCELLOSIS:**

1. Do not eat meat that may be contaminated with this bacteria unless it is thoroughly cooked.
2. Do not drink raw milk or eat unpasteurized milk products such as fresh cheese.
3. Wear sturdy rubber or plastic gloves when assisting calving or aborting animals, and scrub well with soap and water afterwards.
4. Clean and disinfect animal birthing areas and other places likely to become contaminated with infective material.

What will the animals look like clinically?

The most obvious signs are abortions and low milk production. Infected adult animals may appear very healthy.

Will they die?

The young animals inside the uterus will die and be aborted.



SICK ANIMALS (Brucellosis)

Abortion and retention of placenta are clinical signs of brucellosis

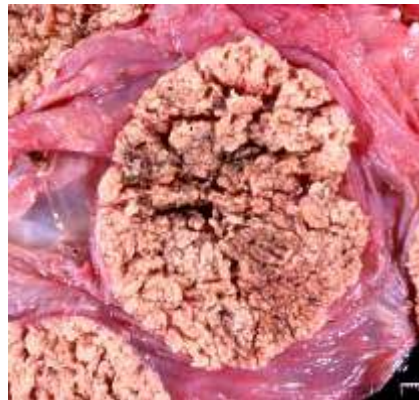


DEAD ANIMALS (Brucellosis)

Aborted fetus
of camel
due to
brucellosis



Aborted fetus of sheep,
due to brucellosis

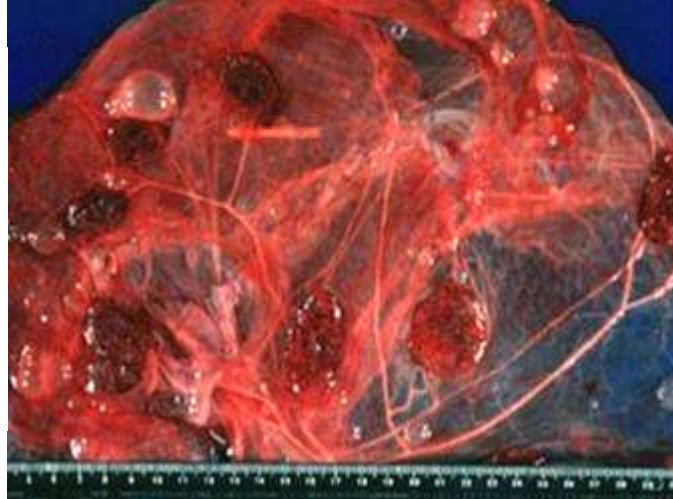


Bovine placenta with very
thickened areas, typical of
brucellosis

SYNDROMIC SURVEILLANCE

...lesions of brucellosis

Normal
placenta



Placenta
affected by
brucellosis –
there are
many
thickened
yellow areas



**If you see this disease, please call your local
Veterinary Officer.**

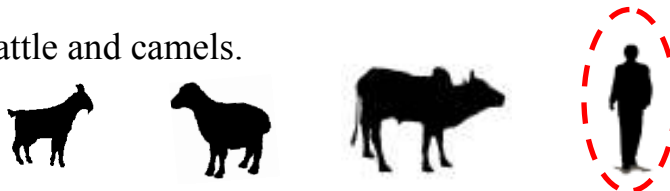


14. RIFT VALLEY FEVER (RVF)

◆ *A Transboundary Animal Disease* ◆

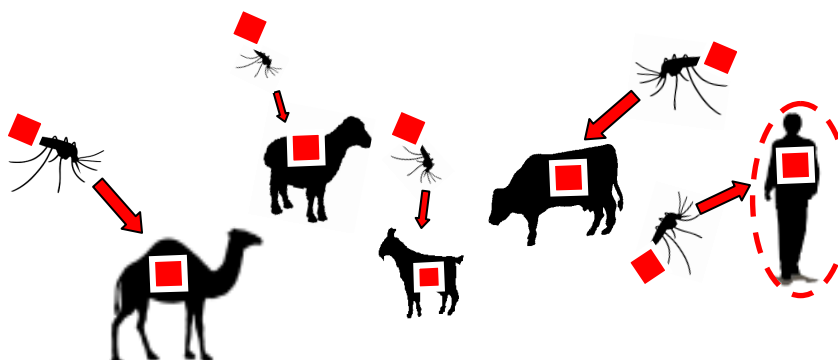
Who gets it?

Sheep, goats, cattle and camels.
And humans.



How do they get it?

Mosquitoes become infected and take it from one animal to another. Humans become infected by mosquitoes or through contact with blood from infected animals.



SYNDROMIC SURVEILLANCE

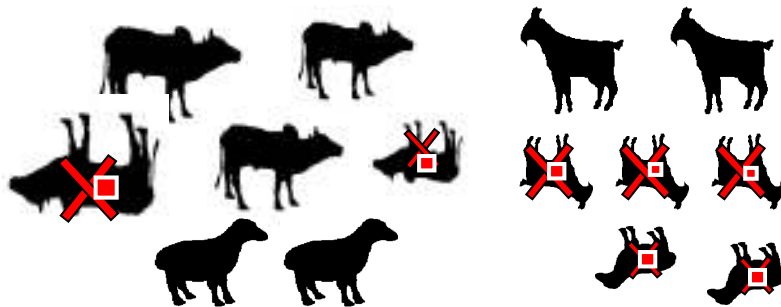
How many animals in the herd will be affected?

It can be very high and affect entire herds, especially when there are a lot of mosquitoes, which happens after heavy rains.



Will they die?

For unborn animals still in the dam, mortality is 100%. For newborn animals, about 10-50% of the animals will die. Older animals may not look sick at all but they have the virus. Mosquitoes can pick up the virus out of the blood and take it to another animal or a human!



What will the animals look like clinically?

There will be abortions. Young animals may be weak, have fever, and yellow mucous membranes.

SICK ANIMALS (RVF)

Skin and
membranes
with yellow
tinge due to
RVF



A goat
infected with
RVF has
aborted



...signs of RVF

A camel
infected with
RVF has
aborted



DEAD ANIMALS (RVF)

Large
distorted
liver



**STEPS TO PREVENT
HUMAN CASES OF RVF**

- 1.** Wear protective clothing if you may be exposed to the blood, body fluids or tissues of an infected animal.
- 2.** If there are many abortions nearby, take special care to avoid being bitten by mosquitoes.

**If you see this disease, please call your local
Veterinary Officer.**



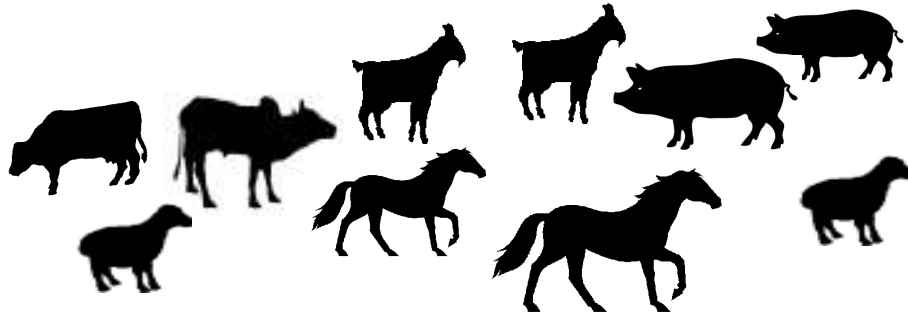
ENDEMIC DISEASES OF CONCERN



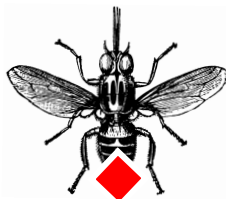
15. TRYPANOSOMES

Who gets it?

Cattle, goats, sheep, pigs, horses



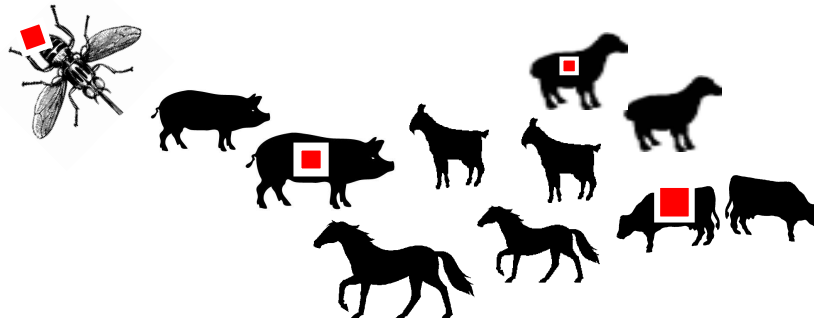
How do they get it?



MOSTLY through the bite of an infected tsetse fly. There are some types of trypanosomes that can be transmitted by other flies. But tsetse flies are the most important.

How many animals in the herd will be affected?

Not too many are infected. It depends on whether or not there are tsetse flies.



SYNDROMIC SURVEILLANCE

Will they die?

If infected, they eventually die, but they may be ill for a very long time.

Sick animals

Animals are sick for a long time and become very thin



Dead animals (trypanosomes)

Severe weight loss



If you see this disease, please call
your local Veterinary Officer.



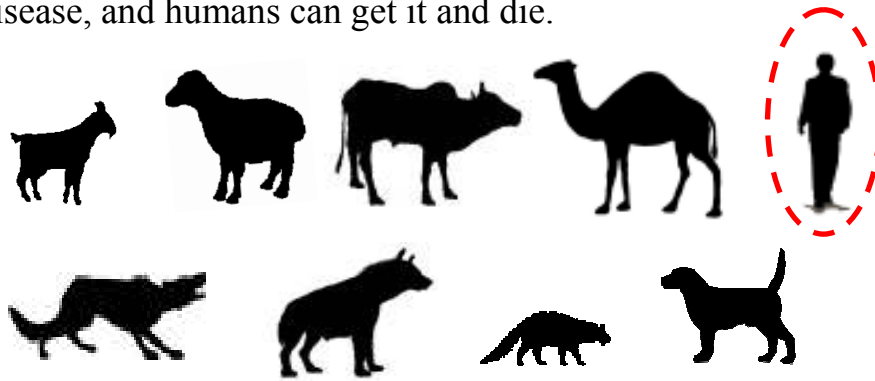
16. RABIES

Other names

Hydrophobia, and these local names: -Kichaa (Swahili)
-Eyda waalan (Somali) / -Himam ubood kelby (Eritrean)

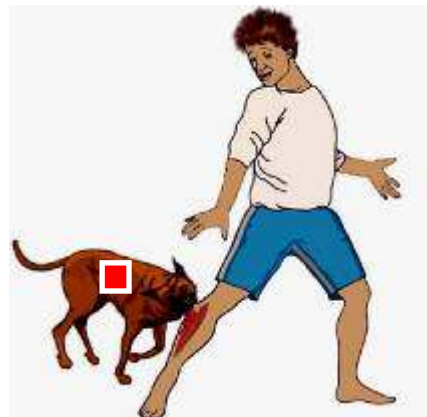
Who gets it?

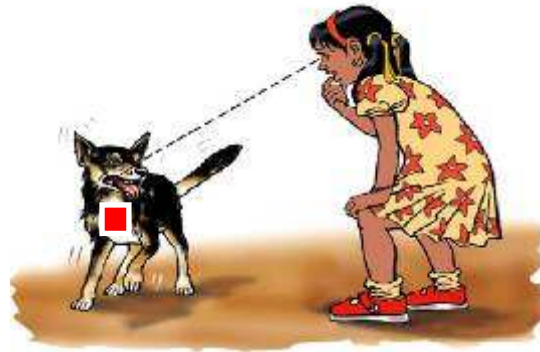
All mammals. Birds do NOT get it. This is a ZOONOTIC disease, and humans can get it and die.



How do they get it?

It is transmitted by a bite of an infected animal, usually a dog. In addition, contact of saliva or blood with a skin wound or mucous membrane will transmit the virus.





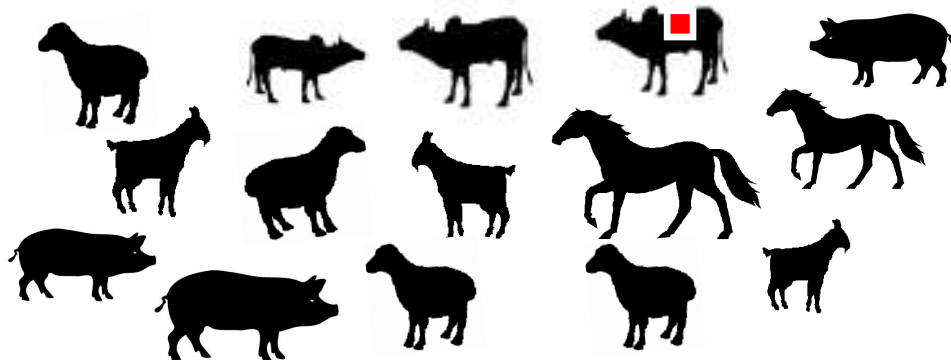
What will they look like clinically?

Symptoms include:

- excessive saliva
- drastic change in behavior
- gentle animals and carnivores become aggressive
- wild animals and herbivores become depressed
- wild animals may approach humans and appear friendly

How many animals in the herd will be affected?

This is a rare – but deadly – disease.



SYNDROMIC SURVEILLANCE

Will they die?

All animals with rabies will die from this disease. This type of disease is classified as: LOW morbidity, HIGH mortality.

Sick animals:

Cow, down
and depressed
due to rabies



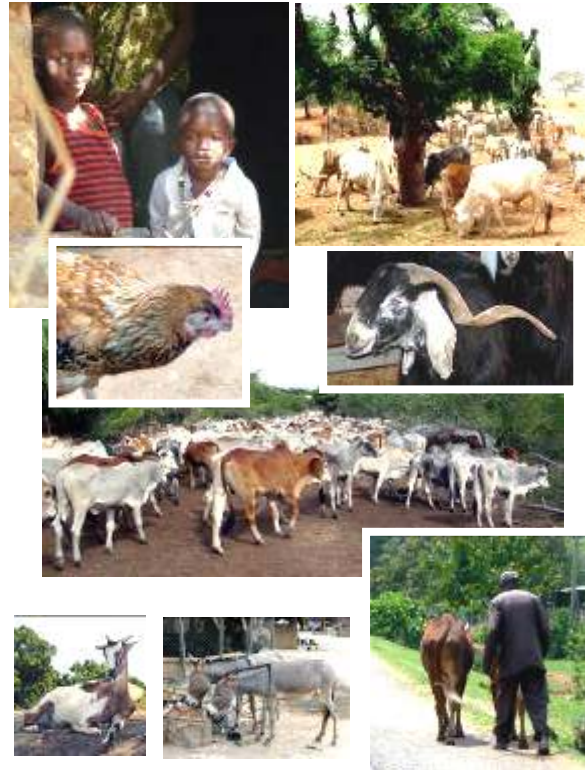
Dead animals:

There are no specific lesions associated with rabies.

**If you see this disease, please call your local
Veterinary Officer.**



SYNDROMIC SURVEILLANCE



Other manuals by Boca Publications Group Inc.

- ▶ A Field Manual for Collection of Specimens to Enhance Diagnosis of Animal Diseases
- ▶ The Illustrated Manual of Infectious Diseases of Livestock
- ▶ Foreign Animal Diseases, USAHA, Seventh Edition
- ▶ Agrosecurity: Protecting America's Food and Agriculture
- ▶ Agroterrorism Prevention – Reference Guide