WHAT ARE EXAMPLES OF EXTERNAL PARASITES?

- External parasites are those that live on the outside of the body. A few of the most common external parasites that affect animals are fleas, lice, mites and ticks

WHERE DO THE EXTERNAL PARASITES OF ANIMALS LIVE?

- There are two kinds of parasites, those which live inside an animal's body, such as worms and liver flukes, and those which live outside on the skin. This article looks only at external parasites such as mites, ticks and lice

HOW DO YOU CONTROL EXTERNAL PARASITES?

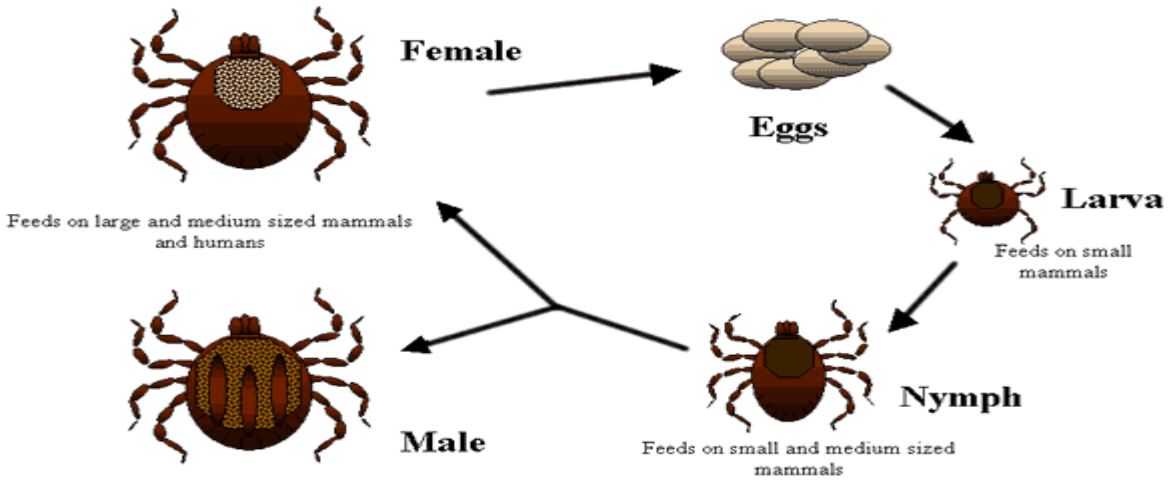
- The best way to prevent external parasites is to practice proper sanitation in your animals' pens and barns. For example, properly dispose of decayed wood shavings, vegetation, manure, garbage, and dead animals. Routinely drag pastures to scatter manure – this will dry out the matter and discourage larval development

2) CONTROL OF MANGE

1. Mites are very small insect and can usually not be seen with the naked eye.
2. Mites live on the animal for the entire life cycle and are spread among animals by close contact; they cause skin irritation, which leads to rubbing, scratching and hair loss.
3. Irritation from mites is usually seen on the head, neck and legs.
4. Mange is frequently associated with crowded conditions and poor husbandry.
5. There are different types of mange, depending on the type of mite involved: sarcoptic mange, demodectic mange, chorioptic mange and psoroptic mange.
6. Skin disease with irritation, scratching, rubbing and biting should always make one suspect mange or lice.

Life cycle of mites

- **2 Types Life Cycle**
  Surface mites- Stay on the surface of animal
- Burrowing mites-Burrow into the skin
- Spend entire life on host Adult lays eggs that hatch into larvae Larvae molt & become nymphs Nymphs molt and become adults



SYMPTOMS

1. Severe itching, particularly at night.
2. skin rash, sometimes called "scabies rash" raised, skin-colored or grayish-white tracts, bumps, or blisters on the surface of the skin, caused from burrows created by female mites
3. decreased feed intake and production.
4. Falling hair and rough, red skin can become visible.
5. Animals will scratch on anything

THE MOST IMPORTANT TYPES OF MANGE AND THE AFFECTED ANIMAL SPECIES

MANGE	ETIOLOGY	ANIMALS AFFECTED
Sarcoptic mange	Sarcoptes scabiei	All species
Psoroptes mange	Psoroptes ovis	Sheep, Cattle and Horses
Chorioptic mange	Chorioptes bovis	Cattle, Horses, Goats and Sheep

Demodectic mange	**Demodex bovis, D. ovis, D. caprae, D. equi and D. Phylloides**	**Cattle, Sheep, Goats, Horses, and Pigs**

Bovine Sarcoptic mange (Scabies) (9)

Demodecosis in cow (9)

PREVENTIVE MEASURES OF SHEEP MANGE

- Psoroptes ovis is a highly contagious and severe infestation of sheep. ... Psoroptic mange (ear mange) in goats and sheep is caused by P cuniculi, which is likely a variant of P ovis. P cuniculi typically infests the ears of goats but can spread to the head, neck, and body

1. **Notification:** Compulsory notification of the existence or suspected existence of disease.
2. **Isolation:** Infested animal should be isolated at once and all in contacts and treated carefully.
3. **Inspection:** Imported and newly purchased sheep should be inspected carefully before admission to new flock
4. **General hygienic measures:**

- ❖ All litter and bedding from infested premises should be wetted with petroleum and burnt.
- ❖ Diseased cows should be milked and attend to the last of the herd.
- ❖ Sheep should be sheared before dipping and the wool must be burnt.

HOW DO YOU TREAT MANGE IN SHEEP?

- ➢ Hot lime sulfur spray or dip is labeled for use against sarcoptic, psoroptic, and chorioptic mites in sheep.
- ➢ Treatment should be repeated every 12 days if needed.
- ➢ Certain formulations of permethrin sprays are labeled for mange in sheep and goats

CONTROL AND TREATMENT OF MITES

- ❖ Control and treatment of mange is by using insecticide, which may be applied as injectable drugs such as ivermectin, hand sprays or dips.

INSECTICIDES USED FOR MITES:

1. Gammatox paste dip: It is used for the treatment of sarcoptic mange (0.2 %) in water.
2. Diazinon: 0.1 % every three weeks (2-3 times)
3. Bayticol (pour-on) : 1m / 20 kg B.wt
4. Ivomac: S/c injection as 1 ml / 50 kg B. wt.

DO CATTLE GET MANGE?

- ❖ Cattle of any age are susceptible to demodectic mange, although disease is more evident in the young.
- ❖ Most cases are seen in dairy cattle in late winter or early spring. Infestation with D bovis is usually subclinical, and infestation may extend for many months

WHAT DOES MANGE LOOK LIKE ON A COW?

- ❖ **SYMPTOMS.** The surface mite is usually found on the neck, legs, and tail head.
- ❖ It produces limited hair loss, which only increases slowly in size. However, the lesions are obviously itchy which results in hide damage elsewhere as the cattle try to rub the affected areas

CAN HUMANS GET SCABIES FROM COWS?

- The mites that cause scabies in animals like horses and dogs are different to those that cause scabies in humans, but humans can still catch these scabies (also known as mange). ... While mange can live in domestic and farm animals for over a month, they only survive a few days in a human

3) CONTROL OF LICE

Lice

- Can cause weight loss, general unthriftiness, anemia
- Winter→spring problem!
- Lice are host-specific and spend their entire lives on the animal!
- Transmitted by direct contact
- Control with pesticide

- Lice infestations of livestock are usually seen during winter.
- Lice cause intense itching resulting in damage to hides and fleece from scratching.
- Lice are usually host specific and can be divided into blood sucking (Anoplura) and biting (Mallophaga) lice. They spend their entire lifecycle on the host.

Sucking lice The main sucking lice affecting cattle and sheep are:

- **Cattle**
  - *Linognathus vituli* (the long nosed cattle louse)
  - *Haematopinus eurysternus*
- **Sheep**
  - *Linognathus pedalis* (the sheep foot louse)
  - *Linognathus ovillus* (the blue sheep louse)

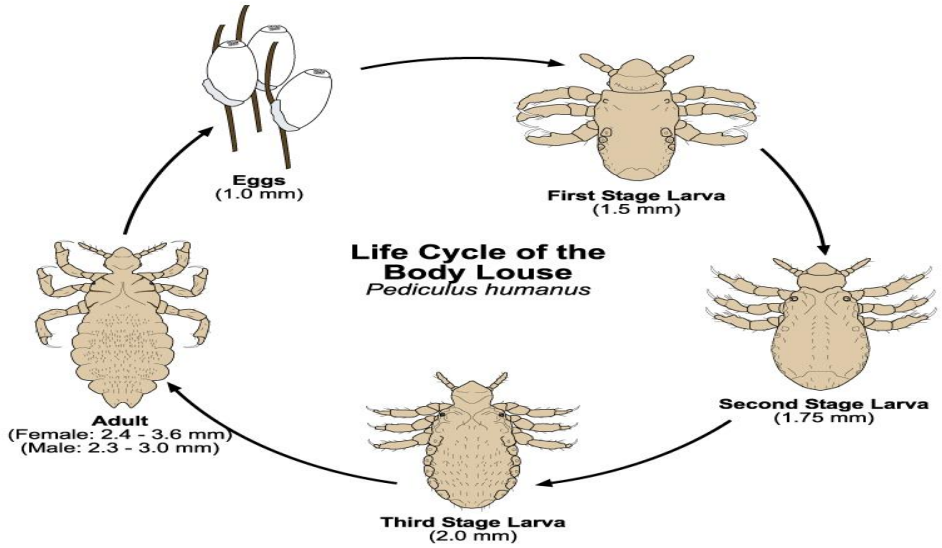
Biting lice The main biting lice affecting cattle and sheep are:

- **Cattle**
  - *Damalinia bovis* (*Bovicola bovis*)
- **Sheep**
  - *Damalinia ovis* (*Bovicola ovis*)

Affected animals	Sucking lice	Biting lice
Cattle	*Linognathus vituli, Haematopinus eurysternus*	*Damalinia bovis*
Sheep	*Linognathus pedalis, L. ovillus*	*Damalinia ovis*
Goats	*Linognathus stenopsis*	*Damalinia caprae*
Pigs	*Haematopinus suis*	-
Horses	*Haematopinus asini*	*Damalinia equi*

- Lice are very specific to the type of animal and will not spread to other animal species. They are spread by contact among animals of the same species..
- Heavy lice infestations can cause irritation and distress; Animals rub and lick themselves, and damage their hides.
- Sucking lice can also cause weakness from blood loss.
- Lice are usually associated with unhealthy livestock in crowded conditions.
- Often heavy lice infestations are secondary to some other disease problem, largely because sick animals do not groom themselves.

LIFE CYCLE



Note: Lice take several blood meals daily in larval stages and as adults.

CONTROL OF LICE:

- Control by using insecticides (dusts, pour-ons, spot treatment, hand-sprays, and dips) besides application of general hygienic and sanitary measures

HOW DO YOU CONTROL LICE IN CATTLE?

- Fall treatment using a systemic product is very effective for sucking lice," Williams says.
- "For chewing lice, there are several brands of pyrethroid-based pour-ons that spread over the body via skin oil." Spraying is an option, too, but doing so on cold days can stress the animal, he adds

WHAT CAUSES LICE IN SHEEP?

- Sheep lice are an obligate parasite which means they spend their entire lifecycle on sheep.
- Lice feed on flakes of dead skin, secretions and bacteria normally found at the surface of the skin.
- This causes irritation and therefore sheep bite, rub and pull at their wool

HOW LONG DO LICE LIVE OFF SHEEP?

- Lice spend their entire life on the skin or wool of sheep. The life cycle takes about 34 days at a minimum. Female lice live about 27 days and males about 48 days. However, there are reports of lice surviving for over 120 days

HOW DO I KNOW IF MY SHEEP HAVE LICE?

- Look for sheep showing signs of rubbing or biting at their fleece.
- Rubbing is a very powerful indicator of infestation and sheep will begin to rub with quite low lice numbers

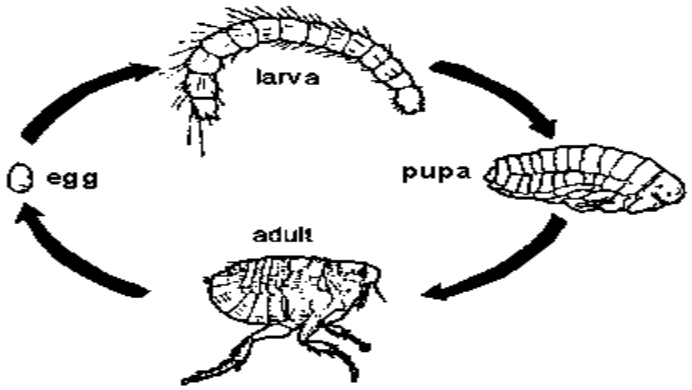
DOES IVERMECTIN KILL LICE ON GOATS?

- Not only does it kill lice, but it also helps to control flies.. ... Whether or not theivermectin horse paste dewormer will take care of lice in goats depends entirely on how much of the ivermectin actually makes it into the bloodstream

4-CONTROL OF FLEA INFESTATION IN ANIMALS

- Fleas are small, 6 legged, blood-sucking parasitic insects that feed on warm-blooded animals.
- All fleas are wingless, so their main mode of travel is jumping.
- They can jump more than 100 times their own length facilitated by their relatively long hind legs! Furthermore thay are flattened from side-to-side and have hairs and spines, which makes it easy for them to travel through hair.

LIFE CYCLE



SIGNS OR SYMPTOMS

- **Flea** bites can cause dermatitis, allergies and anemia when **fleas** are present in large numbers.
- **Fleas** are immediate hosts for helminthes (tapeworms) that parasitize domestic **animals**.

- Clinical signs of flea infestation can result in direct or indirect signs. Direct signs are attributable directly to the presence of the flea while indirect result from agents carried by fleas - the so called Flea borne diseases.

DIRECT When fleas bite, they can cause a range of signs including:

1. Mild skin irritation
2. Intense itching and biting of skin
3. Hair loss
4. Skin infections (‘ hot spots’) - These arise due to the blood sucking behaviour of the flea "injecting in" skin surface bacteria into the animal resulting in a localized skin infection evident in the area around the bite.
5. Very heavy infestations in young animals can result in excessive blood loss resulting in anaemia and occasionally death.

INDIRECT

- Fleas can also transmit bacterial diseases to both animals and humans. Human fleas for example can transmit serious diseases in humans such as Bubonic plague.
- In Ireland and the UK, dog (and cat) fleas can transmit the tapeworm Dipylidium caninum – known commonly as the dog tapeworm or sometimes even the flea tapeworm (see photo).
- This happens when flea larvae feed on the eggs of this tapeworm. Once swallowed, the tapeworms begin to develop in the gut of the flea into immature forms called cysticercoids.
- When grooming themselves, dogs and cats may ingest fleas that contain the tapeworm cysticercoids. Inside the digestive tract of dogs and cats the cysticercoids are released and develop into adult tapeworms in the intestine.

CONTROL OF FLEAS

TWO ASPECTS OF CONTROL EXIST -

A) TREATING AN EXISTING INFESTATION

a. A variety of formulations containing various active ingredients exist for treating flea infestation.

b. Some products also repel or kill ticks. Presentations include collars, spot-ons, shampoos, dips, injections, powders, sprays and oral medications.

c. Some products contain insecticidal products that kill adult fleas while others contain insect growth regulators that target developing stages.

d. The duration of protection is generally very short with shampoos, dips, powders and sprays while collars tend to provide more prolonged protection. To achieve the goal of treating existing infestation, you need to use a product that it fast acting as this will result in early resolution of clinical signs.

B) PREVENTING FUTURE INFESTATIONS

a. To stop repeat infestations, you need to break the flea life cycle once and for all.
b. Veterinary practitioners recommend using flea products on all pets in the house all year-round to maximize likelihood of this break.
c. Using a long acting product is best for achieving prevention of future infestations as it minimizes the likelihood of forgetting to treat the animals concerned i.e owner compliance is improved.