

The Donkey Health & Welfare Manual

The Donkey Sanctuary Kenya



Kenya General Edition 2009

ABOUT THE MANUAL

This manual is part of a course designed to give a basic understanding of key topics in the health and welfare of the donkey.

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This material in this manual is adapted from previous Donkey Sanctuary training courses. We gratefully acknowledge input from DS contributors past and present as well as:

- A Manual for the Primary Animal Health Care Worker: Food and Agricultural Organization of the United Nations Rome, 1994
www.fao.org/docrep/T0690E/T0690E00
- Horse Health Care by David Hadrill
ITDG Publishing (20 Feb 1999)
- Where There is No Vet by Bill Forse
Oxfam Publishing (09 Sep 1999)
- WSPA (World Society for the Protection of Animals)
www.wspa.org.uk

Unit 1. Introduction

The Donkey Sanctuary

The Donkey Sanctuary was founded in 1969 by Dr Elisabeth D Svendsen, MBE and was registered as a charity in 1973. The aims of The Donkey Sanctuary are to prevent the suffering of donkeys worldwide through the provision of high quality, professional advice, training and support on donkey welfare.

In 1984, The Donkey Sanctuary started its first overseas project outside the UK. There are now major projects in Mexico, Ethiopia, Egypt, Kenya and India. Free advice and technical support is offered for donkeys and mules anywhere in the world.

The philosophy is to **“offer help to look after the welfare of working donkeys, mules, and the people who rely on them irrespective of their location”**.

The Donkey Sanctuary is concerned for the welfare of all donkeys and mules which are an important part of sustainable economic development for many countries. Good welfare in donkeys is associated with good welfare in people.

The Donkey Sanctuary aims to:

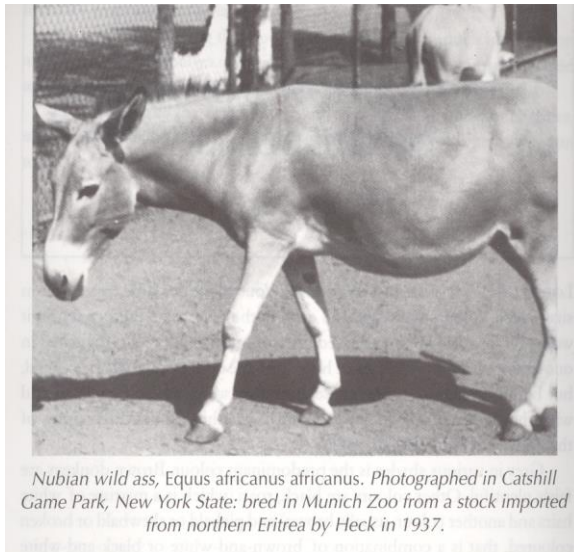
- Prevent problems before they occur and address issues of disease or poor management
- Utilise all available knowledge to ensure an ‘evidence based approach’
- ♦ Strengthen the capacity and motivation of owners to treat and effectively manage their own donkeys
- ♦ Support the local animal health and medical services to promote and maintain good welfare in donkeys
- ♦ Develop societal concerns for the welfare of donkeys
- ♦ Ensure cost effectiveness
- ♦ Create accountable and transparent work that is open to scrutiny

In Africa, donkey numbers continue to increase. In Kenya, there are currently around 600,000 donkeys. They are an important source of transport, but, despite this, donkeys have often been given less attention and medical care than other livestock. Medical conditions suffered by donkeys can be treated, and improvements can be made in production and welfare. The Donkey Sanctuary aims to supply information to medical workers and owners so that the donkeys in Kenya are healthy, well-managed and not allowed to suffer unnecessarily.

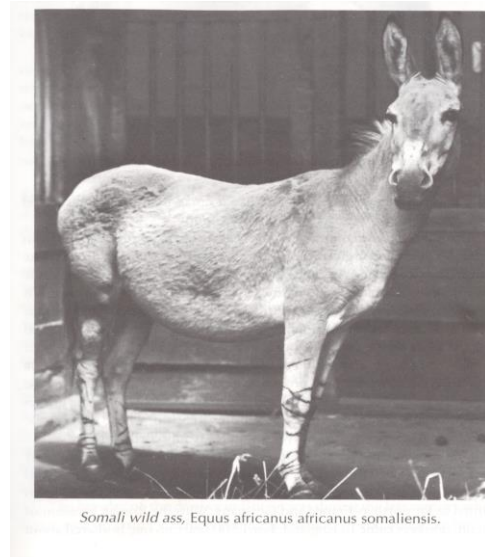
Unit 2. Domestication of donkeys

Genetic fingerprints indicate that wild African asses were the ancestors of domestic donkeys, making donkeys the only important domestic animal known to come from Africa.

The Somali wild ass is the only living race of African wild ass. The Nubian wild ass is now believed to be extinct [the last wild individuals being seen in the 1930's].



Nubian wild ass



Somali wild ass-notice the markings on the feet

Unit 3. Welfare, Ethics and Legislation

Welfare

Good welfare is about being healthy and having what is needed both physically and mentally

Just like humans, animals need:

- Sufficient feed and water
- An appropriate environment including shelter and a comfortable resting area
- Rapid treatment when sick, injured or in pain
- Sufficient space and the company of their own kind
- Conditions and treatments that avoid mental suffering.

The above are commonly called the **five freedoms**.

Ethics

Ethics encompass how you behave, and how you treat animals.

In society, the way animals are treated is determined by many things including:

- how other people treat animals
- how you have been taught to treat animals
- your religious belief

People will treat animals well if they:

- Understand that an animal can feel pain and has needs like you or I.
- Know that the tradition of many cultures is to look after animal well and treat them with respect
- Know that treating animals better often means they are healthier, live longer and can be more productive.
- Know that by treating animals better we are creating a better society for people.

Legislation

Legislation that deals specifically with how we must treat donkeys and other animals is:

CHAPTER 360: PREVENTION OF CRUELTY TO ANIMALS ACT

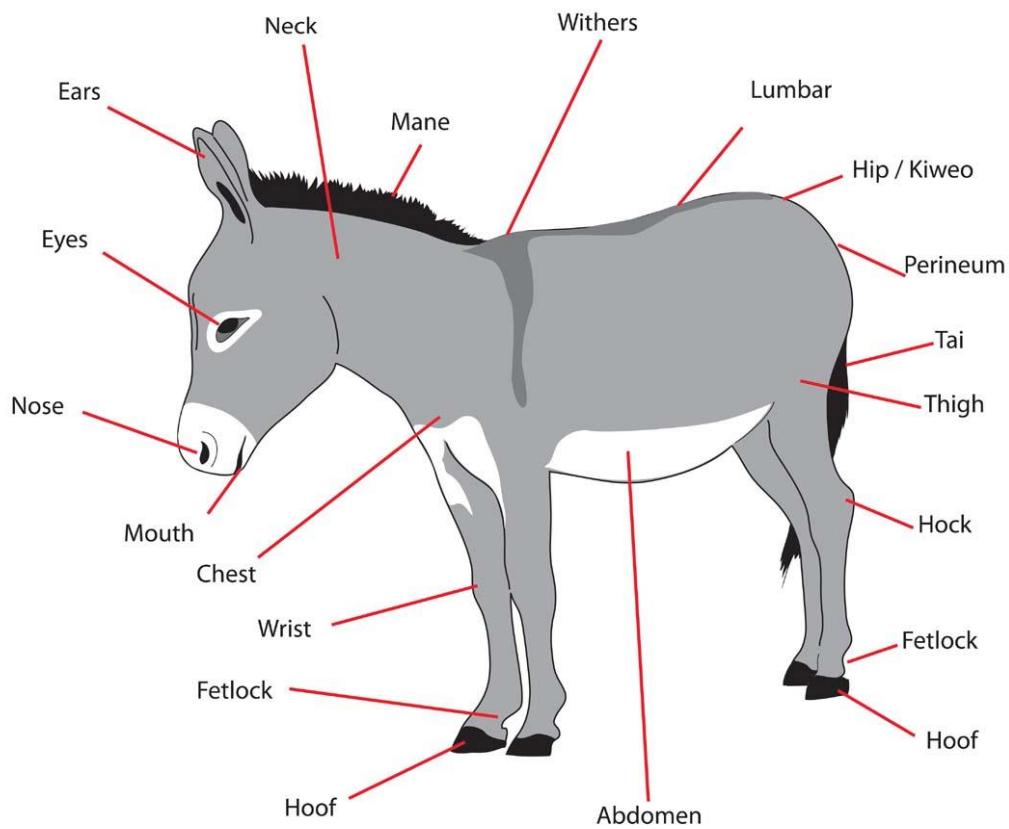
PART II – OFFENCES IN RELATION TO ANIMALS (in summary) states that:

Any person who, among other cruelties:

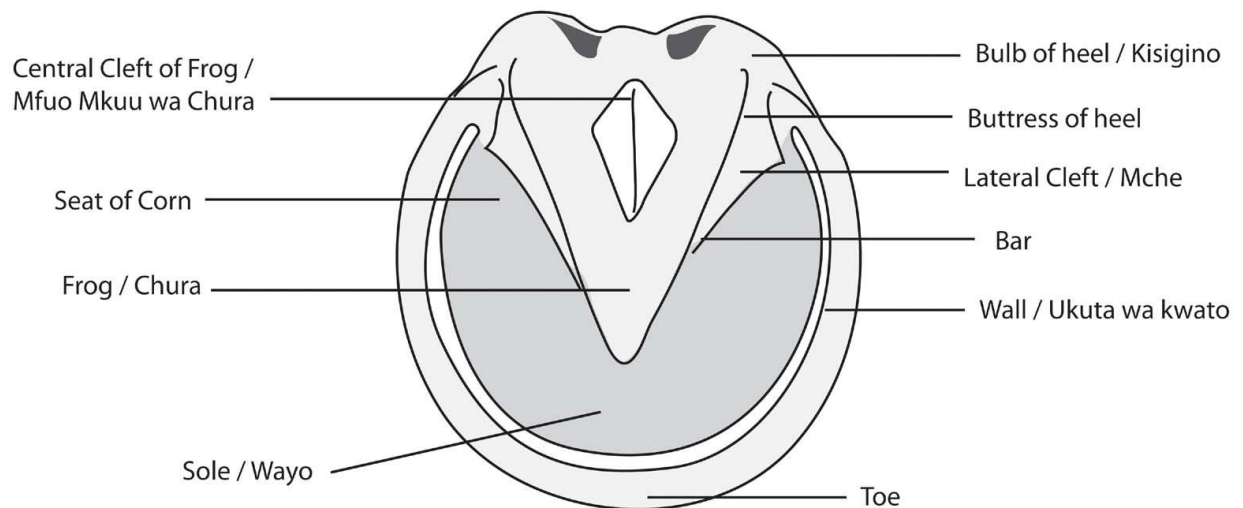
- a. Cruelly beats, kicks, ill-treats, over-rides, over-drives, over-loads, tortures, infuriates or terrifies any animal; or
- b. Uses any animal which is so diseased, injured or in such physical condition that it is unfit to be used; or
- c. Conveys, carries, confines or impounds any animal in such a manner or position as to cause that animal unnecessary suffering; or
- d. Without sufficient cause, starves, under-feeds or denies water to any animal; or
- e. Being the owner of the animal, keeps it in a grossly dirty or verminous condition or, without reasonable cause or excuse, fails to procure or administer veterinary treatment or attention for the animal in case of disease, injury or delivery of young; or
- f. Being the owner of any animal, fails to have it destroyed where the animal is so seriously injured or diseased that to prolong its life would cause it unnecessary suffering; or
- g. Being the owner of any animal, without reasonable cause or excuse, does or omits to do any act which causes unnecessary suffering to the animal;

.....may be jailed or fined by the court.

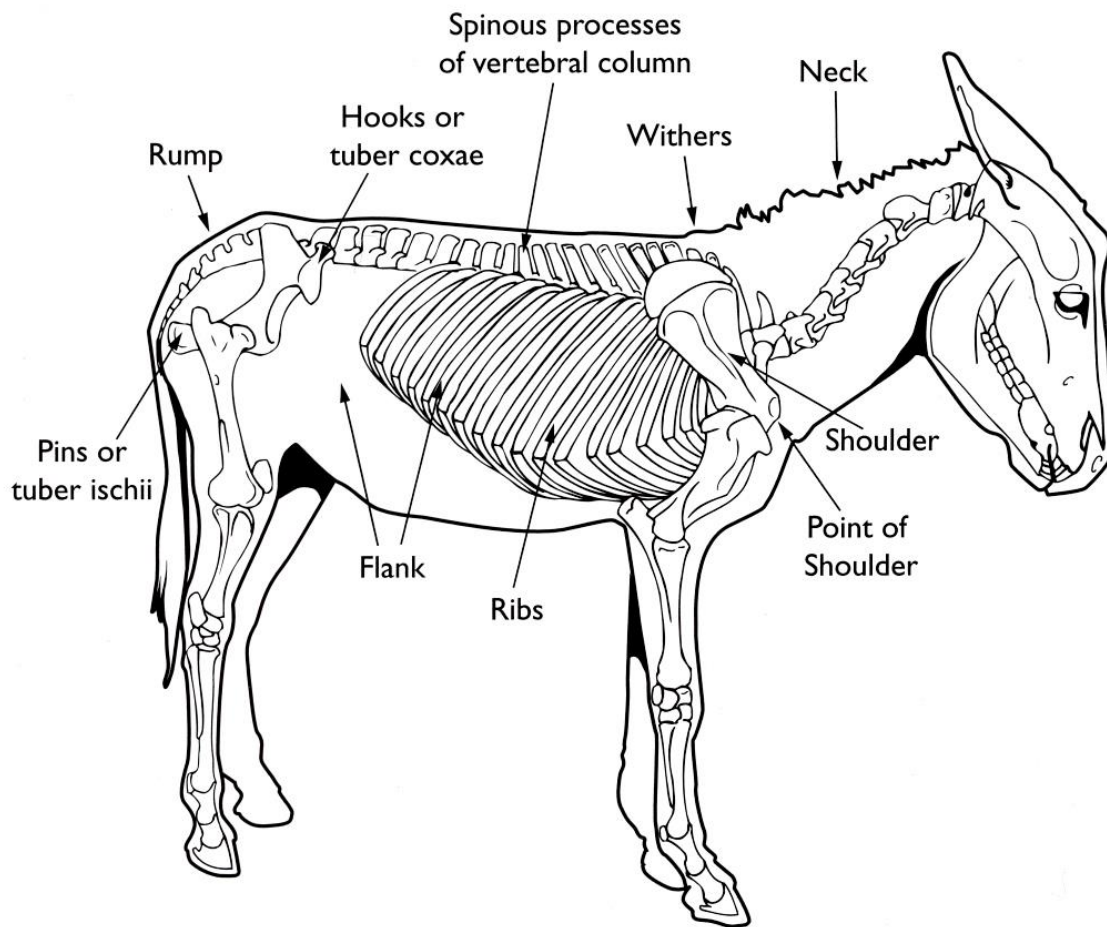
Unit 3. *Name and Function of Different Parts of the Donkey*



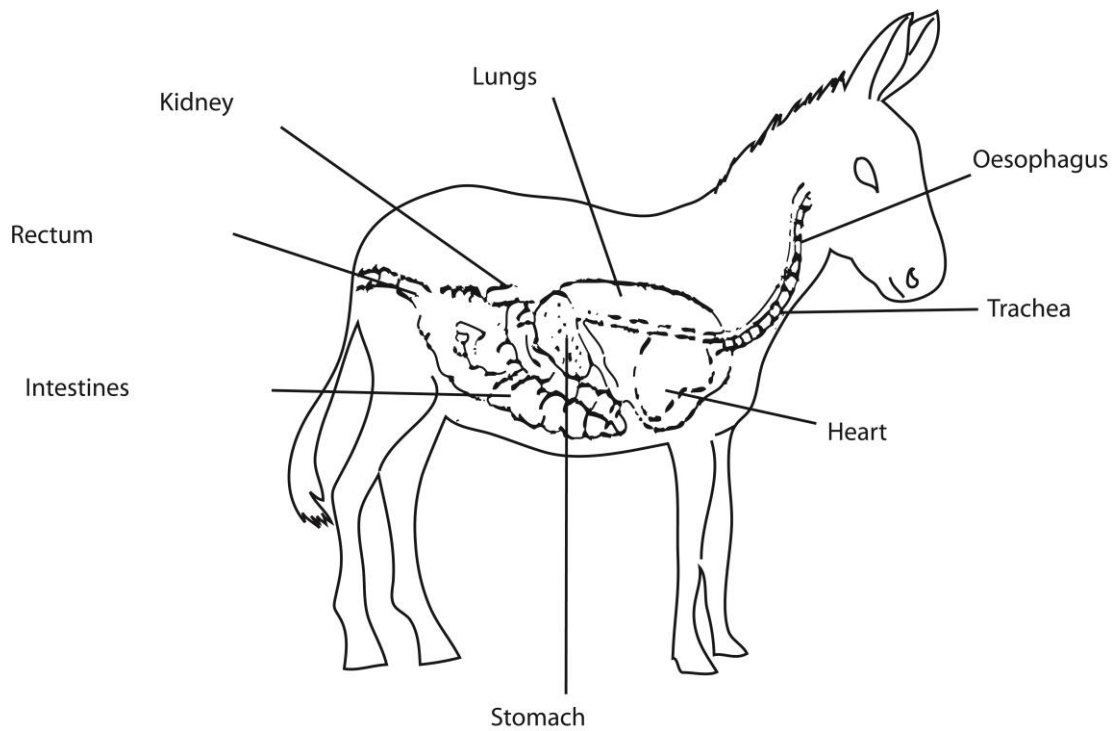
External body parts



The Hoof



Skeletal Structure



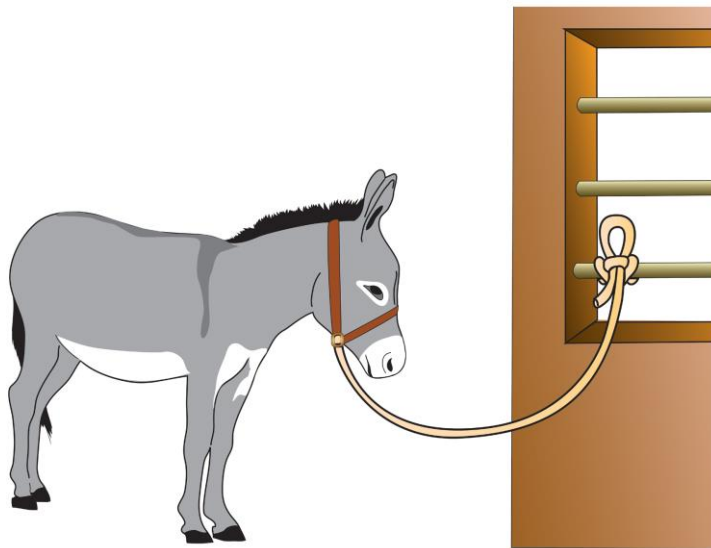
Internal body parts

Unit 4. Restraint

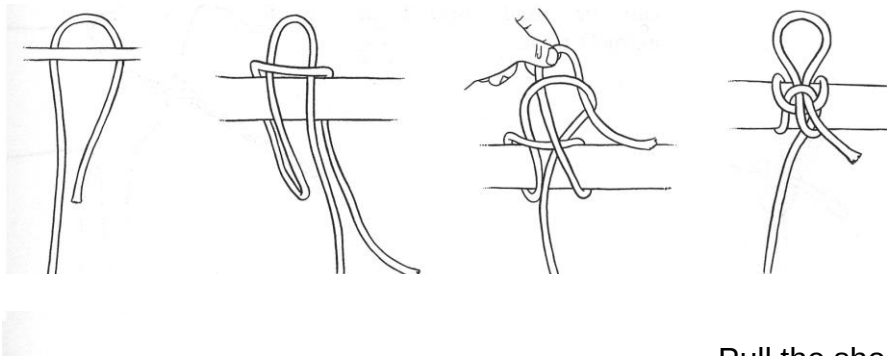
How to tie useful knots

Quick-release knots

Donkeys should be tied using a knot which is easy to release. Then, if the animal goes down, the knot can be undone quickly, reducing the risk of strangling or injury.



To tie this knot, put a loop through a loop through a loop, and pull tight.

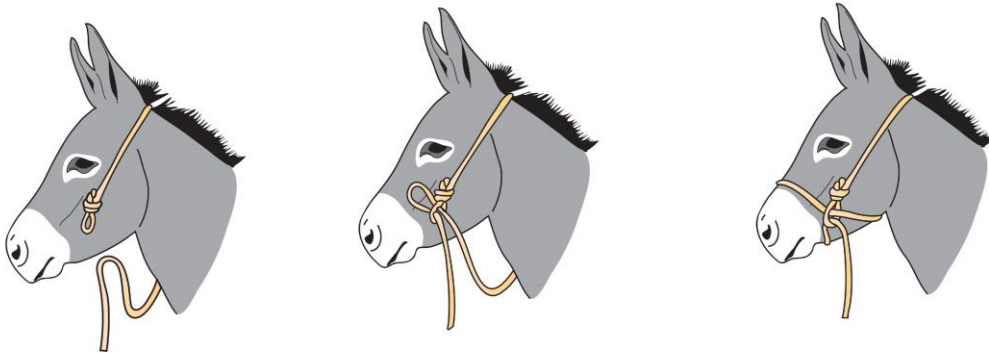


Pull the short end to untie quickly.

How to restrain donkeys

Halter

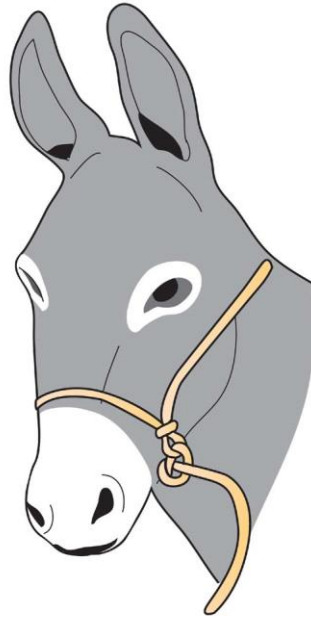
If a donkey's head is restrained, it can be led or held for procedures such as injections. A halter can be made from a piece of sisal or cotton rope. Avoid using nylon rope against the skin. A simple slip halter can be made with loops.



A better halter can be made from about 5 metres of rope. The rope should be about 15mm wide. Make a small loop at one end of the rope and another loop about 30cm along. Then thread the end through the loops as shown in the next picture.



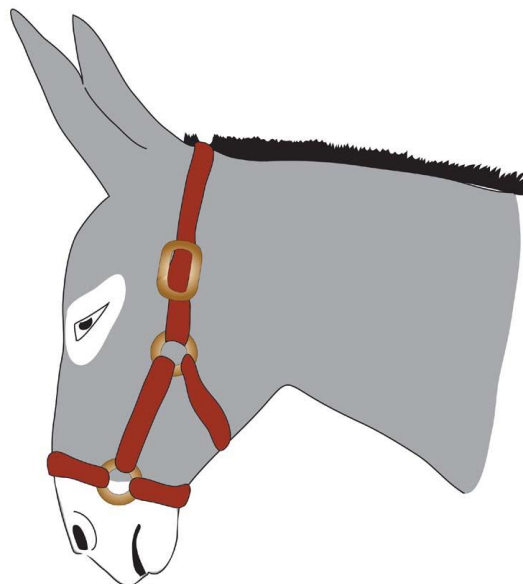
The halter on the donkey



Make sure that the fixed piece of rope between the two loops is above the nose. A small knot made with the free end of the rope stops the halter becoming too tight across the head.

Head collar

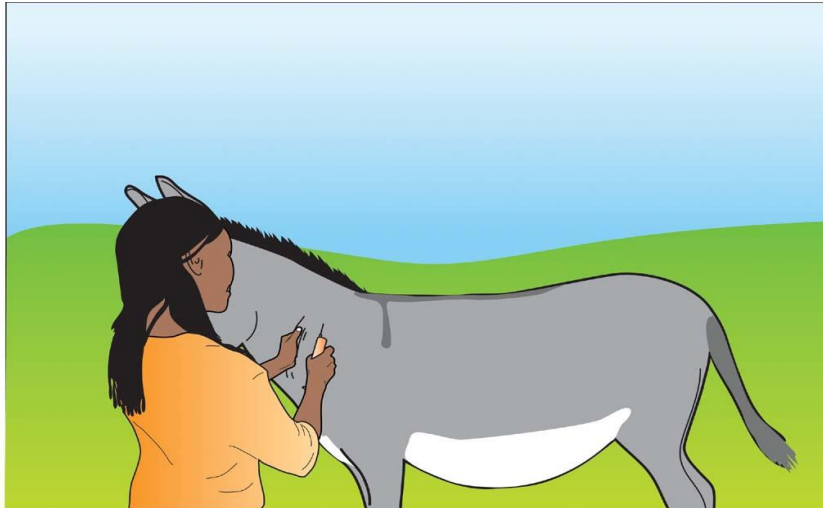
Some animals learn to slip halters off over the ears. A head collar is better.



Head collars are suitable for donkeys, but should have buckles to adjust the size of the straps around the nose. This way the head collar can be made big enough to go around a donkey's nose.

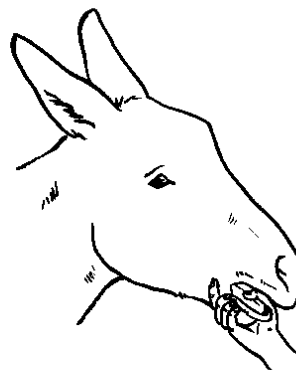
While giving an injection, if you pinch a fold of neck skin and either stroke the animal or make suitable sounds to distract it, it is possible to distract a nervous donkey that is afraid of needles.

If the animal is shy of injections, ask the person holding the head to keep a hand behind the animal's eye on that side, so it cannot see the syringe coming.



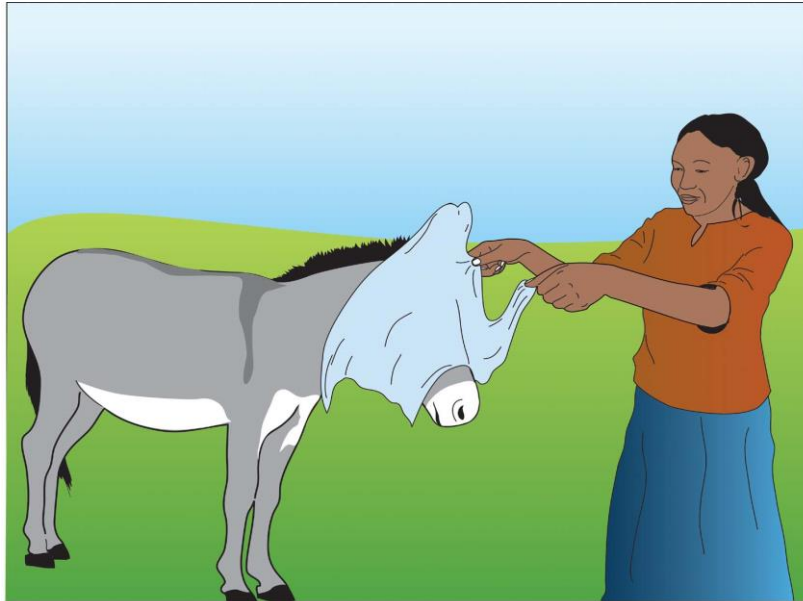
CHIN HOLD FOR DONKEYS

To hold a donkey's chin in this way, put the flat of your hand under the animal's chin, then put your thumb across its mouth and grip with your fingers.



Blindfolding

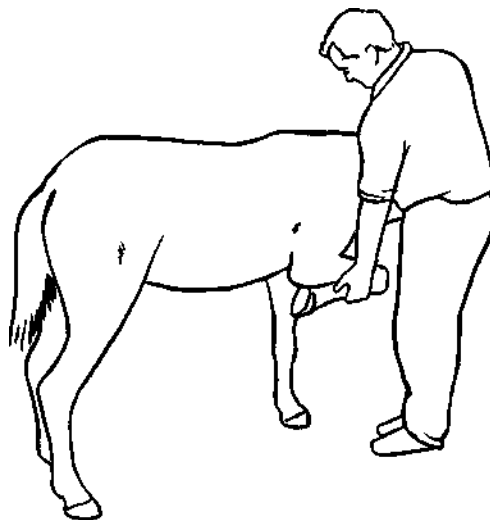
Covering a donkey's eyes with a towel or similar cloth will often make it stand quietly. In a confined space the donkey may back away at first and become frightened if it collides with things. Blindfolding is more useful in the field.



How to prevent kicking

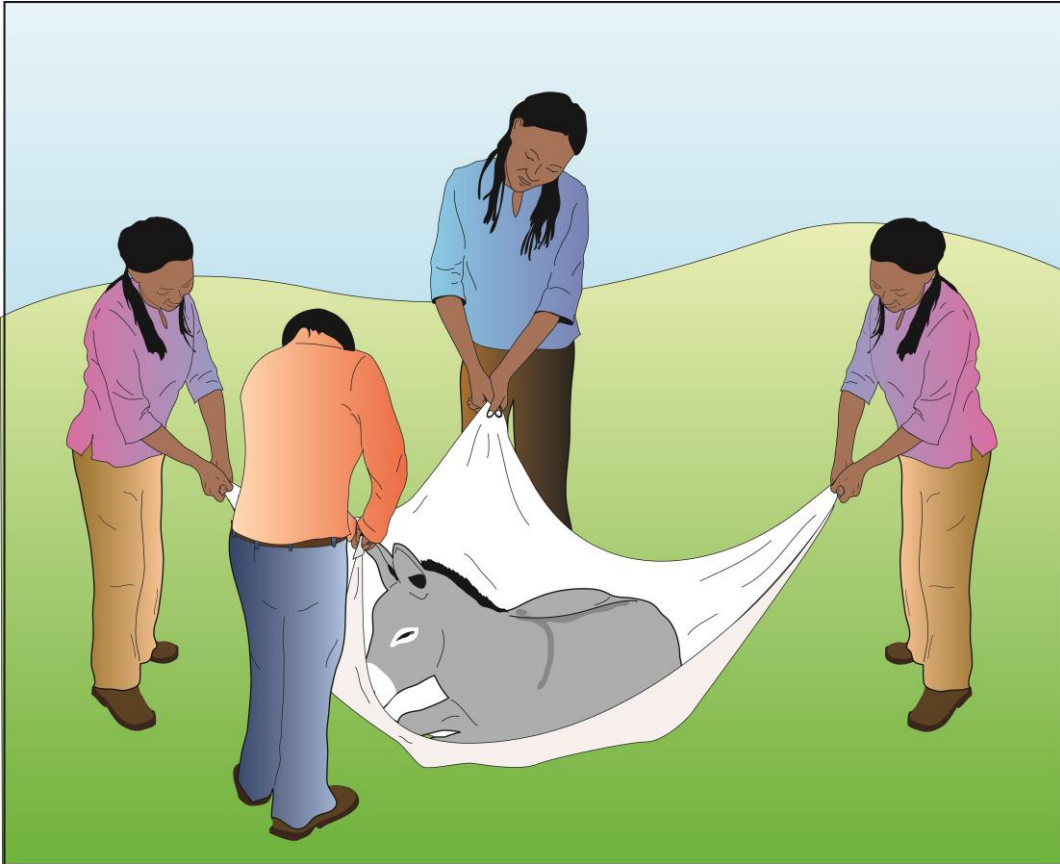
Lift up a front leg

This technique helps to prevent kicking from a back leg. It can help to keep the hind legs still so work can be done on them. Pick up the front leg on the same side as the back leg on which you are working.



It is easier if two people restrain the donkey. One person keeps the head still while the other holds up the front leg. This method is not suitable for a very nervous donkey. If possible, get a vet to sedate a very difficult animal with an injection. Do not sedate if the animal has to go back to work immediately afterwards.

A donkey that is too weak to stand can be rolled on to a strong sack and dragged along.



If a donkey is too weak to stand and is suffering, consider euthanasia. After some time, the muscles become damaged and the animal is unlikely ever to stand. A donkey is unlikely to stand again if it has been down for more than five days.

Unit 5. Ageing & Teeth

- If the feet and the teeth are looked after, a donkey can live and work for many years.
- Donkeys can be aged with some accuracy up to the age of 5 years by looking at the front and cheek teeth.
- After about 5 years you can get a rough idea of the age of a donkey.
- As well as age, the look of the tooth is also affected by the type of food the donkey eats. Donkeys of the same age can show a natural variation in the condition of their teeth.

How to tell the age of a donkey by its teeth

Donkeys may live to more than 30 years. You can estimate the age of younger donkeys by looking at the changes in growth and wear of the upper and lower front teeth.

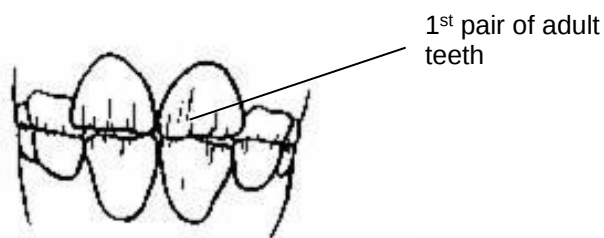
Like us, donkeys first grow a set of temporary or 'baby' teeth and later adult teeth. Unlike us, donkeys' teeth keep growing during their lives and their teeth wear down as they eat.

We work out the age, first by which of the front teeth have grown. Later we estimate the age by how much the front teeth have worn down.

Using the teeth to tell the age up to 4½ years old is accurate. Above this age, the teeth give a guide, but the changes are less accurate indicators of the donkey's age.

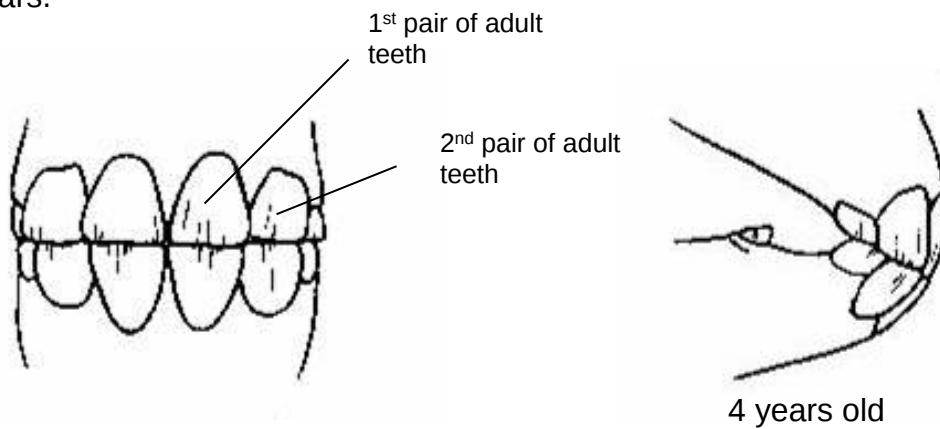
Donkeys have six top and six bottom front teeth. Foals grow all the temporary set of front teeth in their first year of life.

The adult teeth come later. The middle pair of adult teeth appears when the animal is 2½ to 3 years' old.



3 years old

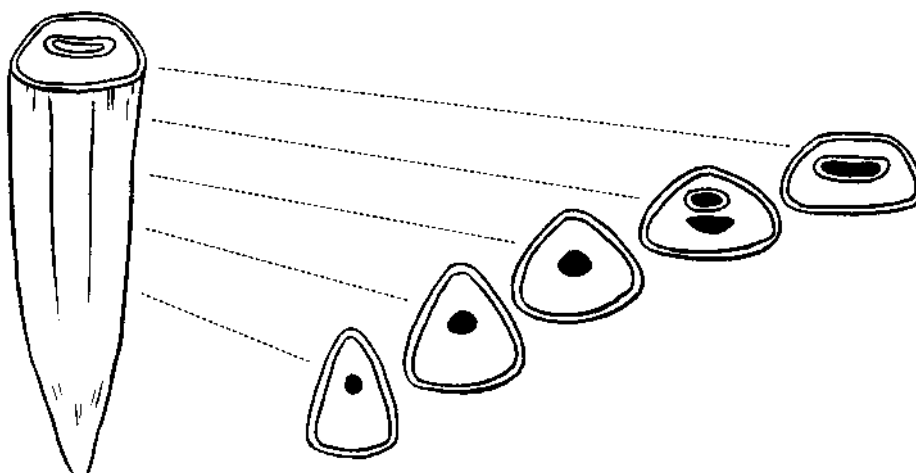
The next adult front teeth grow through at 3½ and 4½ years old. Look for the difference in size of the big adult and small temporary teeth at the age of 3 or 4 years.



At 5 years the animal has all its adult teeth. Over the next years the age is estimated by the wear of the front teeth. This shows as changing patterns on the biting surface of these teeth. The pattern changes because the tooth is not the same inside all the way down. Therefore the biting end looks different as the tooth wears down.



If we removed a whole front (incisor) tooth from the donkey's head, it would look like this:



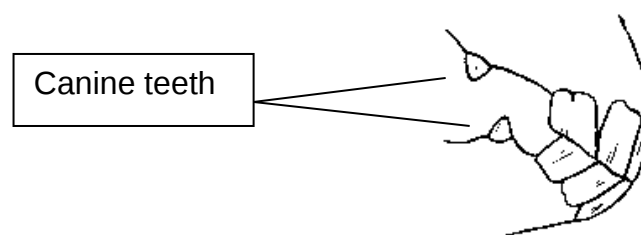
If we cut across the same tooth in different places, this would show how it would look on the biting surface as the tooth wears down during the animal's life.

When they first come through, the front teeth have a hollow in the biting surface. This is called the 'cup'. As the horse gets older, this hollow gets more circular and grows to the back of the tooth, and is known as the 'mark'. A dark line is seen on the biting surface, in front of the cup. This is called the 'star'.



Canine Teeth

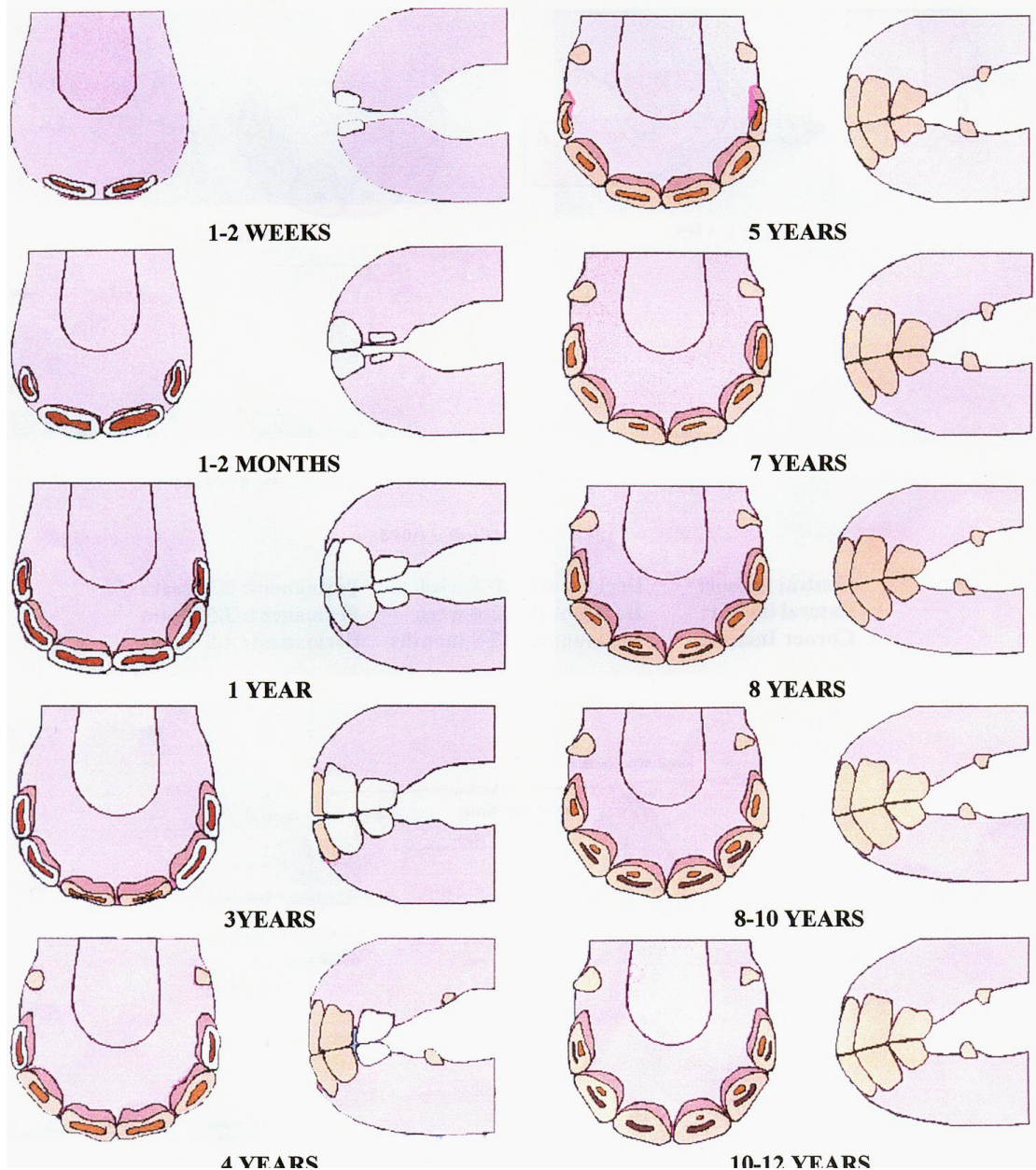
Nearly all male donkeys and some female donkeys have canine teeth. These erupt at about 5 years, so if they are present, they also tell us that the donkey is at least 5.

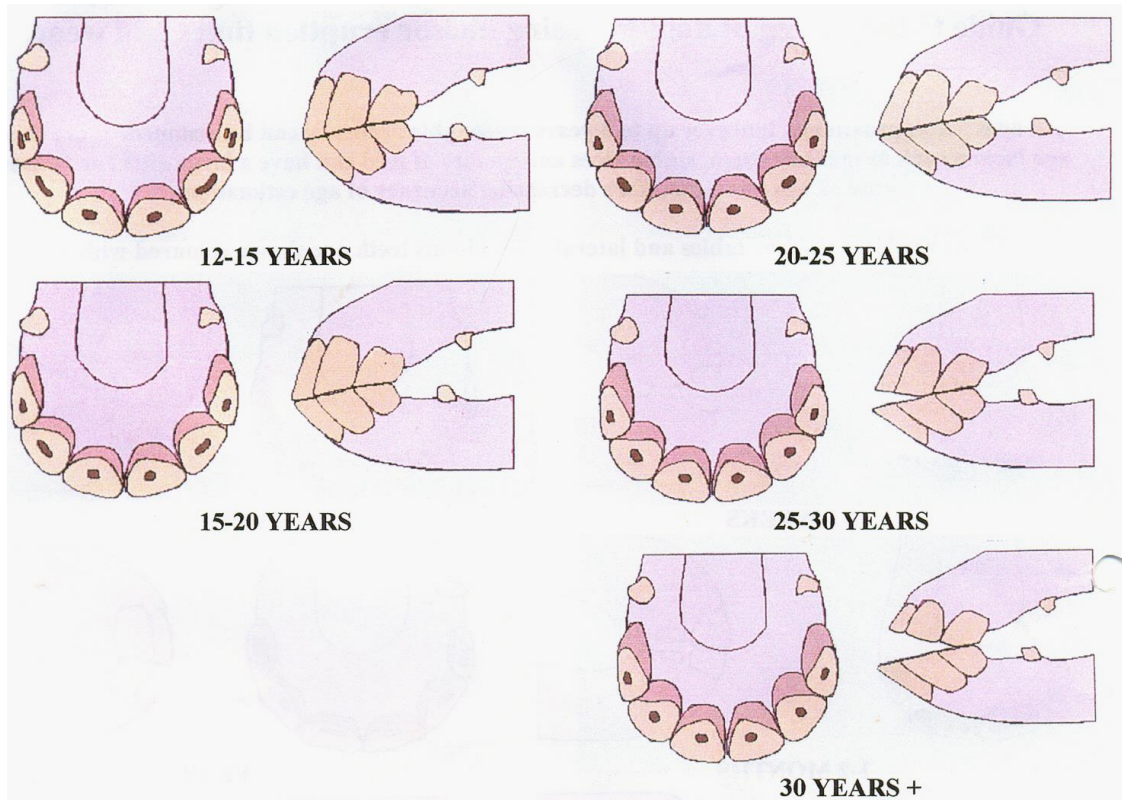


Guide to the ageing of donkeys using incisor eruption times and wear.

All ages are approximate, however up to 8 years reasonable accuracy can be assumed, above this age factors such as mal-occlusion, stable vices and quality of feed can have a large effect on incisor rate of wear and therefore decreasing accuracy of age estimation.

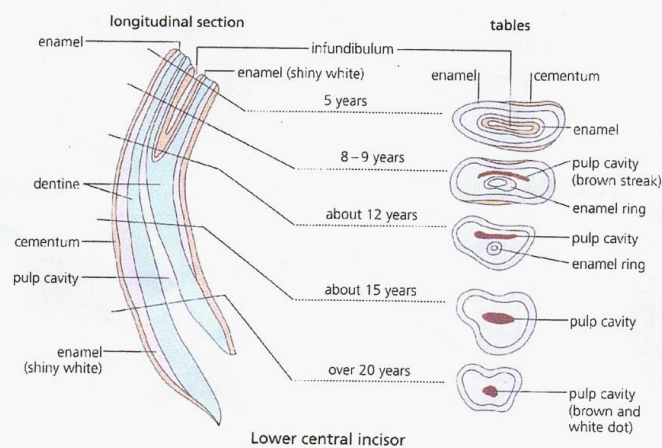
Views are lower incisor tables and lateral. Deciduous teeth are shown coloured white.





Incisor Eruption Times

Central incisor:	Deciduous:	0-1 week	Permanent: 2.5 Years
Lateral incisor:	Deciduous:	2-4 week	Permanent: 3.5 Years
Corner Incisor:	Deciduous:	7-9, months	Permanent: 4.5 Years



Teeth rasping

The back teeth of some donkeys do not wear down normally causing the teeth to have sharp edges. These sharp edges cause wounds inside the mouth making the donkey feel uncomfortable while chewing.

The sharp edges develop on the outside [the side nearer the inner lining of the mouth] of the top rows of cheek teeth and on the inside [the side nearer the tongue] of the bottom cheek teeth

Some of the signs seen when a donkey has sharp edges on the back teeth [cheek teeth] are:

- Loss of feed from mouth while eating or difficulty chewing
- Loss of body condition especially old donkeys
- Undigested feed in manure
- Foul odour from the mouth or nostrils
- Packing of feed in the mouth seen as a swelling on the cheeks
- Excessive salivation
- Exaggerated tongue movement
- Bleeding from the mouth

How to manage teeth with sharp edges

The tool used to file down the sharp edges is called a rasp. A rasp is a kind of a file on a handle. Ideally, for upper teeth, a rasp with a bend in the handle is used, and for lower teeth a straight one is used.

Rasping

- Ensure that the assistant restrains the donkey well using a halter.
- You might require a second assistant.
- Open the mouth widely using the large space in the mouth
- Grab the tongue and pull aside
- Check for the affected teeth by feeling the sharp edges. Be careful
- Guide the rasp over the teeth with sharp edges
- Angle the rasp to smooth down these edges of the rows of teeth
- Always feel the rasped edges if they are smooth during rasping if not continue.
- Flush the rasped row of teeth with water using a syringe [not with the needle on] to remove debris
- Arrange to rasp the teeth again sometime if you feel the teeth are not smooth to your satisfaction

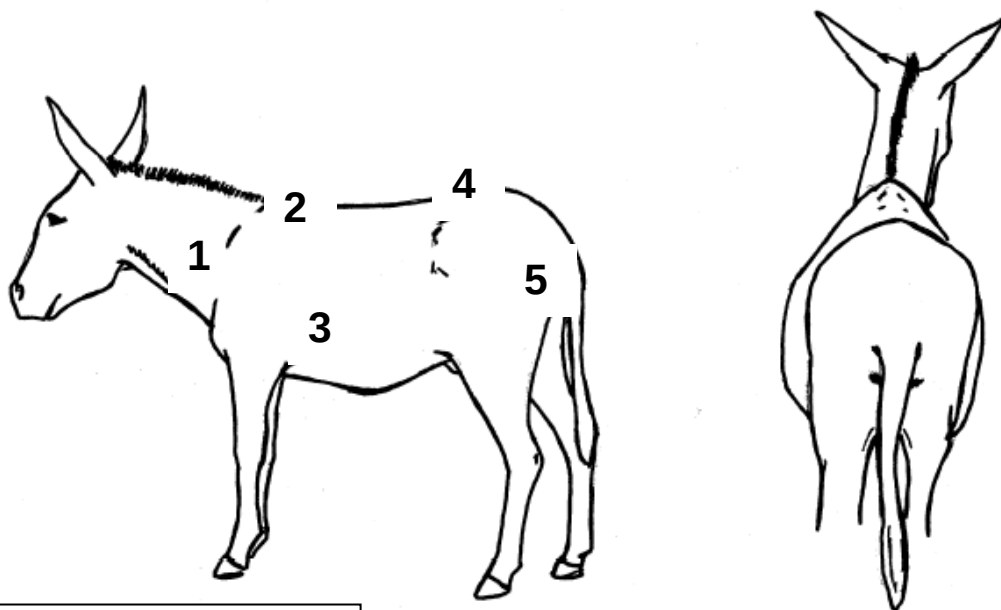


Unit 6. *Body Condition Scoring*

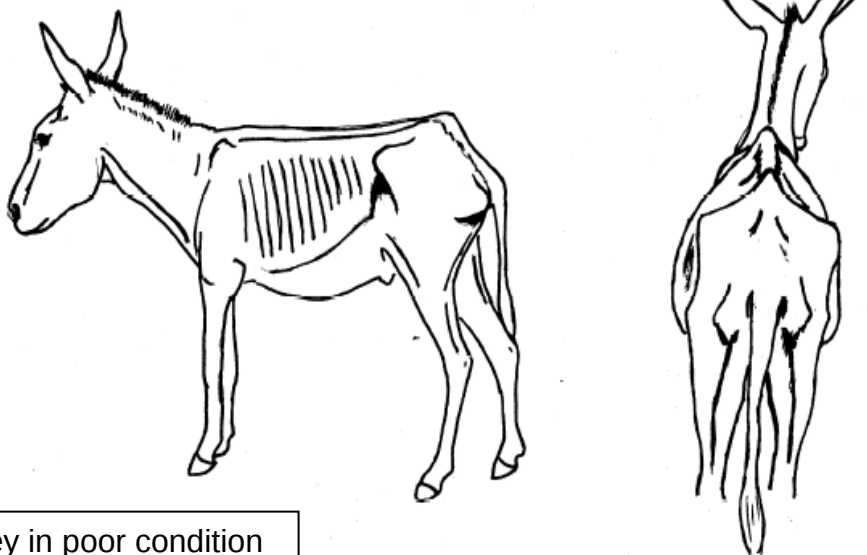
The body condition of a donkey gives us information on its health and how much food it is getting.

There are different ways to do this. You will be taught a way that looks at:

1. Neck and Shoulders
2. Withers
3. Ribs and Belly
4. Back and Loins
5. Rump



Donkey in good condition



Donkey in poor condition

Unit 7. *Clinical examination*

Finding out what the problem is:

Before you treat any animal you must find out what the problem is. Normally you do this by listening to what the owner tells you, asking the right questions and then examining the donkey. From this information you can then decide what the full extent of the problem is.

The process is similar for all animals with some variation in the type of examination and questions asked.

Stages in examining a donkey can be broken up as follows:

- Establishing owner's complaint and asking the right questions
- Preliminary inspection
- Preliminary examination
- Systematic general examination
- Further, more specific examination
- Compiling a specific problem list
- Establishing a series of differential diagnosis
- Keeping good records

Establishing owner's complaint and asking the right questions

Finding out information about a donkey that is sick is important before examination takes place. This will help guide the examination and subsequent treatment.

- Before you examine any donkey you need to find out information from the owner to help you discover what is wrong.
- There are basic questions you can ask in most cases and more specific ones to ask in certain cases.
- It is important that you don't ask questions in such a way that might encourage an owner to give you the answer he thinks you want rather than what you need to know. This is called a "leading question" and should be avoided.
- Owners may give misleading information based on what they think the problem is. Sometimes they may tell you something in order to get a certain treatment, regardless of whether it is needed or not. Owners may also emphasise signs that they think are important and not report others. You can check by asking questions in a different way, and also by checking if the signs or behaviour of the donkey match the information given. For example if the donkey is well hydrated and the owner says it hasn't drunk anything for more than a week, then it is possible that the owner hasn't seen the donkey drink - but you can tell

from its physical condition that it has obviously taken water from somewhere.

Questions to ask the owner

There is no set list of questions. They will depend on the problem, the owner's answers and what you can actually see.

1. The first question is to ask the owner to describe the problems in detail. This will include asking, when or how did it start or occur, how has it progressed, etc. Owners usually know their donkeys well and can tell you a lot.
2. Depending on the type of problems, there are a limited number of possible conditions that could be affecting the donkey. Once you have an idea of these, you can ask the following questions (if relevant):
 - a. Is the donkey eating and drinking?
 - b. Is the donkey coughing?
 - c. Are other donkeys in the group affected?
 - d. Is it scratching?
 - e. What stage of pregnancy is the donkey in?

(So, for example, if you suspect that the disease is one that could spread to other donkeys, you can confirm this by asking if any other donkeys are affected).

It is useful to know if any treatment has been given to the donkey already as this will tell you if that particular medicine has been effective.

Your technique of asking the right question and taking the right approach to inspecting the donkey will develop with time. As your knowledge about diseases increases, so will your ability to recognise and ask about the signs that cause the disease. Remember to:

- Be systematic
- Adopt a routine that suits you
- Take nothing on trust
- Keep improving.

Clinical Examination

After speaking to the owner and assuming you have asked the right questions, you will have some idea of what the problem is. This might make you think of some clinical signs that the donkey might show. An examination will help confirm this. In other cases it is not obvious and an examination will help you gather the information that you need to work out the problems

A general routine comprehensive approach might be as follows:

1. Preliminary Inspection

Observe the donkey from a distance, Note the following:

- Behaviour
- Is it lame?
- Is it showing nervous signs?
- How is the donkey breathing? If you are close enough, you may be able to measure by watching the chest move

Move closer and look at signs detected previously, or see if you can spot others.

NB. If the donkey is showing any indications such as salivation or unusual behaviour proceed with caution. See section on zoonotic diseases.

This part of the examination can take place as soon as you see the donkeys that need checking.

If you see any donkey that requires immediate attention then attend to them first.

Cases that should be seen first include:

- Collapsed donkeys
- A donkey that is bleeding
- A donkey that is in a lot of pain

2. Preliminary examination

You may have noticed some problems in your inspection or perhaps the owner has indicated where the problem is or where he thinks it may be.

Take a closer look, taking care to handle the donkey gently but firmly - especially if it is boisterous. Often an owner can handle their donkey best, but sometimes an inexperienced owner won't be able to. A well-trained assistant can help you with this. See "Restraint" section.

Sometimes you may want to examine straight away what the owner has described, especially if it is potentially serious, such as a wound or where the donkey is not standing. In all cases take a moment to assess the situation and make sure you or any one else close by is in no danger.

3. Systematic general examination

You can usually proceed to looking at general condition:

- **Body condition:**

Note whether the donkey in good or poor condition

- **Mouth:**

Check age

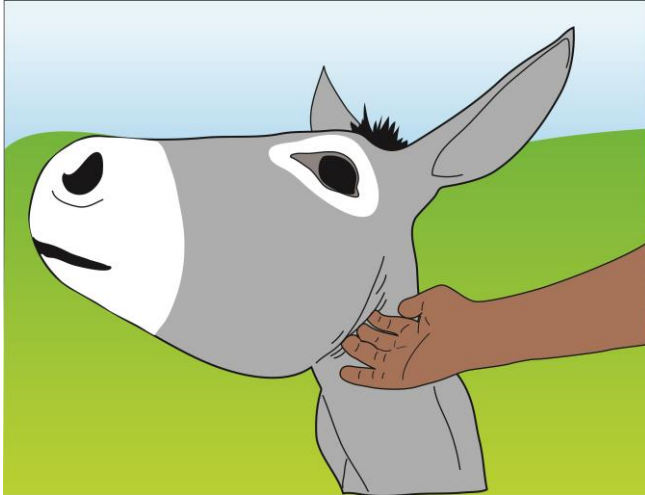
Colour of gums:

Normal – pink colour

Anaemic – pale white

Some diseases - With red spots

Seriously sick – can be greyish blue

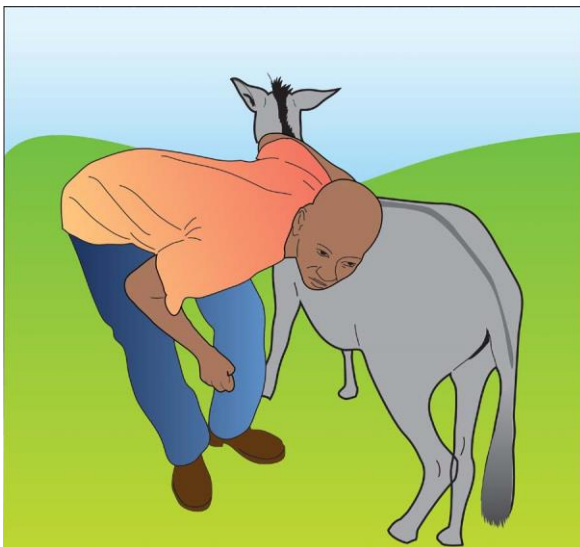


- **Respiratory system**

You should have a rough idea of the breath per minute when you observe from a distance.

Check for any discharge from the nostrils.

If you place your ear close to the chest, you can get information on any noise in the lungs and any possible infection there. A stethoscope is useful but not essential to listen to the lungs.



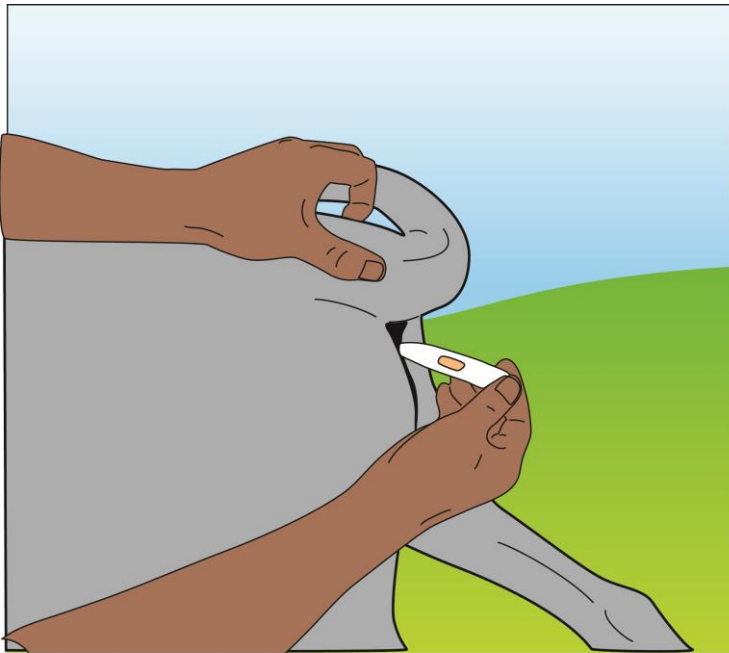
- **Temperature**

The normal temperature of a donkey is between: **36.2- 37.8°C**

During infection the temperature can be raised to 39 - 41°C or above and it is said to have a fever

However, when the temperature outside is hot, for example at midday, the temperature can rise from 36.2 to 39°C. This is normal. The temperature can also be high if the donkey has been very active, working long distances or exerting itself. If you had to chase it to catch it then the temperature also be high without it meaning indicating disease.

A donkey that has a fever is usually depressed and eating less.



The donkey's temperature can be taken with a glass or electronic thermometer. These are the steps to take when using a thermometer:

Electronic thermometer:

1. Press the button and wait for 1 min

Glass thermometer:

1. Remove thermometer from case
2. Hold thermometer firmly at end furthest from bulb
3. Shake thermometer firmly
4. Check to make sure mercury column has fallen to the bottom of the thermometer and is unbroken
5. Dip bulb of thermometer into Vaseline or suitable lubricant (saliva?)
6. Ensure animal is well restrained by capable handler
7. Stand close to side of animal just in front of the hind limb
8. Lift tail slightly or have someone on the other side lift the tail
9. Insert bulb end and first $\frac{1}{2}$ of thermometer gently into the anus
10. Hold thermometer so that the bulb is pressed gently against the side of the rectum and is not in the centre of a ball of faeces
11. Hold thermometer in for 1 minute **(do not let go!)**

12. Gently remove thermometer
13. Wipe faeces from thermometer with piece of dry cotton wool
14. Still holding thermometer by end furthest from bulb, hold it horizontally
15. Turn the thermometer gently until you can see the mercury column
16. Read level of top of mercury column against the scale
17. Note reading down
18. Wipe thermometer clean with cotton wool soaked in spirit
19. Shake thermometer again to return mercury to bottom
20. Replace in thermometer case

Table to record your findings

Examination	Questions	Findings
Observation from a distance	Normal responses Lameness Nervous symptoms Respiratory effort	
Breath per minute	Adult 20 (15-35) Young 28 (20-40)	
General body condition	Condition score	
Age	First or adult teeth Wear of incisor teeth	
Pulse rate	Adult 45 (35 – 55 per min) Young 60 (50-70)	
Mucous membranes: mouth and eyes	Colour Dry or moist	
Respiratory system	Nasal discharge Cough Abnormal sounds	
Circulatory system	Dehydration Heart rate Oedema – limbs/underbelly	
Digestive system	Appetite / eating / swallowing Gut sounds Pain / bloat Faeces / diarrhoea Rectum	
Reproductive system	Discharges / swelling / pain Need for further examination Pregnant	
Temperature (°C)	Adult 37.0 (36.5 – 38.5) Young 37.6 (37.1 – 38.1)	
Skin and underlying tissues	Wounds / discharges Swellings Dermatitis / hair loss / irritation	

	Lymph glands Mammary glands / prepuce	
Eyes	Pain / swelling / inflammation Discharge Cloudiness Injuries Sight / blind	
Nerve response	Responses / normal function Depressed / over-reactive Paralysis / collapse Unsteady / trembling Loss of sensation / reaction Blind	
Lameness (see lameness exam notes)	Lame Which leg(s)? How severe? (scale of 1-5)	

Unit 8. Diseases and Medical Conditions

This unit will cover disease and condition affecting:

- Skin
 - Allergic skin diseases
 - Traumatic skin conditions
 - Neo-plastic skin conditions
 - Infectious skin conditions
 - Parasitic skin conditions
- Gut parasites
- Rectal prolapse
- Colic
- Blood parasites
- Tetanus
- Respiratory conditions
- Eye
- African horse sickness
- Rabies
- Coitus exanthema
- Dystokia
- Vaginal prolapse
- Penile prolapse
- Belly edema
- Abortions

SKIN CONDITIONS

1. Allergic Skin Diseases

- Introduction: insect hypersensitivity occurs in donkeys
- Cause: Mainly bee stings.
- Syndromes: pruritis, subcutaneous oedema, sloughing off of affected areas
- Treatment:
 - Parenteral medication with corticosteroids e.g. Dexamethasone or prednisolone
 - Antihistamines
 - Application of antibiotic/steroid creams



Allergic reaction due to bee stings

2. Traumatic Skin Disease

Introduction: Probably the most prevalent skin disease encountered

Causes:

Harness related wounds

A harness is any implement put on a donkey, eg. halter. Harness related wounds are widespread and basic understanding is important. Wounds will often heal without help, as long as you remove:

- The causal factor leading to pressure, friction and abrasion (eg. by putting more padding underneath , not overloading etc).
- Delaying factors such as contamination and infection



- Poor harnessing and bad cart design



- Malicious slashing



- Abscesses



- Haematomas



- Snake bites



- Tight or nylon ropes for tethering

- Fight wounds

Treatment of wounds:

- Clean to remove gross contamination then wash with a dilute antiseptic 0.1%-0.5% povidone iodine
- The normal strength supplied is 10% - therefore 1-5 parts of the 10% povidone iodine in 100 parts of water. This is the colour of weak tea
- Wounds should only be washed if dirty or contaminated
- Ensure the wound is protected or the donkey is rested until it has healed completely.
- Monitor and evaluate the effectiveness of the treatment by doing follow ups.

Hydrogen peroxide should generally not be used for washing wounds due potential tissue damage. Use is limited to the flushing out of foot abscesses and deep infected wounds.

3. Neoplastic Skin Disorders

Introduction: mainly sarcoids.

Sarcoids are a special type of growth in the skin that affects only horses and donkeys. They can appear as a single or multiple red lumps on the skin or lumps under the skin. They can look very different, and are found in different places. They can also occur in wounds. Sarcoids can be difficult to deal with as removal doesn't always cure the problem, if it is possible at all. Sometimes, they can get worse if attempts are made to ligate or surgically remove them.

•**Cause:** unknown; (papillomavirus?)

•**Signs:** vary from small nodules to large ulcerated fibromatous lesions



•**Treatment:** limited

–The best way to deal with sarcoids is to leave them alone as treatment is limited and in most cases they recur [Benign neglect]

-Application of elastrator ring or use of a cobblers thread as a strangulator around the sarcoid. This method is recommended on fibroblastic sarcoids with a narrow base

4. Infectious Skin Diseases

Introduction: mainly bacterial and fungal

•Dermatophilosis



–Cause: *Dermatophilus congolensis*

–Signs: focal irritation and lesions with loose scabs that leaves a red base after removal

–Treatment: clip the hair, and then give antiseptic wash e.g. povidone iodine. Parenteral penicillin is useful since *Dermatophilus* is sensitive to penicillin.

•Ringworm

This is a disease caused by parasites that live on the skin – mainly the hair. It makes the hair weak so that it falls off easily. It usually affects young donkeys or weak ones with other problems. Humans can get infected if they get into contact with donkeys with ringworm.

Is commonly seen in hot, humid areas e.g. Lamu, Uyoma .It is also relatively common in lower Eastern Province [Ukambani]

Ringworm is spread:

1. When a healthy donkey gets in contact with an infected one
2. By sharing harnessing materials such as sacks and old clothes between donkeys.

The main signs are:

- Round areas of raised skin
- One or more roughly circular patches of hair loss (due to the weakening of the hair)

The donkeys do not scratch much if they have ring worm.

Treatment

- Wash the affected area with antiseptic like dilute povidone iodine
- Donkeys can recover without any treatment – especially young ones which may develop resistance as they age
- Use bleach in the housing area – this will kill the ring worm. Never use bleach on the donkey.

To prevent the disease from spreading:

- Isolate the infected donkey
- Do not share harnesses from an infected donkey with others
- Wash your hands after touching an infected donkey or use rubber gloves to prevent you from being infected

Usually affects young donkeys or weak ones with other problems



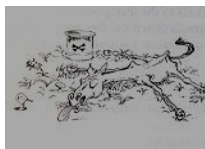
•Treatment: topical antiseptic wash, e.g. povidone iodine, chlorhexidine and antifungals

5. Parasitic Skin Disorders

•**Sarcoptic mange:** skin condition characterized by alopecia, intense pruritis, scab formation and ulcerations



- Cause: *Sarcoptes scabiei* var *equi*
- Treatment: -Ivermectin 1% sc repeated after interval of 14 days for a total of 3 treatments
- acaricidal wash



NB: organophosphates are toxic to equines e.g. amitraz

- Lice:** both biting (*Damalinia spp*) and sucking (*Haematopinus spp*) occur mainly at the mane but can cover the whole body.
- Mixed infection of both sucking and biting lice do occur
- Because lice are wingless and host specific , transfer between hosts primarily occur by contact and also by sharing harnesses



- Treatment: Insecticidal pour on such as pyrethroid permethrin 4% w/v at the rate of 1ml/10kg approximately one quarter of the calculated dose is applied to the top of the head and the remainder along the neck and mid back line.
- Use of parenteral Ivermectin at 0.2 mg/kg is effective against sucking lice.

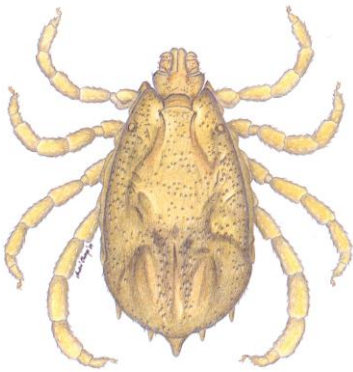
•**Ticks:** Common tick species identified in donkeys are *Amblyoma variegatum*, *A. lepidum*, *A. gemma*, *A. choarens*, *Boophilus dicloratus*, *B. annulatus*, *Hyalomma truncatum*, *H. marginatum*, *H. anatolicum*, *Rhipicephalus pulchellus*, *R. evarsi* and *R. turanicus* [Feseha and others 1993,]



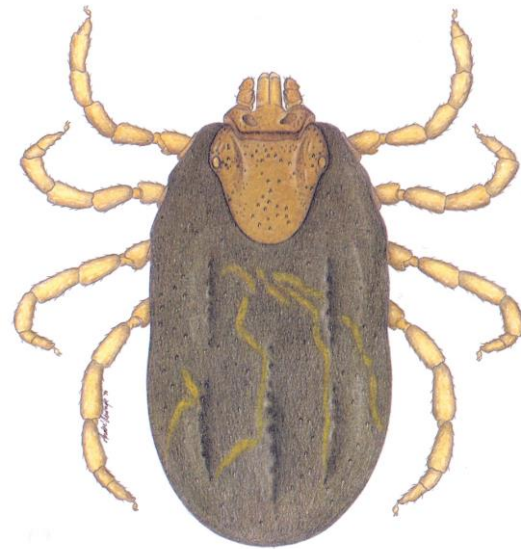
A.variegatum male



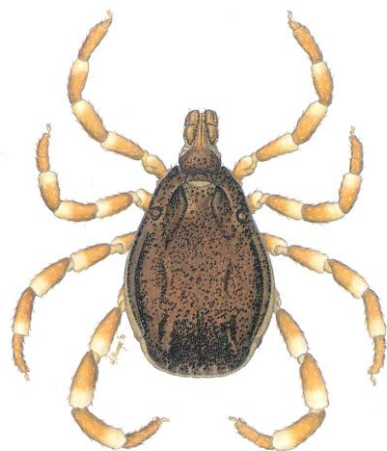
A.variegatum female



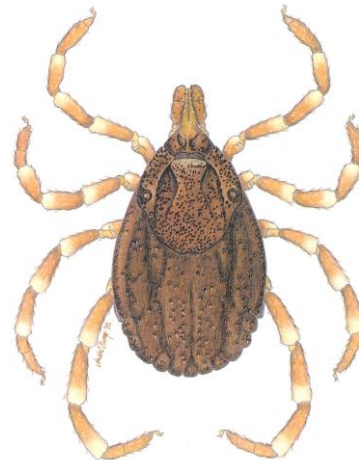
B.decoloratus male



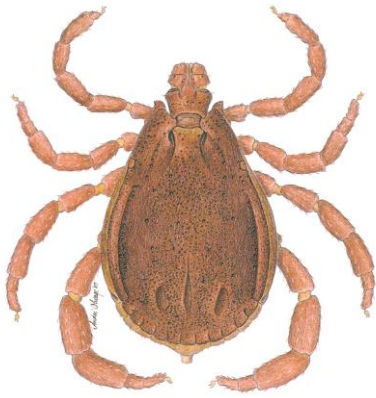
B.decoloratus female (engorged)



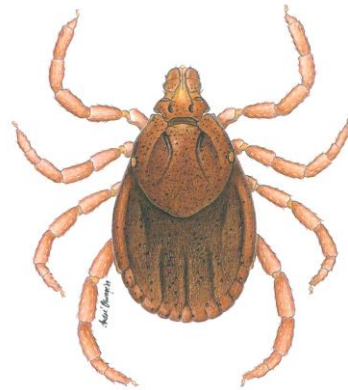
H.truncatum male



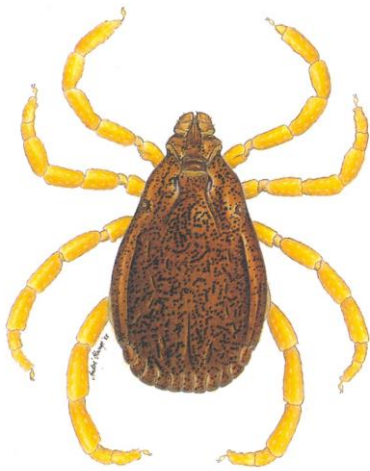
H.truncatum female



R.appendiculatus male



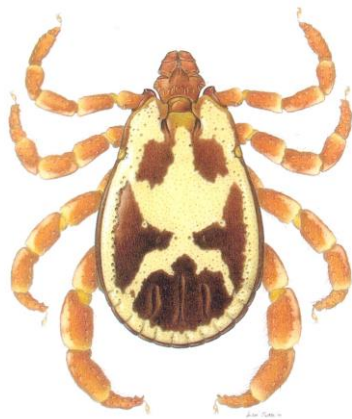
R.appendiculatus female



R. e. evertsi male



R. e. evertsi female



R.pulchellus male



R.pulchellus female

- Are mainly seen on mane and ears but can cover the whole body in heavy infestation



Ticks in the ears causing otitis



Ticks on the head

Habronemiasis

- Seasonal condition characterized by pruritis and ulcerative lesions around the eye (ocular habronemiasis) and fetlock region (cutaneous habronemiasis)



- Cause: migrating larvae of *Habronema* spp
- Treatment: topical Ivermectin

GUT PARASITES

Worms

- Donkeys have a number of parasitic worms in the gut which may sometimes be found in the dung. Maggots of the bot fly live in the stomach and are also found in the dung.
- The parasites can cause loss of weight and a general bad condition. In foals they may cause diarrhoea. The worm infections can also lead to colic and can result in the death of the animal.
- A number of worms infect the gut of donkeys. The largest is a roundworm which can be over 30 cm long and produces millions of eggs which survive on the pasture for a long time.

- Most common are red worms (up to 3 cm long) which are roundworms also found in the intestine. These live for a time in the liver and the main arteries which take blood to the gut. They finally pass into the gut where they feed on the wall of the intestine.



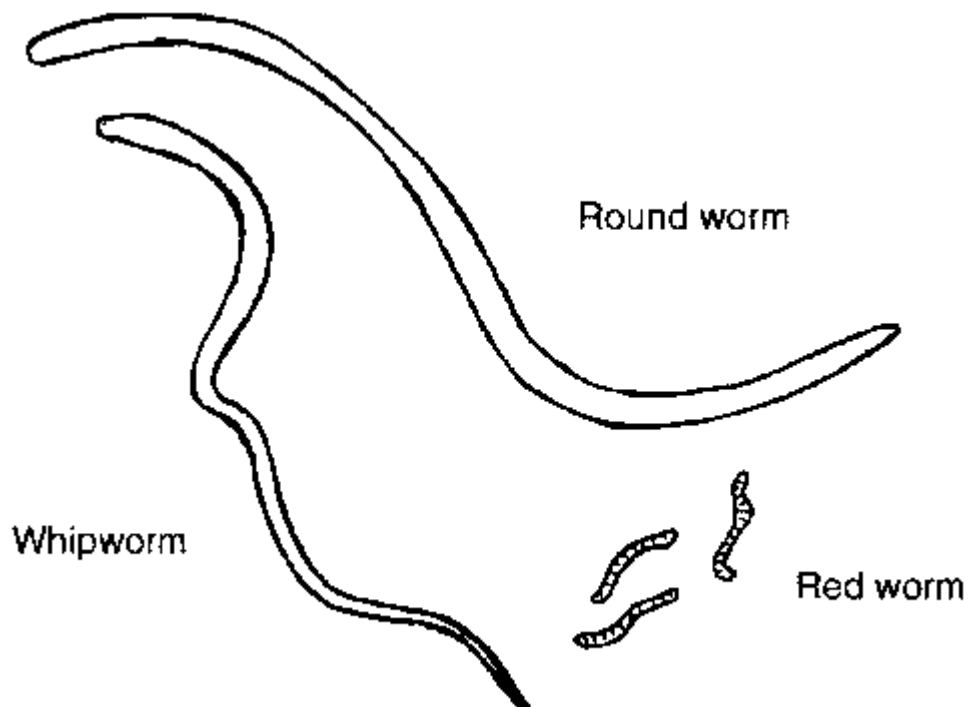
Picture showing numerous strongyles in the cecum, Note the pathology

- Rarely seen in the dung are white worms up to 15 cm. long which have long, thin tails. These are the whipworms which live in the intestine and lay their eggs around the anus of the host where they develop before falling onto the ground.
- Lungworms infect the lungs and are common in donkeys which can have large numbers of worms. Eggs are coughed up and swallowed to pass out in the dung. Usually these do not cause any signs until there are other problems.
- Tapeworms also do affect donkeys



Tapeworms at the ileocecal junction

Parasitic worms of equines



Problems resulting from infections with worms

The large roundworms are not often found in animals over 4 years old. They are a problem in the foal they cause weight loss, dull coat, poor body condition and can lead to colic by blocking the gut. Young worms moving through the lung cause coughing and the damage to the lung can allow other infections to develop.

The **red worms** suck blood and badly damage the wall of the gut. The worms passing through the blood vessels can cause severe damage and result in weakening of the vessels and blockage. The worms can cause colic which is often fatal if not treated.

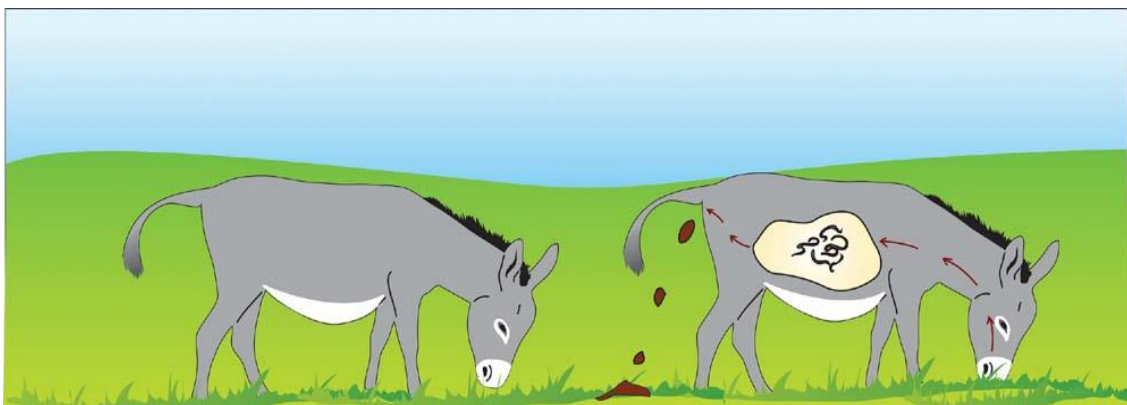


Pathological lesions caused by the red worm [Strongylus spp]

Whipworms cause irritation of the anal region making the animal restless and causing it to rub its tail against a wall or post. Infected animals do not feed properly and can lose condition.

The life cycle of worms

There are variations with different kinds of worms, but most worms are spread in the dung. The donkey with worm passes dung and worms together and when another donkey is grazing near by it eats the dung along with the grass.



How to reduce infection with worms

There are several ways of reducing the chance of animals becoming infected:

1. The removal of dung from small pastures reduces the number of eggs contaminating the pasture.
2. If other grazing animals are kept, allow them to graze pasture following the horses to reduce the contamination of the pasture. Ruminants are not infected by donkey parasites.
3. Stables should be kept clean and dung removed daily to a dung heap. Any worm eggs in the dung will be killed by the heat that is formed when the dung rots. Turning the dung heap over every one or two weeks will ensure that the heat reaches all the eggs and kills them.
4. Regular treatment with anthelmintics.

How to treat infected animals

Adult worms can be killed by giving 1% Ivermectin orally. If 1% ivermectin is given intramuscularly [IM] donkeys react very severely therefore it should be given orally. Oral administration of 1% ivermectin work just as well as given IM.

When to treat

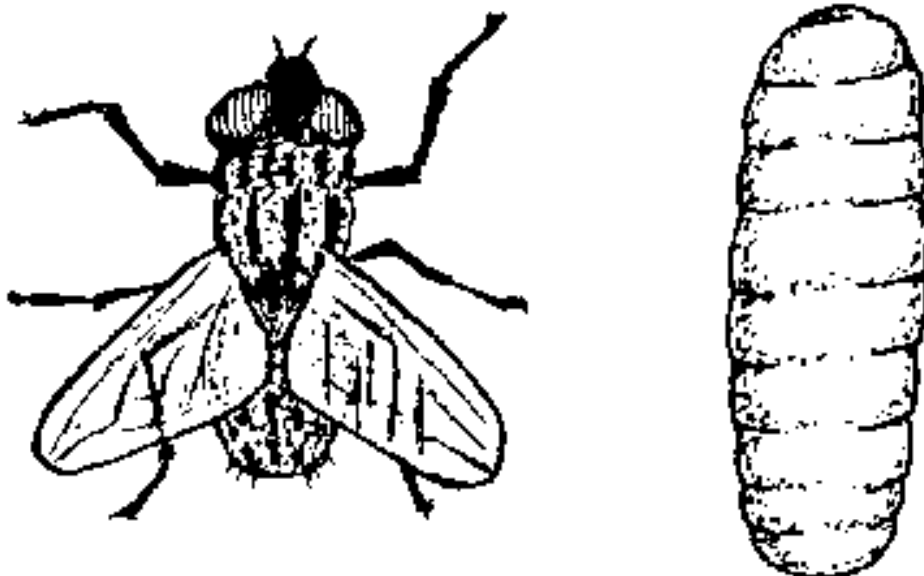
End of dry and wet season

Horse Bots

Bot flies lay their eggs on the hairs of the lower legs, shoulders and around the mouth. The maggots hatch and are taken into the mouth as the animal licks. They burrow into the gut and develop in the stomach where the red coloured maggots can live for up to one year. The maggots pass out in the dung and burrow into the soil where they change into the adult fly.

The adult flies annoy the host and the maggots damage the stomach but they are not as great a problem as the worms.

Bot fly - Maggot in dung



The horse bot is killed by Ivermectin the medicine normally given to kill other worms. But for it to work it has to be given at the right time



Rectal Prolapse



Cause:

- irritation of the rectum by worms,
- overloading,
- prolonged recumbence
- constipation

Treatment: wash the prolapse, remove necrotic tissue, insert the prolapse and apply purse string suture pattern



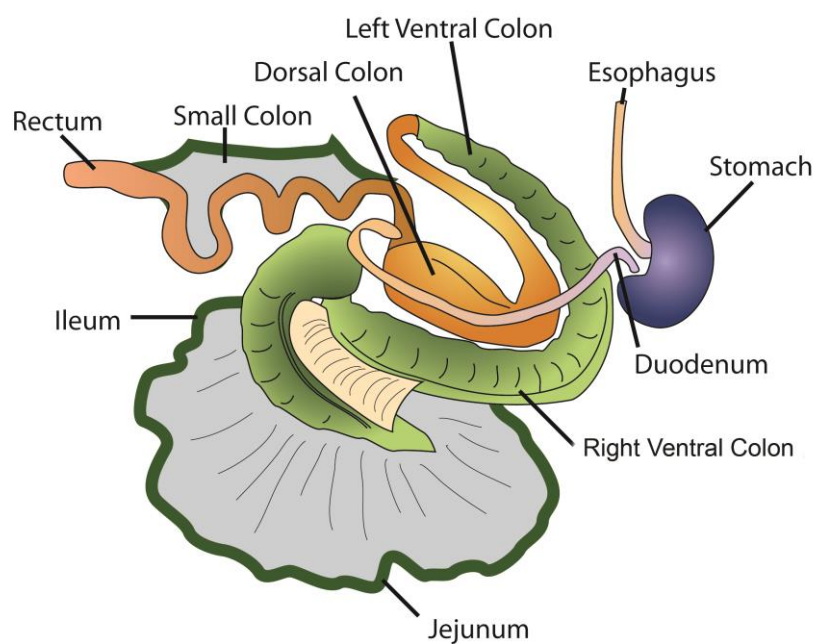
- Remove sutures after 48 hours

Colic

When a donkey has colic, it means that it has abdominal pain.

Causes of colic include:

- Damage caused in the gut by worms
- Too much gas in the gut – especially the larger parts of the gut
- Blockage of the small part of the gut, for example by ascarids (especially in young donkeys)
- Blockage by polythene paper bags
- Twisting of the gut



(On some occasions pain may not come from the intestine but from another area such the kidney or, in the female, the uterus).

Some of the signs of abdominal pain are:

- Lack of appetite
- Lying down and getting up frequently
- Just lying down
- Frequent rolling
- Restlessness
- A bloated appearance

Sometimes a donkey may have colic but not show any signs until the problem is very advanced.

The problem leading to abdominal pain can be life-threatening or a mild belly ache that will pass

The three main challenges with colic cases are:

- Deciding which cases are unlikely to respond to medical treatment
- Administer effective medical treatment, particularly pain relief where there are limited resources
- In the absence of surgical facilities or for hopeless cases getting the consent from the owner to euthanize or minimise suffering until the donkey dies

Treatment for colic

Treatment usually includes the following:

1. Pain relief

This is very important in all cases

The best product to use is flunixin. However, xylazine, phenylbutazone or even dipyrone can help a little with the pain.

2. Fluid therapy

Donkeys with colic other than mild colic can quickly become dehydrated.

If there is an obstruction, fluid given by stomach tube can help a lot.

Giving fluids by stomach tube is a skilled job and should only be undertaken after receiving the appropriate training and if you have the correct type of stomach tube.

- Ensure the gut is working by listening for gut sounds in the area shown {pict} and absence of gastric reflux when you put the tube in.
- Stop if there are signs of abdominal pain during or immediately after tubing.
- 1 to 1½ litres of fluid can be given by this method every hour.

3. Laxative

A laxative such as liquid paraffin can be used to help move an obstruction. 2 to 3 litres can be given to an average-sized donkey.

Medicine for colic

Requirement	Medicine	Dose	Comments
		(i/m = in the muscle i/v = in the vein)	
Pain relief ² NSAID	Flunixin meglumine	1.1 mg/kg iv i/m every 12 to 24 hrs (once or twice a day)	Analgesic of choice
NSAID	Phenylbutazone	4.4mg/kg i/v every 12 to 24 hrs	Mild effect
NSAID	Dipyrone (metamizole)		Mild effect
Sedative or analgesic	Xylazine	0.3-1.1mg/kg i/v i/m as required	
Laxative	Oral Liquid paraffin	1-1½ litres every hour	Ensure the gut is mobile and there is an absence of gastric reflux. Stop if there are signs of abdominal pain during or immediately after administration
	MgSO (Epsom salts	1g/kg in solution via stomach tube	Generally not recommended if alternatives are available but can be used in some cases

Colic cases which are unlikely to be resolved with medical treatment have the following signs:

- Severe unrelenting pain with only short-term or no response to analgesic
- High pulse which can be 80 beats per minute or more rising progressively and weakening
- Mucous membranes which are very dark red or have a blue tinge
- Increasingly life threatening distension of the abdomen

In these cases the donkey may die a painful death. It is important to try and reduce the pain as much as possible and, if the case is hopeless, encourage the owner to have the donkey kindly killed.

BLOOD PARASITES

Babesiosis

- Is a tick borne disease
- Cause: *Babesia caballi*, *B. Equi*

Some of the questions to ask the owner:

1. How long has there been a problem?
2. Is the donkey eating and drinking okay?
3. Is the donkey bright?

- Signs: fever, anaemia, red urine
- Diagnosis: clinical signs especially red urine and blood smear.
- One can collect the red urine in a bottle and leave it to settle for 30 minutes:
 - If red material settles in the bottom of the bottle this means there is likely to be blood in urine.
 - If the colour is even then this is due to pigment in the blood and is caused by a different problem.

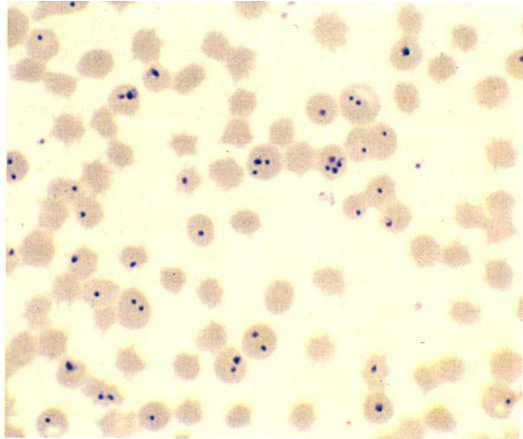
Some of the differentials for babesiosis are:

- Infection of the bladder
- Infection of the kidney
- Stones
- Injury
- Problems in the uterus

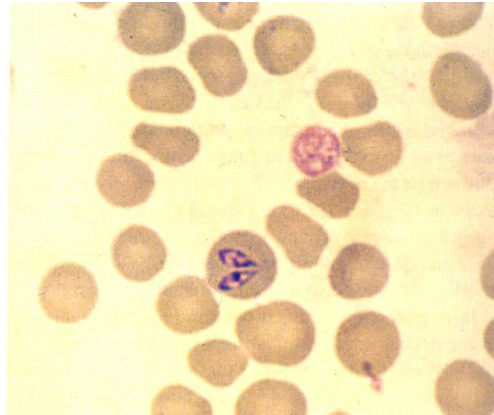
A blood smear is essential to confirm babesiosis

• Treatment:- Diminazine diacetate [Berenil®], Imidocarb dipropionate (Imizol®)

- diminazine-2 doses 24hrs apart 5mg/kg [caballi], 6-12mg/kg [equi] deep IM
- imizol-caballi-2.2mg/kg repeat 24hrs
- equi-4mg/kg 72hrs 4 times



Blood smear: *B. equi*



Blood smear: *B. caballi*

Medicine to use Imidocarp dipropionate or Diminazine aceturate

Dose

Duration

Trypanosomosis



Trypanosomosis is caused by trypanosome spp. e.g. *T. vivax*, *T. evansi* and *T. brucei*

In some cases a donkey that has this parasite will show signs of the disease, and in other cases a donkey with the parasite will only show signs if working excessively hard, pregnant, or having another disease at the same time.

You may see some of the following in some cases:

- Enlarged lymph nodes
- Cloudy eyes and small red areas on the mucous membranes
- Pale, whitish mucous membranes
- Swollen legs and belly with oedema
- Fever that may come and go
- Dull behaviour
- Signs that the brain is affected – circling paralysis

Often, it is not possible to be sure a donkey has Trypanosomosis as signs can be the same as for other diseases – a donkey may simply be weak due to poor nutrition or gut parasites. Ideally taking a blood sample can help to detect the disease. .

Treatment

Some of the medicines used in cattle are used in donkeys but donkeys are a lot more sensitive to the harmful effect of these drugs so great care should be shown in their use

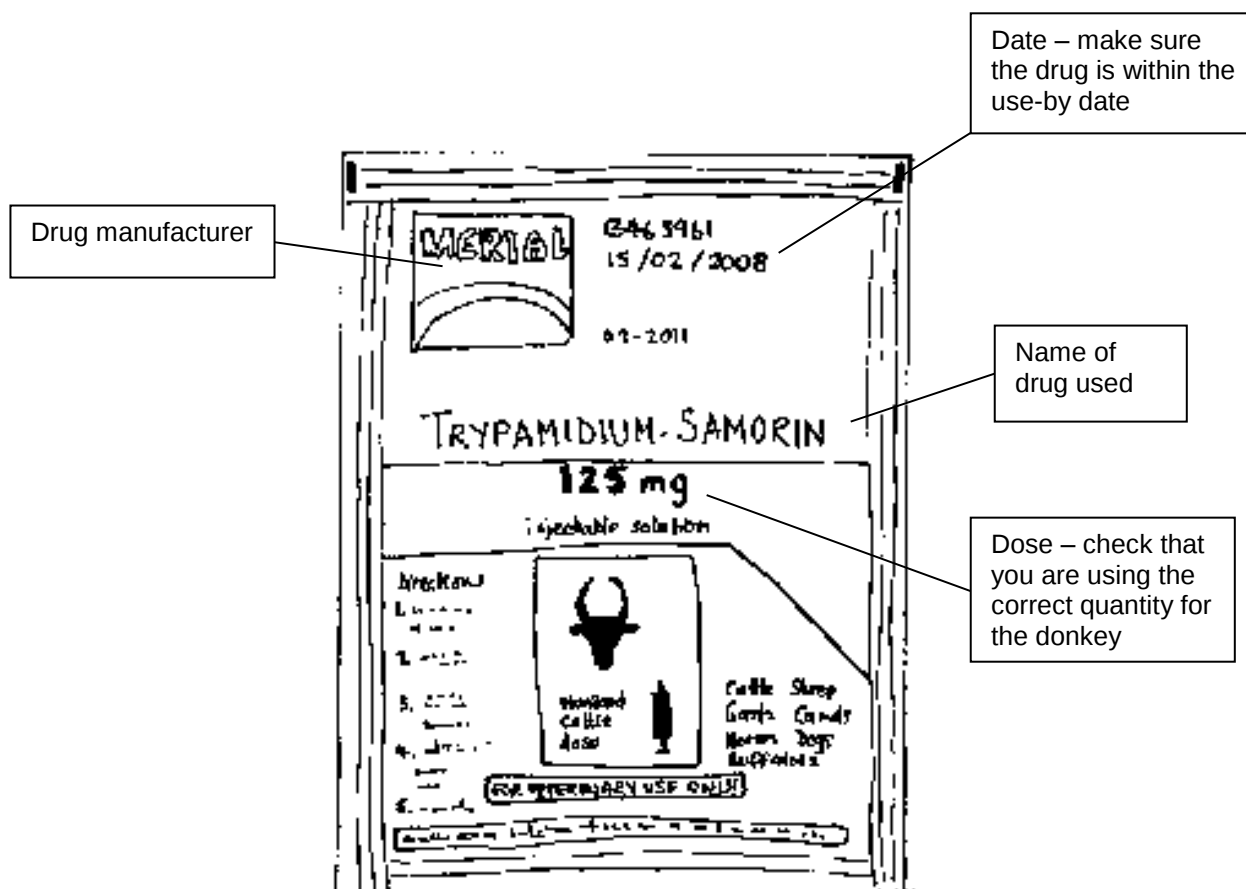
Medicine can be used to treat as well as prevent the disease. It is important that drugs are used ethically. This is because:

- Poor use of drugs can lead to less effectiveness in the future
- The drugs used can be harmful to the donkeys and cause muscle damage

Samorin is one of the drugs presently being used to treat tryps at a dose of 1mg/kg.

How to give the injection

1. Deep intra-muscular injections are essential to prevent local tissue necrosis. It is recommended that injections are given in the rump (see earlier diagram)
2. Separate needles should be used for filling the syringe and giving the injection
3. A long, small-gauge needle should be used and firm pressure applied after withdrawing the needle. Splitting the dose and giving in two sites is also recommended.



Prevention

This can be achieved by using prophylactic trypanocidal drugs or controlling the tsetse flies.

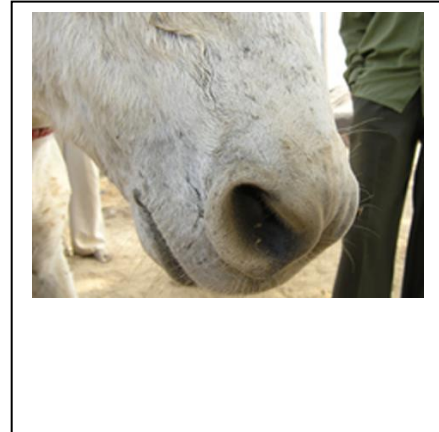
Tetanus

Tetanus occurs when a wound becomes infected with a certain type of bacteria that is found in the soil. The bacteria produce a poison that affects the muscles. This can occur several weeks after the wound is infected. The wound may have healed by this time or may be so small that it is not easily found.

The signs that are seen with tetanus:

- The donkey is generally very stiff and, if it can walk, moves with a stiff-legged gait
- Ears are stiff and pricked up
- The donkey cannot open its jaw, has difficulty eating and moving its neck
- Nostrils can be flared
- When the eye blinks the third eyelid is slow to go back
- The donkey is startled by loud noises or light

The temperature of the donkey will be normal.



- As the disease progresses, the muscles become so rigid and stiff that the donkey may fall and not be able to get up again.
- Convulsions may occur.
- In severe cases, death is caused by paralysis of the breathing muscles

How to prevent tetanus

- Keep wounds clean and protected from infection
- There is a vaccine [tetanus toxoid] but it is not usually readily available

How to treat tetanus

1. Cleaning

- Clean wounds
- If there is an abscess in the foot, flush with hydrogen peroxide

2. Nursing care

Donkeys can usually survive the disease if they are given food and water in such a way that they can eat it.

- Ensure the provision of fresh food such as freshly cut grass. Try and get the donkey to eat by putting food that is easy to chew into the mulch and adding water. If the donkey isn't able to flex its neck you may need to put food on a raised area, hold the feed at head level or put the feed in the donkey's mouth.

- Water should also be given at a higher level than normal. If the donkey can't drink, water can be given using, for example, a syringe.
- Make sure that there is a safe, quiet environment and if possible a darkened area. Cotton wool in the ears may help reduce adverse affect of loud sounds.
- Ensure the donkey can defecate and urinate – if not, assistance may be given by a trained person.

3. Medicines

Penicillin is used to kill the germ.

Tetanus anti- toxin is given as it can neutralise some of the toxin. This is not often available.



Respiratory problems

Many general diseases can affect breathing. Those that are more specific for the breathing systems are:

1. Colds and Flu

Donkeys can get infections similar to the common cold in people. The signs of such an infection include:

- Increased temperature ($39^{\circ}\text{C} +$)
- Dullness
- Lack of interest in food
- Discharge from the nose – either watery or yellowy or whitish
- Coughing

Treatment

In most cases, if the signs are mild and the donkey is bright and still eating, the treatment is simply to rest the donkey. Ensure it has suitable shelter, water and that its favourite food is readily available.

If a donkey is off its food and the discharge from the nostril is thick, then it may need a course of antibiotics and possibly anti-inflammatory drugs if these are available.

Be aware this disease may spread to other donkeys. Healthy and sick donkeys should be kept apart.

In some cases a cough can persist for a long time after the infection has passed because of damage that has been caused to the windpipe. Little can be done to make this go away more quickly. If the donkey is eating and drinking normally then the best advice is to tell the owner to take it easy with the donkey and give it time to recover.

Medicine to use: Pencillin sulph trim.

Dose

Duration

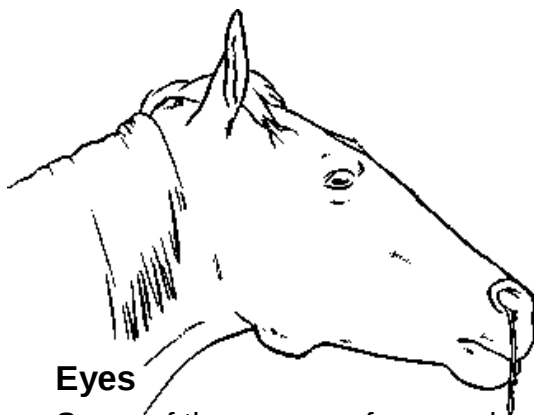
2. Strangles

This is a disease that looks like a cold, but after a few days pus may be seen in the nostrils and the glands in the neck may become swollen. These glands will burst in time. The donkey may cough, have a high temperature, be generally dull and will probably be off its food or have difficulty eating.

Treatment

Nursing care is important. Rest the donkey in a comfortable area and ensure that it has fresh water available and is given good feed on a regular basis by offering fresh grass or other feeds that the donkey likes. Using a hot pack on the lymph nodes may encourage them to burst. Once the pus comes out it is important to keep the area clean. Ensure the pus is not allowed to infect any other donkeys.

Should the condition remain bad or deteriorate, you may need to give penicillin. Usually this is not given until the abscesses are bursting as this can slow natural defences of the donkey to get rid of the infection.



Medicine to use: Pencillin

Dose

Duration

1. Trauma, including:

- Injuries caused by grass or bushes as the donkey feeds
- Injuries from other animals such as cattle, or from fighting
- Injuries from wrongly applied head collars
- Injuries from whips
-

2. Local bacterial infections

Bacterial infections are mostly secondary to eye injuries

3. Tumours

The most common tumour affecting the eyelids is sarcoid

Some of the signs seen if the eye is affected are:

- Tearing
- Ulcerations
- Swollen eyelids
- Pus
- Reddening of the eye

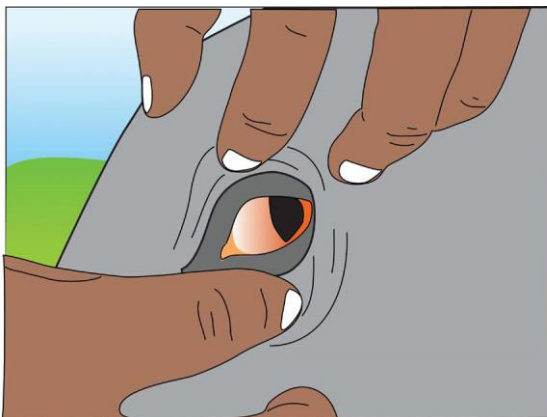
Treatment of eye problems:

For mild cases:

If donkeys have tears but have no red or painful eyes or pus discharge, the eyes can be bathed with clean water. These often heal on their own. Most of the medication for the eye will be either in the form of drops or ointment. If both eyes are affected, do not use the same tube on both eyes as you may spread the infection. Use different tubes for each eye.

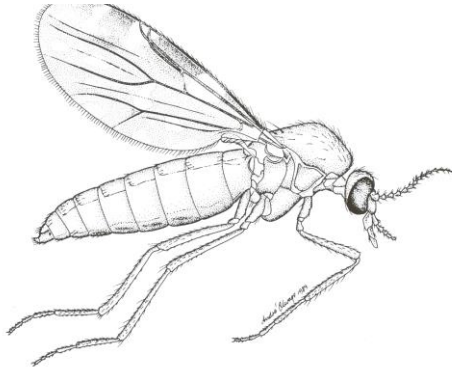
Eye drops or ointments with corticosteroids like dexamethasone should **not** be used in cases of corneal ulceration as it makes the wound bigger and make the problem worse.

Human eye drops or ointments can be used in animals – but check if they have corticosteroids.



African Horse Sickness

- Insect borne viral disease of horses and mules, and generally sub-clinical in donkeys
- Cause: Orbivirus



Lateral view: Culicoides spp.

- Epidemiology:
 - endemic in Limuru
 - Seasonal, occurring during the rainy season
- Signs: fever, respiratory distress, swelling around the eyes and jaws



Treatment: none but antibiotic cover and parenteral NSAID can be helpful

Rabies

Donkeys and other animals get rabies when they get bitten by dogs or other wild animals with the disease.

Main signs of rabies in donkeys are:

- Some stop eating and appear dull
- Some become manic, mutilating themselves, biting anything including people and other animals
- A donkey may become paralysed or walk in an un coordinated manner

If not sure about the clinical signs, isolate the donkey for at least ten days within which it will show it show classical clinical signs or eventually die. During the isolation period provide the donkey with feed and water so that it does not die of starvation.

Rabies is a dangerous disease: people can get infected when they are bitten by rabid animals or have wounds that get contaminated with the saliva of a rabid animal.

**What to do if you or any other person is bitten by a rabid animal:
Wash the wound with soapy water and seek medical attention immediately.**

Report any suspected rabies cases immediately to the government vet.

How to prevent rabies:

Vaccination and population control [e.g. spaying] of dogs is essential in preventing the spread of rabies.

Donkeys too can be vaccinated against rabies but this has to be done concurrently with vaccination of dogs within that locality.

Equine Herpes (coital exanthema)

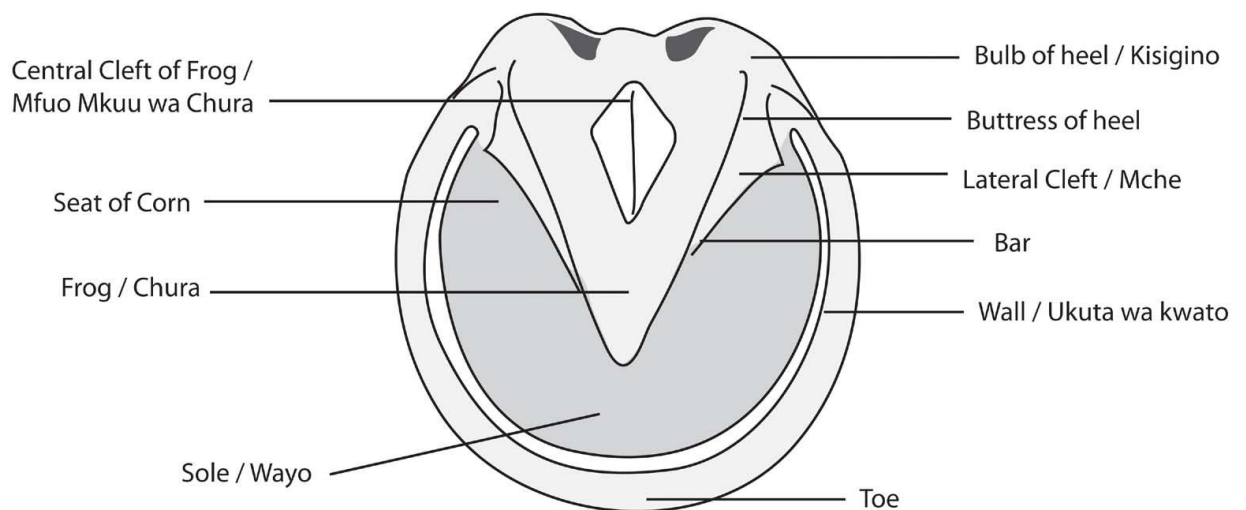
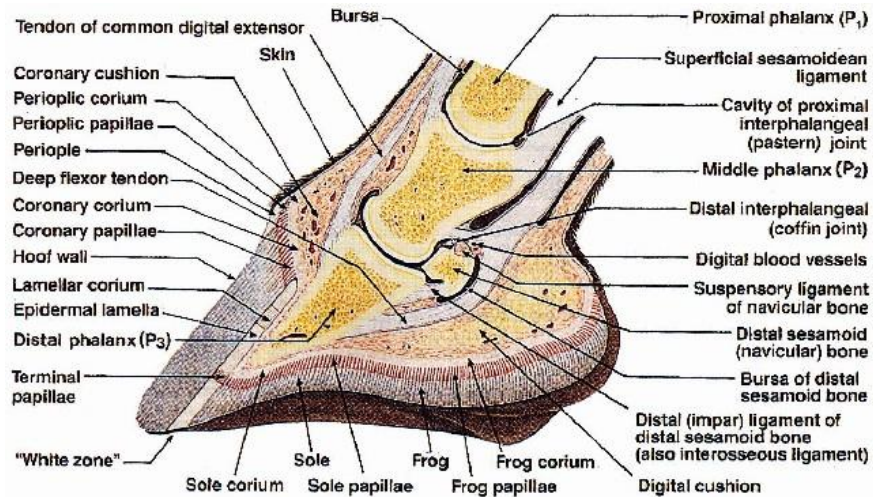
- Aetiology: Equine Herpes Virus type 3 (EHV-3)

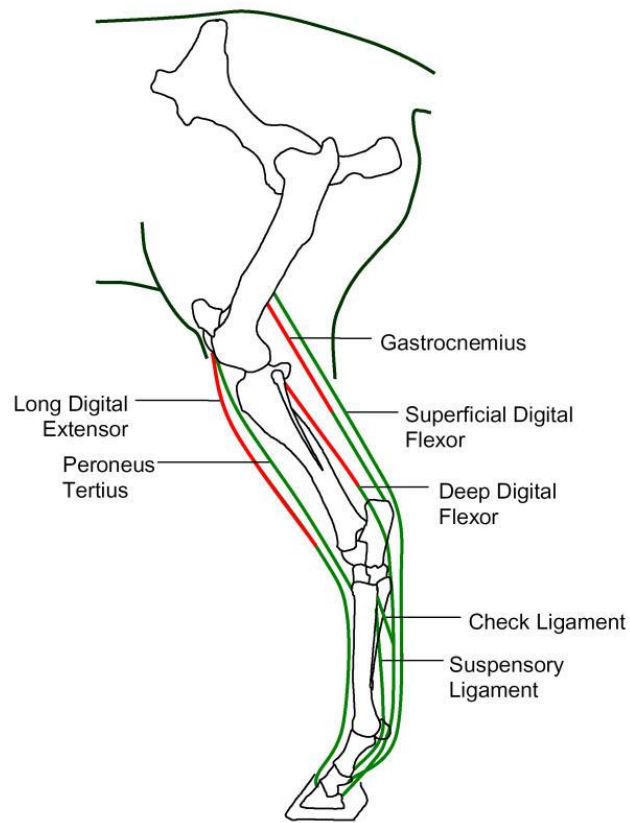


- Clinical signs and pathology
 - ❖ Vesicles that become pustular and ulcerate
 - ❖ Scabs develop which persist for 2 – 3 weeks and may leave white scars
 - ❖ Jennies develop lesions on the vulva, vaginal mucosa and on the perineum
 - ❖ In severe cases, lesions may extend to the hindquarters
 - ❖ Jacks are less susceptible but lesions may occur on the prepuce and penis resulting in unwillingness to cover
- Treatment:
 - ❖ Supportive
 - ❖ Iodine wash

Unit 9. Lameness and foot trimming

Leg and foot anatomy review





Causes of lameness

A lame donkey is one that does not walk normally. This may be because it has pain somewhere in its legs or hooves or because there is a restriction to movement.

Most causes of lameness are due to problems in the hoof either through injury disease or abscess. Therefore, unless there is an obvious problem elsewhere in the leg it is likely that the foot is the cause of lameness.

Other causes include:

- Injuries on the muscles
- Injuries on the tendons/ligaments
- Joint diseases or displacement
- Bone fractures

Signs that may indicate a problem in the limbs include:

- Difficulty in walking
- Not bearing weight on the affected limb
- Lying down a lot
- Donkey showing pain if you press on the affected limb
- Swelling of the affected area
- Pus or blood seen on the affected area

An accurate diagnosis of the problem(s) and successful treatment is more likely to be achieved by adopting a standard and systematic approach to each and every case. Some cases may be obvious e.g. an open wound to the leg or a nail in the foot. In other cases it may not be so clear. The lameness could be due to a more complex situation. Use the following as a guide:

1. Define the problem. Is it lameness? Are there other problems?
2. Localise the site. Which leg is affected? Which site on the leg? (Remember, both legs may be affected)
3. be as clear as possible about the type of problem so that the correct treatment can be selected

History

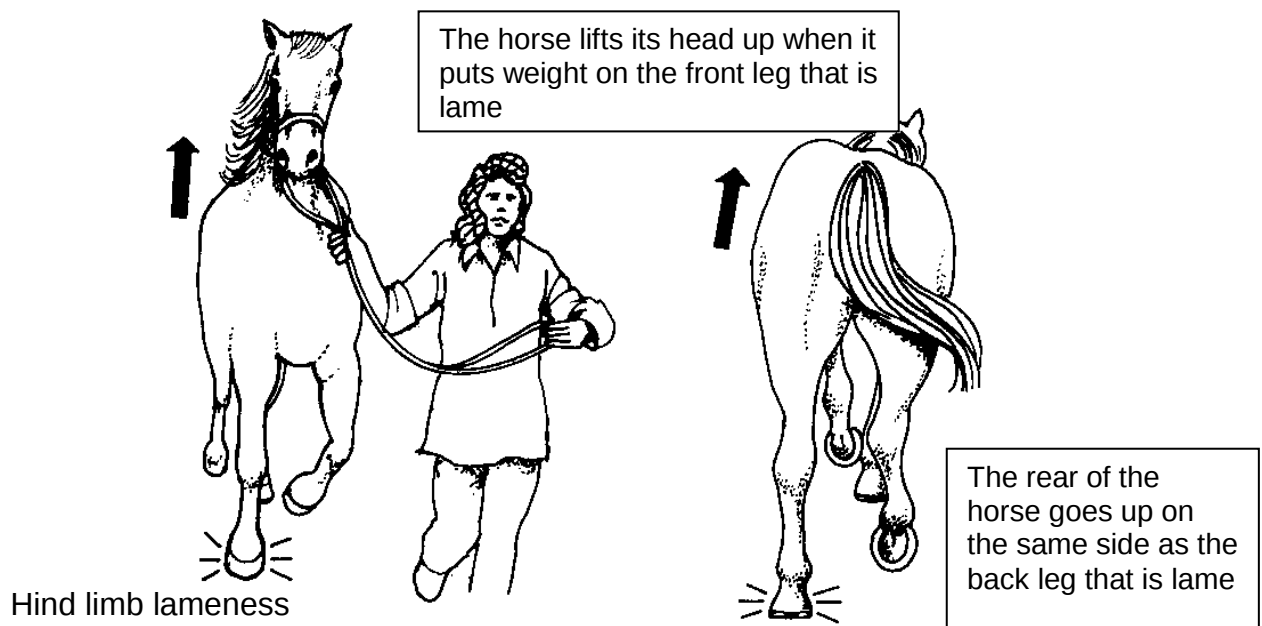
- ◆ Listen and observe, make a mental note (Left/Right, Fore/Hind).
- ◆ Duration of ownership
- ◆ Estimated age of the patient
- ◆ Recent work, hoof trimming
- ◆ Duration of problem
- ◆ Associated incidents / previous lameness
- ◆ Previous “treatments”

In some cases the lameness is not easy to detect by looking at the donkey standing. There may be no obvious signs of injury or disease. In this case it is **necessary** to walk or even run with the donkey before you can establish exactly where the lameness is.

Finding out which leg is lame

Forelimb lameness

- ◆ Proportionately more weight is taken on the sound leg for a longer time. Hence the forequarters, including the head, sink down more when the sound leg bears weight. This is apparent as a head “nod”, the horse being lame on the opposite leg to that which it nods down on when weight-bearing. This is best seen with the donkey moving toward you.



The animal will avoid bearing weight on affected limb during motion or when standing.

Physical Examination

Consider a full general examination even in the presence of obvious abnormalities.

1. Observation

- Condition score
- Conformation and symmetry (hooves/skeletal/musculature)
- Swellings
- Systemic disease

Lameness can be due to damage to any of the structures of the limb – muscle, tendons, joints and bones. When examining the leg, you need to think where the muscles, tendons, ligaments, joints and bones are. Begin near the foot and look and feel for:

- swellings
- muscle “wasting”
- wounds
- deformity
- pain
- heat
- consistency

Move joints if necessary and see the range of movement. Take note of any restriction pain or grinding sound which is not normal. This manipulation may cause pain to the donkey, so only do it if it is necessary, and for as short a time as possible.

You will need to develop your own systematic anatomical examination routine; preferably with the limb both weight bearing and non-weight bearing.

2. Examining the foot

Compare hooves to make sure they look the same.

Variation in shape can be the result of conformation, trimming, lameness or disease not always associated with the hoof, where a distortion has developed over a long time.

1. Sole

A well pared, clean solar surface is an essential prerequisite for meaningful examination. Only then can potential areas of discolouration, penetration, degeneration, infection or bruising be further investigated.

2. Coronary band

Systematically assess the coronet for evidence of localised pain or inflammation (white line sepsis can sometimes be localised by a pain response from pressure proximal to the lesion at the coronary band).

Chronic problems

Some problems are long standing and changes have taken place in the donkey's anatomy that cannot be reversed. In many cases the donkey will no longer be able to work without pain and discomfort. Apart from pain killers, little that can be done for these cases. **Owners** are to be advised not to work the donkey. If the animal cannot be kept where it can be free from work but still with enough food and protection from the climate and other animals, then it is wrong to leave the donkey to suffer. The option of humane killing should be discussed with the owner (see Humane Killing section)

Deformities

Donkeys can be born with or develop abnormal conformation. This may cause lameness because the shape is not good for walking or it may make the donkey more likely to get injuries and strains. To avoid these problems it is best not to breed from these types of donkeys or buy them in the first place. In some cases the foot can be trimmed in such a way that the donkey can be helped to walk better - but usually this has to be done regularly.

Hoof trimming

It is often necessary to trim the hoof in order to examine it properly. Hoof trimming is also required to address overgrown, deformed, diseased or injured hooves. Trimming a donkey's feet is a skilled job and should only be undertaken if you have the appropriate training and tools.

Some donkeys with conformation problems may require feet trimming all their lives. Long-term arrangements should be sought to trim hooves on a regular basis.

Requirements for hoof trimming:

- Sharp, well maintained equipment
- Good anatomical understanding of the hoof
- A well restrained patient
- A practical standard routine
- Concentration

The following kit is required. All equipment should be kept clean and the knife kept sharp.

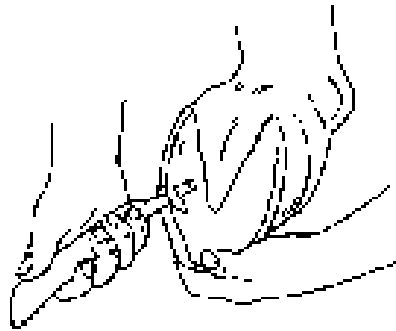
- Nippers
- Knife (and sharpener)
- Rasp
- Hoof pick



Aim of hoof trimming:

The aim of trimming a foot is to enable the animal to move with an unrestricted action so that there is no undue stress or strain placed on the hoof capsule, joints, ligaments and tendons.

1. Examine and clean out the sole, removing any overlapping wall, paring back the sole to give a concave solar surface. Remove any overgrown frog. Be careful not to go too deeply in to the frog – if you feel any softness then stop immediately.



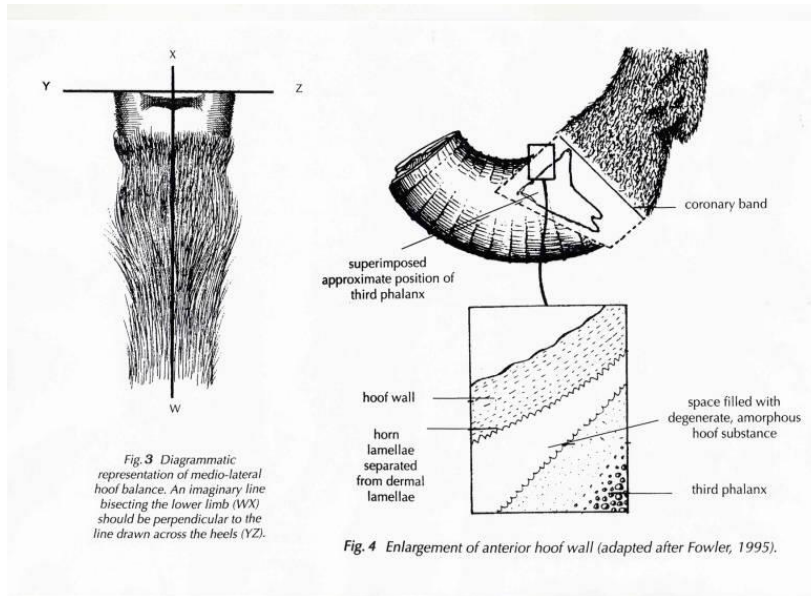
2. Use hoof nippers to remove any overgrown wall at the toe, quarter and heels. Keep the nippers near the vertical to avoid sloping hoof wall out.



3. Rasp the wall until it is smooth



The height of the heels and quarters should be balanced to allow the hoof to land evenly on the medial and lateral walls.



Abscess in the foot

Penetration of the hoof by sharp objects and small stones, particularly in the area of the “white line”, results in infection. The body attempts to eliminate the infection and pus develops. The increase in pressure on the hoof causes pain and lameness.

An abscess is one of the most common causes of lameness.



Diagnosis and treatment

- Thumb pressure on the sole or around the coronary band may help to identify the site if the abscess is tracking upward
- Consider which structures might have been penetrated by nails/wires etc.

- Only cured by removing the infected material - though it is infectious, antibiotics alone will rarely heal the abscess.
- Good initial trimming is essential for diagnosis and treatment.
- Dilute povidone iodine antiseptic solution is very useful for flushing and packing infected cavities.
- Ensure that you have created enough drainage
- Wash the hoof with dilute povidone iodine 1% solution
- Pain relief

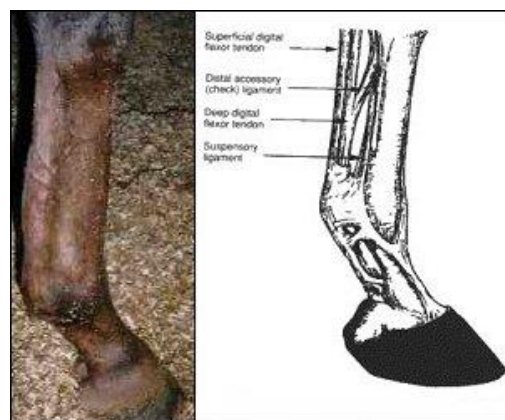
Advice to give owners

Good advice to give owners is to regularly check the sole of the donkeys' feet for stones, to clean them out regularly and stop hooves over growing by having them trimmed when necessary.

Tendonitis

Tendonitis is inflammation of a tendon. The tendons that are most often damaged are the flexor tendons at the back of the front legs (see diagram). Usually the tendon closest to the surface of the skin is damaged

When the flexor tendon is damaged, there is a thickening of the tendon, giving it a bowed appearance when the leg is viewed from the side. Bows usually occur in the middle of the tendon region, although they may also be seen in the upper third, right below the knee or hock (high bows), and lower third.



Tendonitis is common in donkeys that are overworked and made to carry heavy loads or carts, causing them to strain and damage their tendons. Poor road surface conditions can cause the donkey to lose its footing frequently. In serious cases this can lead to rupture (see below).

After the fibres are torn, the tendon bleeds inside and collects fluid, creating swelling in the area as well as increasing the pressure. The increase in pressure may damage the tendon.

Tendonitis can also be caused by poor conformation: long, sloping pasterns and a long-toe, low-heel shape to the hoof.

Other causes include poor trimming and shoeing, intense work, work whilst unfit and working when exhausted. .

Signs of tendonitis:

If it has recently happened signs include:

- Swelling
- Heat
- Pain (obvious when the affected area is palpated)

If mild, swelling may not be readily apparent, although there will still be heat and pain in the area as well as mild lameness. If more severe, the injury is usually accompanied by moderate lameness.

When the tendon is healed, depending on the damage it may still have a thickened, bowed appearance that feels firm and woody. However, all heat, lameness, and pain should disappear.

Treatment

The best treatment for tendonitis is;

- Rest
- Anti-inflammatory drugs such as phenylbutazone
- A very gradual return to work

It takes several months for tendons to heal and damage will be done if the donkey is made to work too soon.

If the damage to the tendon is recent then by pour cold water on the area for five minutes several times a day for the first few days to try and reduce the inflammation

Firing or burning is not recommended as it will cause more harm than good.

Reducing the risk of injury to tendons

- Donkeys should not undertake extremely hard work
- Legs should be checked regularly, especially after hard work. It is important to feel each leg for swelling and heat, and to palpate it for pain. Stop working the donkey if any sign of heat, swelling, or pain is detected.
- Ensure that the feet are correctly trimmed so that they are balanced
- Take special care with donkeys pulling or carrying heavy loads to avoid stumbling.
- Make sure the foot is balanced by ensuring good trimming and shoeing.
- Regularly feel the animal's tendons and ligaments. If there is pain or heat, rest the animal because more work can make a mild injury severe.

Unit 10. Problems with foaling

Difficult Births



Normally when a donkey is giving birth [usually takes 10-30 minutes] the following occurs:

- Watery fluid pours out of the birth canal
- The mare strains powerfully and usually lies down
- A bag of fluid appears out of the birth canal with the foal's front feet inside it
- The bag breaks, the head and the body of the foal are pushed out and the foal takes its first breaths
- The umbilical cord should not be tied or broken because blood flows along it in the foal's body. Wait for it to break naturally.
- The mare continues to strain [usually takes 30 minutes -3 hours] until the afterbirth [placenta] comes out.

If the jenny has been straining for several hours without the foal coming out, there is probably a problem. The foal may not be coming normally..

Normally the foal is born with its two front feet first followed by its head and shoulders. If any other part of the body comes first or if the legs or head is bent, birth is difficult. Difficult births are dangerous for both the mare and foetus.

One has to be aware that the pelvic region of the donkey is small therefore there is not much room and that because of pain the mare will most often kick.

How to help in case of difficult birth

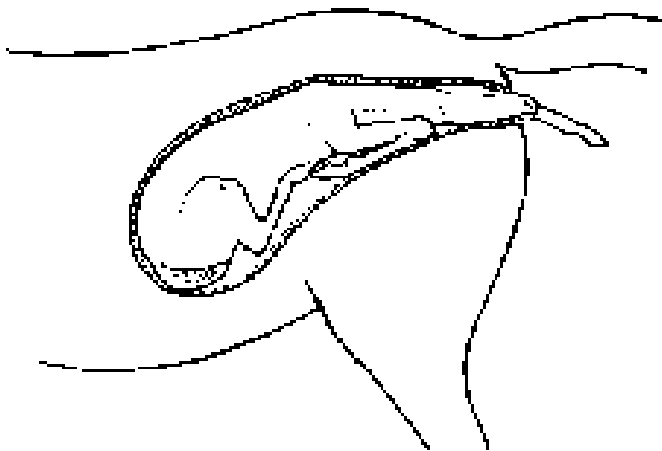
1. Make sure you have at least two buckets of clean water, soap and a rope
2. Make sure you have short nails. Quickly cut your nails if they are long to avoid causing injuries to the mare
3. Take off your watch and any jewellery
4. You need to have at least two assistants. Ask one of them to hold aside the tail

5. Wash around the birth area with soap and clean water
6. Wash your hands and arms thoroughly with clean water. Put soapy lather on one of your hands and arm
7. Slowly insert your arm into the birth canal to assess:
 - a. if the foetus is head first [of which you will feel the head, neck or arms depending on the problem] or back first [of which you will feel the tail and the backside] or side ways [of which you will feel all the limbs and belly]
 - b. position of the head [whether twisted downwards or upwards or sideways] and limbs [if twisted to face backwards]

What the problem may be and how to try to correct it

1. Lower front leg back

The foetus is coming out head first but one of the limbs is backwards



Push back the foetus' shoulder at the same time as bringing its foot forward. Cup the foot in your hand, while you pull it to protect the womb from injury.

2. Head and neck down between the forelegs

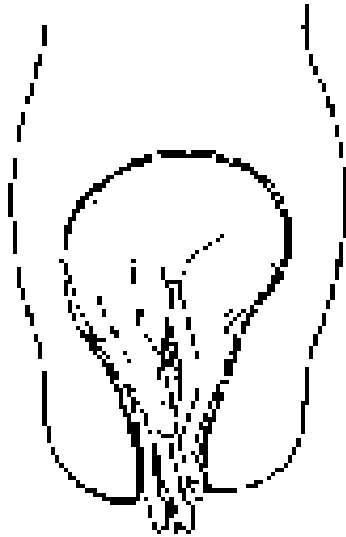
The foetus is coming out head first but the head and neck are facing downwards between the forelegs



Put a rope loop around the lower jaw. Get an assistant to **very, very gently** pull this while you push back on the forehead of the foetus

3. Foal lying across the birth canal

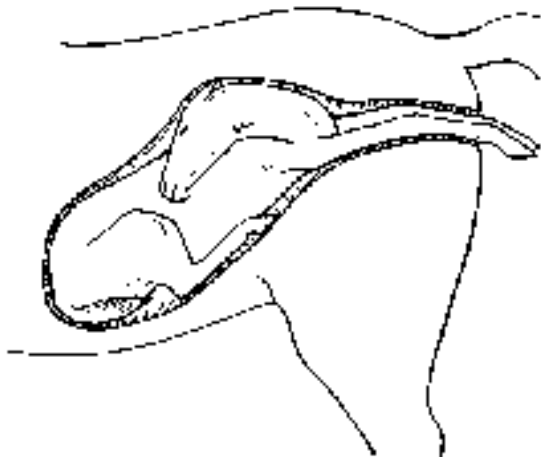
The foal appears sideways. One can feel all the four limbs. If you feel more than four limbs it might be a case of twins - but this is very rare in donkeys.



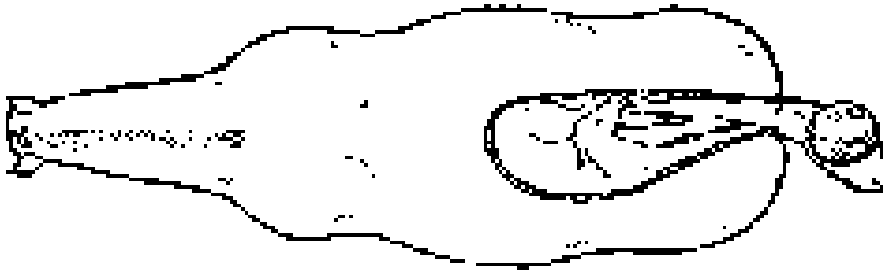
Attach ropes to the two back feet of the foetus. Get an assistant to gently pull these while you push the head and front feet back inside the mare. Now pull the foal out back legs first.

4. Head facing backwards /sideways

The foetus is coming out head first but the head is facing backwards therefore you can only feel the neck.



Since the neck of the foetus is long it is difficult to reach the head. Try to cup the head around the nose and pull the head forward. At the same time, push the foal's shoulder back with your other hand.



Caring for the newborn foal

It is important to make sure that, before it is 8-12 hours old, the foal drinks its mother's milk. This milk is called colostrum and it contains antibodies that pass from the foal's stomach to its blood. The antibodies protect the foal from diseases.

If the foal is unable to suck, gently milk the mare into a bucket. Pour this into a bottle and feed the foal from the bottle

Give 500ml at a time. Feed once per hour until the foal has had a total of 1-2 litres of colostrum.

Hygiene

Make sure the floor where the foal is kept is clean to avoid infections of the umbilical cord

The orphan foal

How to feed newborn foal in case it has no mother

- mix half a litre of cow's milk with half a litre of water
- add three small spoons of sugar [also add fine ground maize or rice and limestone if possible]
- give half a litre every two hours for four days
- as it grows give more to drink but less often.
- At two weeks old give two litres every four hours.

Vaginal prolapse



Picture showing vaginal prolapse before and after replacement

- Clean the prolapse well with dilute iodine solution, lubricate with intra-mammary antibiotic cream or eye ointment
- Replace gently back into the reproductive canal
- Place two matrix sutures on the topmost part of the vulva and in the middle. Because the urethra opening is on the vaginal floor, avoid placing any suture on the ventral aspect of the vulva lest you cut off urination
- Give antibiotic cover for a minimum of three days. Penicillin is most appropriate
- Tetanus anti-toxoid is also recommended in these conditions

Penile prolapse



Penile prolapse due to trauma to the penis, seen in donkeys during mating time, generally clean well with dilute iodine solution, cold ferment with clean

water and apply an antibiotic lubricant e.g. intramammary tubes ointment so that it doesn't dry off and begin to slough.

Belly edema



Belly edema is seen in donkeys many times and most cases occur due to either mastitis, diseases of the penis and vulva, immediately after foaling or just before foaling, helminthiasis, emaciation, Trypanosomosis and many times is of no obvious aetiology. Treatment based on cause and anti-inflammatory cover may also be of help.

ABORTION

Seen in donkeys and can be of either infectious origin, nutritional or idiopathic. The idiopathic abortions have limited interventions that can be implemented thus many times further investigations and monitoring is the only way to manage these conditions.

Unit 11. Minor Surgery

Castration

Occasionally a male donkey may need to be castrated, For example, for:

- Over-excited stallions that are difficult to control and may harm themselves or others (Aggressive behaviour in a group of donkeys may be sex related. *NB. Male groups often stabilise with time and in some cases a male donkey that is troublesome in one group is quite happy in another. Castration of an older stallion is unlikely to remove all related behaviour problems*)
- Selective breeding when attempts are being made to limit undesirable traits such as conformation problems
- Injuries or disease in the testicles or scrotum

Surgery of any type is usually a painful process. Therefore it is important to ensure that castration is actually necessary. If there are alternative ways of dealing with a situation, such as separating animals, these should be considered first. A management system that doesn't rely on castration is usually better than one that does.

Recommended castration method involves:

- Giving the donkey an anaesthetic to make it sleep
- Operating while it is under the anaesthetic
- Ensuring good hygiene
- Ensuring that precaution are in place to deal with any complication
- Giving pain relief, antibiotic and anti tetanus

Achieving these requirements can be expensive and difficult in field conditions.

Local methods of castration are often practiced. When there is no alternative, you can help to reduce possible complications such as infections by ensuring the following:

- Any blades used are clean and boiled for 10 minutes before use
- The area where the cut is made is washed and cleaned with diluted povidine if available

- After surgery, the donkey should not be worked but allowed gentle regular exercise to minimise swelling
- Drugs can be used to reduce inflammation and pain. Phenylbutazone is recommended [half gram twice a day] which translate to 4.4mg/kg Bid
- If the wound begins to look infected, if it swollen or pus is present, it should be cleaned with povidone and a course of penicillin given

Unit 12. *Medicine: Use, Storage and Dose Calculation*

Medicine Use

Medicine can help donkeys fight disease and reduce their pain. However:

- Medicines do not always make an animal better.
- Many diseases do not require medicines but respond well to nursing care and management advice
- Some diseases may be too advanced to be treated.

When a disease can be treated:

- Use the right medicine
- Ensure that it has been
 - properly stored
 - has not been open for long
 - is not contaminated from previous use
- Ensure the medicine has not expired
- Give the medicine at the right amount usually indicated on label
- Given by the correct route of administration (either oral, sub-cutaneous, intra-muscular or rectal)

Animal medicines **should not** be used for treating humans. It is possible that your supervising vet may sometimes be able to use human medicines for donkeys that have been tested on donkeys previously.

To be effective, medicines must be used properly. They can cause harm when misused.

Storage

1. For medicines to remain effective it is important that they are stored properly.
2. Storage should be in an area which is:
 - cool
 - dark
 - dry
 - secure
3. Medicines past their expiry date should not be used
4. Transport of medicines:
 - Cool box. (picture)
5. Records:
 - You should keep a record of all medicine received and dispensed for stock control and health and safety
6. Disposal:
 - Return all empty bottles back to the pharmacy or dispose them appropriately
 - To avoid injury and prevent misuse, all needles and syringes must be disposed of carefully. Needles should be placed in sharps container. (picture of sharps container)

The most common types of medicines that are given under the direction of a professionally trained and recognized animal health provider are:

- Antibiotics
- Anti- inflammatory and painkillers
- De-wormers
- Anti- trypanosomes

Dose Calculation

To calculate the dose for a medicine you need to know the following:

- The weight of the donkey (see below)
- Concentration of the medicine, usually written on the container or on a leaflet supplied with the medicine (Concentration is the amount of active ingredient each ml of medicine contains).

This is usually written as:

Mg/ml

iu/ml (pencillin)

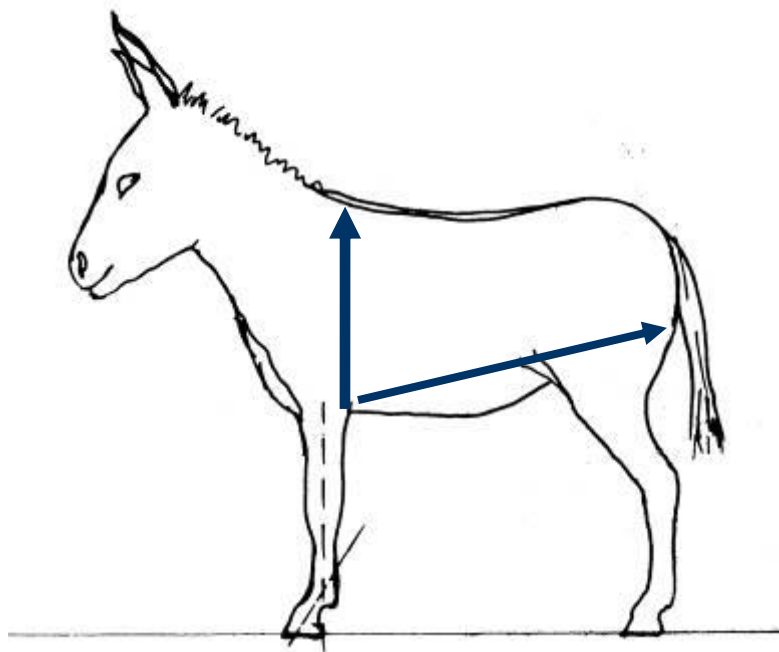
w/v (g/litre) Ivermectin

Mg/kg -ml/kg - iu/kg (penicillin only)

- Work out the amount to give (see examples below)

How to estimate body weight

It is important to know an animal's approximate body weight in order to work out how much medicine to give it. (The dose is usually worked out as the amount per kilogram of body weight. Thus, a 200kg animal would need twice as much medicine as a 100kg animal). An average adult donkey in Lamu weighs about 120 – 130 kg.



$$\text{Weight (kg)} = \frac{\text{Girth (cm)} \times \text{Girth (cm)} \times \text{Length (cm)}}{8717}$$

- Girth: back of withers just below elbow
- Length: elbow to point of buttock

The best equation to use to estimate live weight of an adult donkey is one which involves taking two measurements on the donkey – the girth and length.

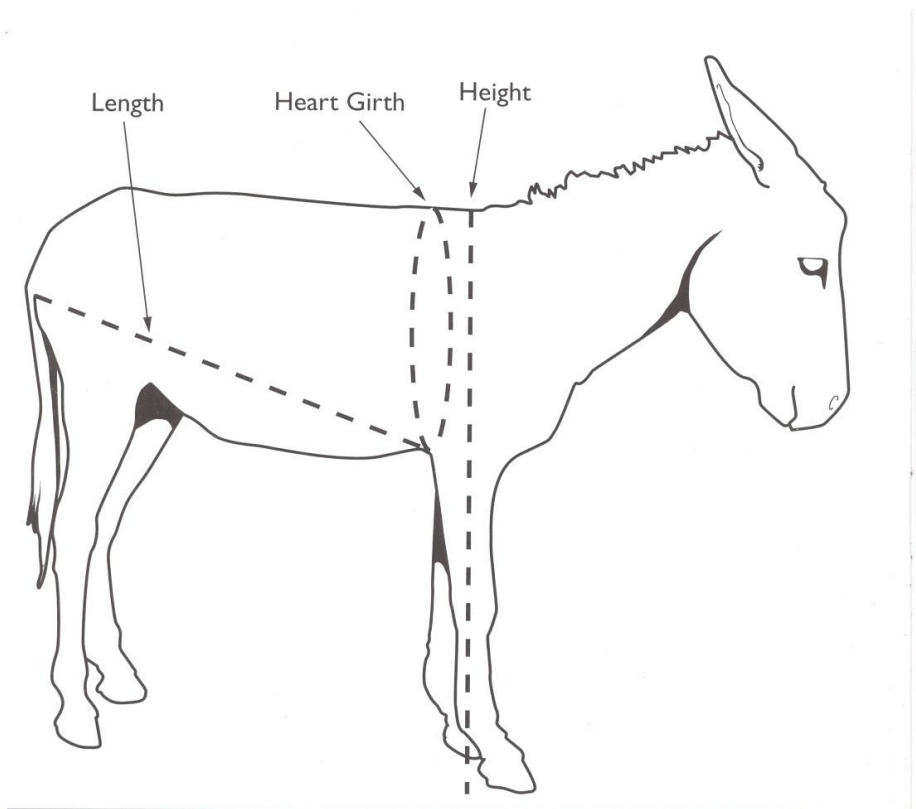


Figure 1.

The girth

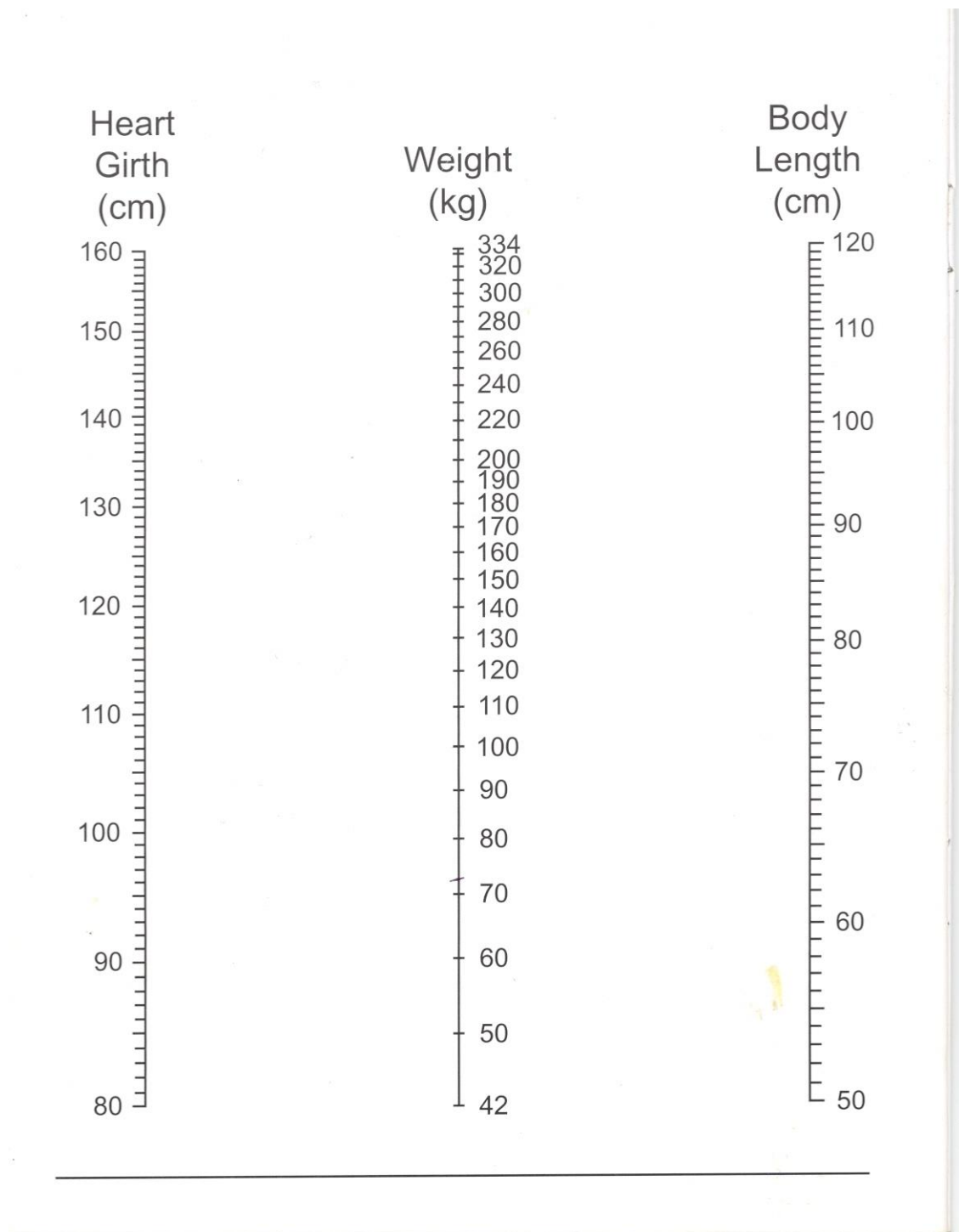
The girth is the measurement around the body just behind the front legs, in centimetres (cm). This is sometimes called the heart girth to distinguish it from the girth around the widest part of the donkey, which is sometimes called the umbilical girth.

The length

The length is the distance from the pin bone (tuber ischii) to the elbow in a straight line in centimetres (cm). This is easier to take and is more repeatable than measurement along the whole of the body from the point of the shoulder to the pin bone.

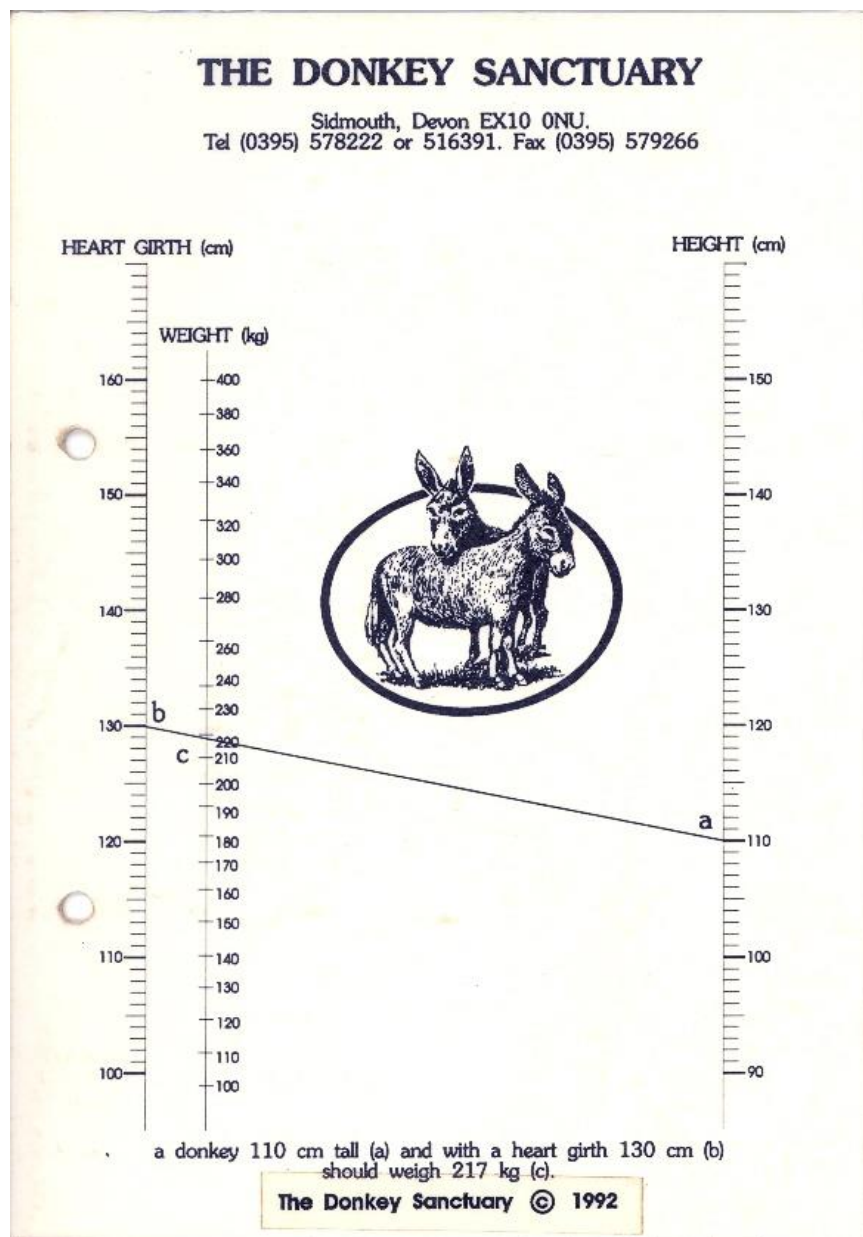
Having obtained the measurements, the next stage is to estimate the live weight using a nomogram (Figure 2)

Figure 2. Nomogram



Using the nomogram provided, draw a line on the chart using a ruler to link the girth measurement (cm) and the length measurement you have recorded for the donkey. Read off the weight where the pencil line crosses the weight line on the nomogram. This is the estimated live weight of the donkey. The advantage of this method is that you do not need a calculator to work out the live weight.

The other method is to use heart girth and height (see Figure 1). For this method use the nonogram below:



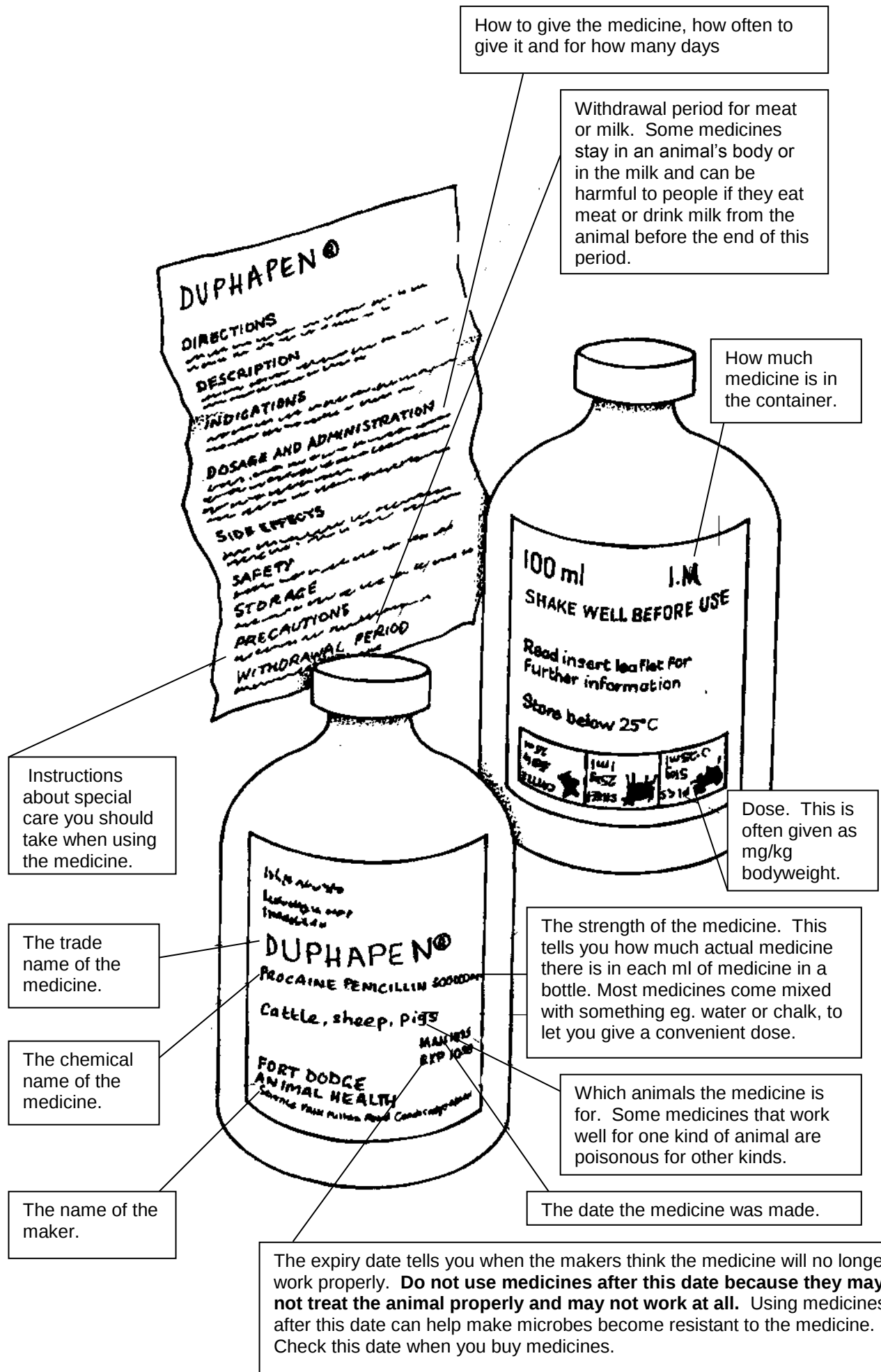
Tips when measuring a donkey

Make sure that the donkey is standing quietly with enough space for you to be able to walk around and handle it and without it being distracted by others. It should be standing in a well-lit area so that you can see it clearly. Make sure it is standing on level ground and is standing 'square' with its front feet next to each other and its back feet next to each other and its body straight.

Make sure you have a good measuring tape. For the girth it is best to have a soft tape such as that used in sewing clothes. If you only have a stiff metal tape such as that used in carpentry, then use a piece of string to measure round the girth and then measure it against the stiff tape afterwards.

A stiff metal measuring tape is easier to use for measuring the length but if you do not have one, then use a stick, marking the distance from elbow to pin bone (tuber ischii) on the stick and measure the distance using the soft tape afterwards.

Reading Labels



Though it is important to read labels, in many cases there are no medicines available that are manufactured for donkeys. These medicines will be used when your supervising vet has other information available which will help him to advise you which are suitable, the quantities they should be given in and how they should be given.

Medicine dose rate

Your supervising vet will advise you on the dose rate. The table below shows common rates for medicine commonly used in donkeys.

Trade Name	Drug	Dose		
Antibiotics				
	Procaine Penicillin	20 000 iu or 25 mg/kg OD i/m	Commonly used for infections in donkeys. Used for min of 3-5 days	
	Trimethoprim Sulphonamide/ (sulphamethoxazole)	30 mg/kg BID i/v i/m oral	Can be given by mouth – human preparation readily available	
NSAID pain killers				
	Phenylbutazone	4.4mg/kg iv followed by 2.2mg- 4.4mg po BID daily	Analgesia / anti-inflammatory	
	Flunixin meglumine	1.1mg/kg i.v MID or BID depending on severity of condition	Analgesic/anti-inflammatory especially for colic cases	
Drugs for gut worms / mange				
	Ivermectin ¹	200µg/kg po	Used for gut worms	
Antiprotozoals drugs – Trypanosomes				
	Homidium bromide	1mg/kg deep i.m	Trypanosomosis	Resistance is common – strategy to be developed.
	Isometamidium	0.5mg/kg deep i/m in 3 sites		Side affects can be significant.
Berenil	Diminazine	3.5 mg/kg Divide in to 2-3 portion 4 hrs apart		
Others				
	Imidocarb-dipropionate (Imizol)	1ml/50kg i.m to repeat after 48 hours	Used in cases of babesiosis/ red urine	

Example 1

A medicine has 5ml/100kg written on the packaging. This means 5 ml of medicine for each 100kg body weight of animal.

If the animal weighs less than 100kg, you need to inject less. If it weighs more, you need to inject more.

In this example, here are the amounts to give of a medicine with the dose of 5ml/100kg:

If the animal weighs 50kg, inject 2.5ml
 If the animal weighs 200kg, inject 10ml
 If the animal weighs 400kg, inject 20ml
 (If the animal weighs X kg, give $x/100 \times 5$ ml)

Example 2

Another medicine is to be given at a dose of 5mg/kg. This means 5mg of medicine for each kg of bodyweight of the animal. The medicine package says that each ml contains 100mg of the drug.

In this example:

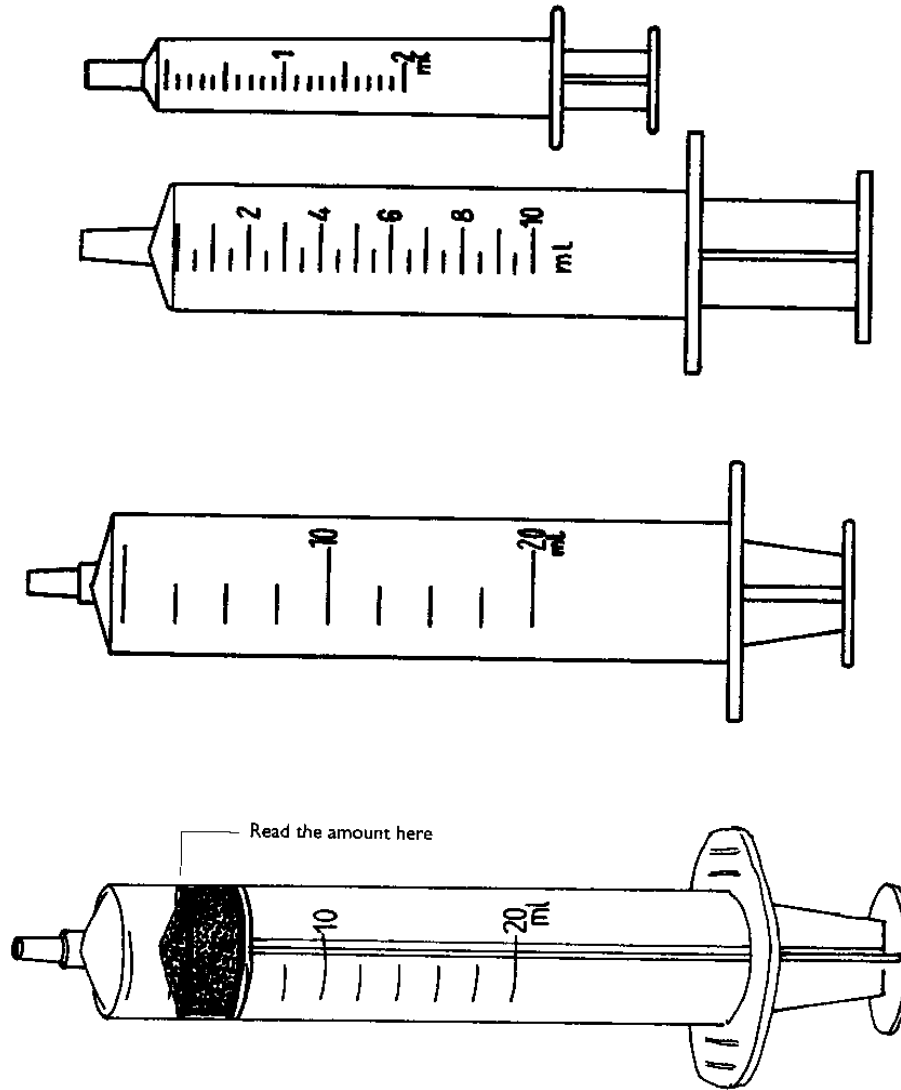
If the animal weighs 120kg it needs $120 \times 5 = 600$ mg of drug.
 As 1ml contains 100mg, 6ml contains 600mg. Therefore give 6ml.

If the animal weighs 140kg it needs $140 \times 5 = 700$ mg of drug.
 As 1ml contains 100mg, 7ml contains 2000mg. Therefore give 7ml.

How to give injections

Syringes and needles

Some syringes are marked cc and some with ml. Cubic centimetres (cc) and millilitres (ml) are the same

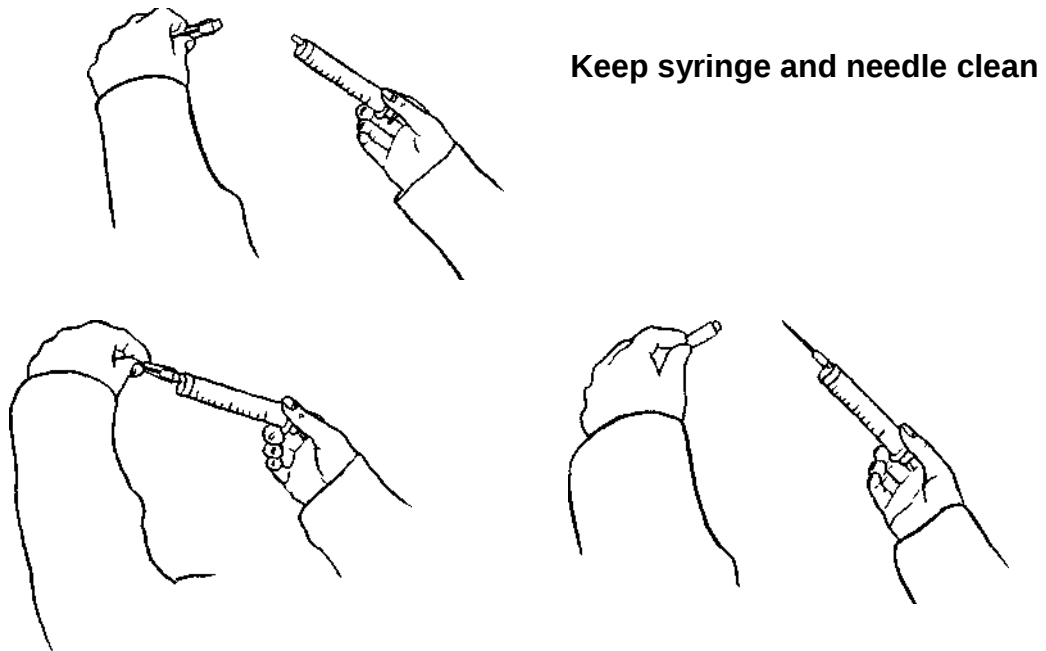


How to handle a syringe and needle

Needles and the medicine inside a syringe go into the body. They have to be perfectly clean or the injection site can get infected. Therefore, the syringe and needle must be either disposable equipment taken from new wrapping, or sterilized by boiling for 10 minutes.

How to attach a needle to a syringe

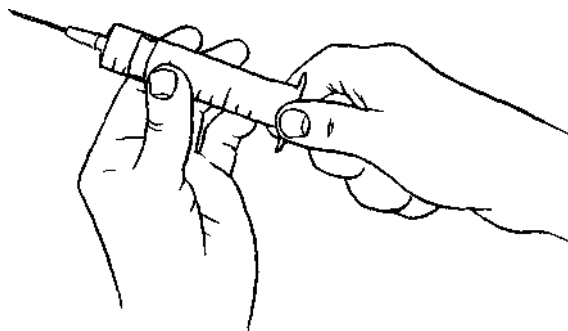
Attach a disposable needle to a syringe by holding the needle cover, like this.



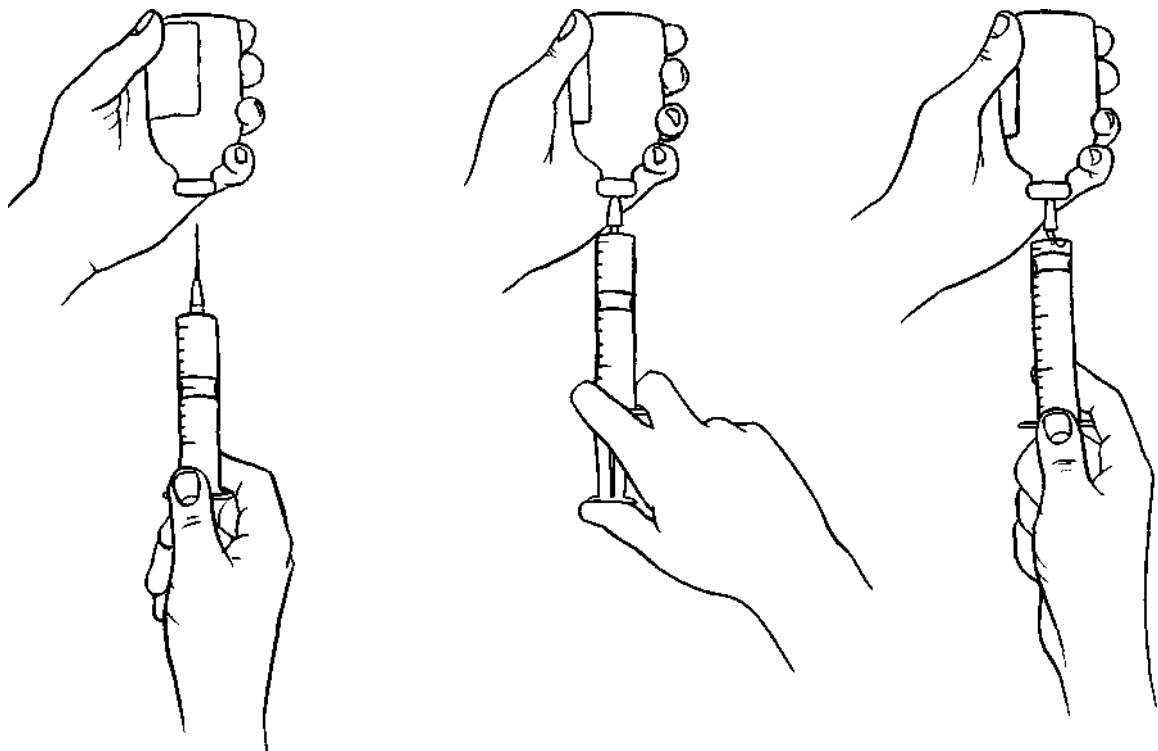
Never touch the metal, thin part of the needle (or dirt from your fingers may go into the animal). If you drop the needle, do not use it. Use a new one (or a re-usable one that has been sterilized).

How to load a syringe

- Be sure the needle is firmly attached.
- Draw some air into the syringe by pulling back the plunger.



- Turn the bottle of medicine upside-down, insert the needle through the centre of the rubber stopper and slowly inject air into the bottle.



- Now draw the medicine into the syringe.
- Keep the bottle above the syringe so any air bubbles in the syringe go to the top.
- Push the plunger carefully so the air comes out.
- Now see if the right amount is in the syringe (the top of the plunger should be on the line for the proper dose).
- Withdraw more medicine or squirt some back into the bottle until the right amount is in the syringe.

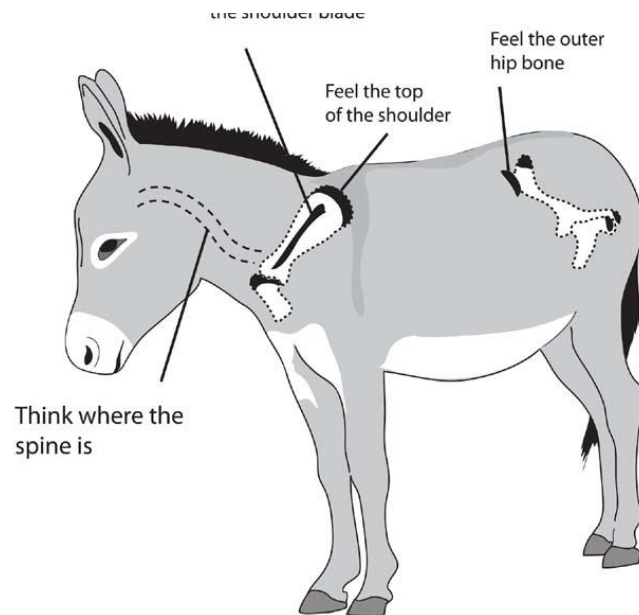
How to give an intramuscular or 'IM' injection

Most medicines are injected into muscle, by intramuscular or IM injection. In an IM injection the medicine goes into the muscle or meat of the animal, in the rump or in the neck. Vaccinations are usually given into the neck muscle. Very thin animals should always be injected into the rump.

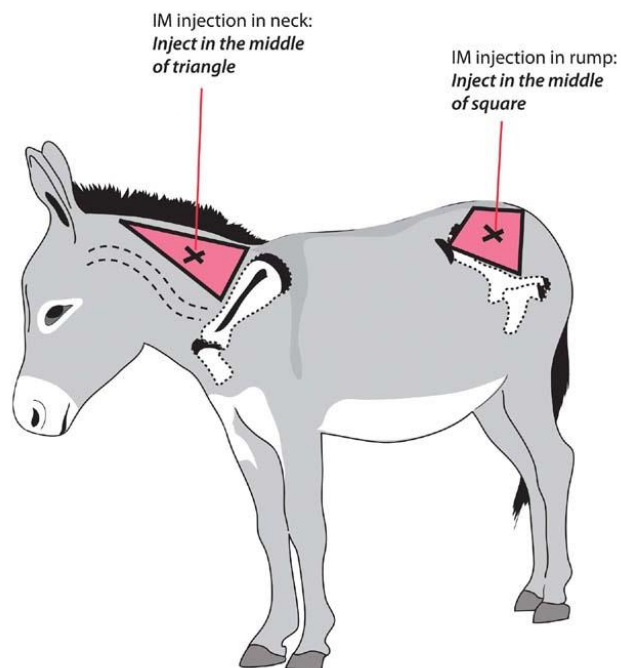
WHERE TO INJECT

First, be able to feel the bony points labelled in the picture. Also, think where in the neck the spine is, also shown in the picture. The parts of bones that can be felt are shaded black in the picture.

For a neck IM injection, put the needle into the middle of an imaginary triangle bounded by the spine, the shoulder blade and the top of the neck.



For a rump IM injection, aim for the middle of an imaginary square bounded by the point of the hip, the top of the thigh bone, the base of the tail and the back bone.



HOW TO INJECT INTO THE NECK MUSCLE

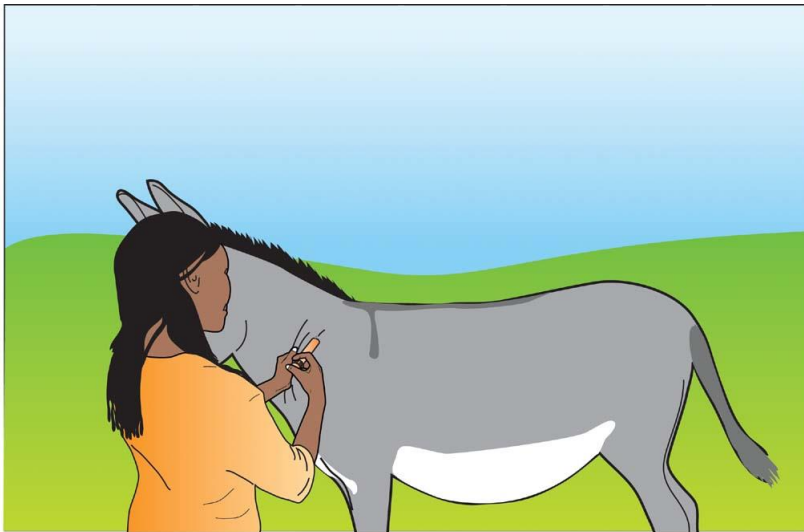
Pinch the skin with the left hand and introduce the needle slowly with the right hand.

Try to suck back to make sure the needle is not in a blood vessel and, if you see blood into the syringe, take the needle out and start again.

Firmly squeeze the plunger to inject the medicine into the muscle.

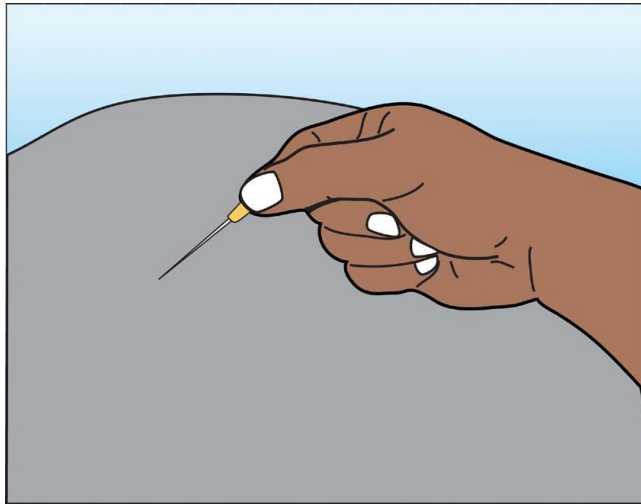
Pull out the needle, rub the site.

Reward the animal with kind words and a pat if it behaved.



HOW TO INJECT INTO THE RUMP (GLUTEAL MUSCLES')

- Choose a clean area of skin (if you have surgical spirit and cotton wool, wipe the injection site with it).
- Remove the needle from the syringe (do not touch the needle itself).
- Hold the needle by the base between finger and thumb with the point away from the palm of your hand.
- Lightly slap the back of your hand against the animal's skin twice.



- On the third slap, turn your hand and slap the point of the needle in right to the base of the needle.
- Attach the syringe to the needle.
- Continue with the other steps as for injecting into the neck.

Subcutaneous or 'SC' injection

In a subcutaneous injection, medicine is injected just under the skin of the animal.

Some medicines, tetanus antitoxin and some vaccines are given as SC injections.

The place for a subcutaneous injection is the skin on the side of the neck.

Medicines by mouth

Pills can be crushed between two spoons

An ivermectin syringe is filled using a needle but it can be given by mouth. It is important that the needle is taken from the syringe before the dose is given.



Medicine can be dissolved in water to make a paste

To make a paste syringe, cut the end off a normal plastic syringe. Mix the medicine to make a sticky paste.

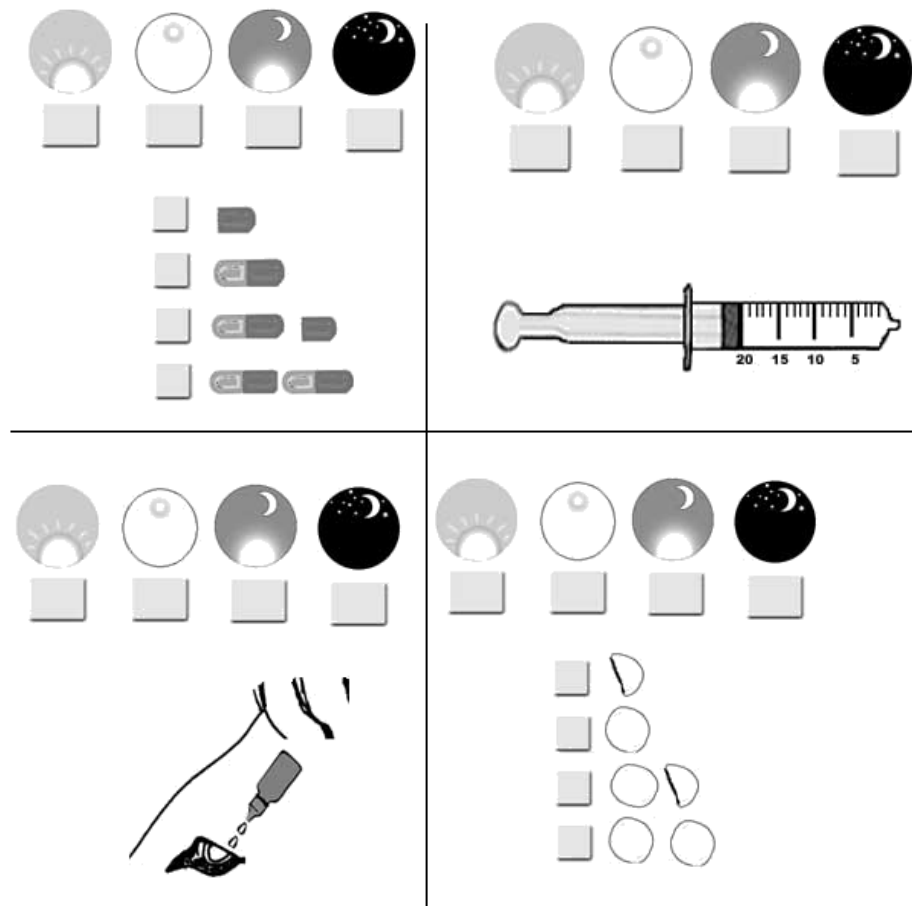
Be very careful about giving donkeys medicine from a bottle. There is a danger of the animal biting the bottle and breaking the glass. Put a piece of plastic or rubber pipe on the neck of the bottle. Also, be careful to allow the donkey time to swallow properly.

Dispensing medicines

When medicines are dispensed to an owner they must be in suitable containers with clear instructions.

Medicines should be put in an appropriate container with clear instructions as to how, when and how many times they should be given. This applies to any product including, for example, eye drops.

Example of pictorial instructions



Unit 13. *Promoting Good Health & Welfare*

In addition to responding to problems the AHP is expected to promote good welfare at every opportunity. Welfare includes:

- Nutrition
- Housing
- Harnessing
- Foals
- Designing and implementing an extension programme
- Identifying and communicating good messages
- Using cartoons

Harnessing

What is a harness?

It is a system or a device that is fitted on the body of a donkey

Some of the functions of a harness are:

- To control the donkey e.g a halter
- To transfer/transmit power from the donkey to the cart e.g breast band, collar or harness
- To hold in place any load carried e.g saddle
- To act as a braking system when pulling cart

To avoid injuries the harness must:

- Be comfortable and made of the right material i.e soft material
- Fit properly
- Be padded
- Have a large contact area between the load and the skin to spread the load and to prevent heavy rubbing or pressure on a small area of skin
- Not have sharp edges
- Not impede the donkey's movement, breathing, blood supply, urinating or passing dung

Harnessing donkeys used as pack animals

Pack animals are those that carry goods on their back.

It is essential that there is padding between the load and the donkeys' back to prevent wounds.

Thin donkeys need more padding

Layers of padding

1. Padding next to the skin:

Several layers of cotton material [from old clothes] next to the skin is ideal. Cotton is suitable because it is soft for protection and absorbs sweat. Clothes used for padding should be replaced regularly.

2. Cushioning layer:

This follows the padding

Locally made padding, old blankets, sacks, padded sacks with straw [with straws sawn inside] are suitable.

3. Saddle or container for holding the load:

This is placed on top of the cushioning layer

Securing the load using breast and breech strap for pack donkeys

The breast strap is the part of the harness that comes around the lower neck. It prevents the load from sliding forward when going down hill.

The breech strap is the part of the harness that comes around the back end of the donkey. It prevents the load from sliding backwards when going uphill. To minimize injuries it should be a little loose and should pass around the thigh [half way between the base of the tail and the hocks] and not underneath the tail.

In some communities the load is further secured by passing the rope along the sternum [lower side of the thorax] and along the belly causing wounds and discomfort especially for the Jacks because the rope pinches on the penis. For such cases the rope should pass across the belly.

Harnessing donkeys that pull carts

Donkey carts in Kenya are very variable depending on the topography of the region and use of the donkey.

The donkey is attached to the cart using:

1. Breast strap

2. Saddle

Should be placed on the withers

Put the padding layer first then the cushioning layer before putting the saddle

3. Girth Strap

A wide strap [e.g piece of cloth] that passes along the girth

It prevents the donkey from being pulled upwards when unloading

4. Breech Strap

If using ropes as straps these should be padded properly using old clothes.

Design features of carts

Carts should be made from light material i.e not heavy. Oxen-type carts are not recommended for donkeys because the yolk can create wounds on the neck of the donkey. The design causes a lot of distress because the weight is on the neck not the withers

Loading

- Overloading causes distress and wounds to donkeys
- It is against the law to overload donkeys

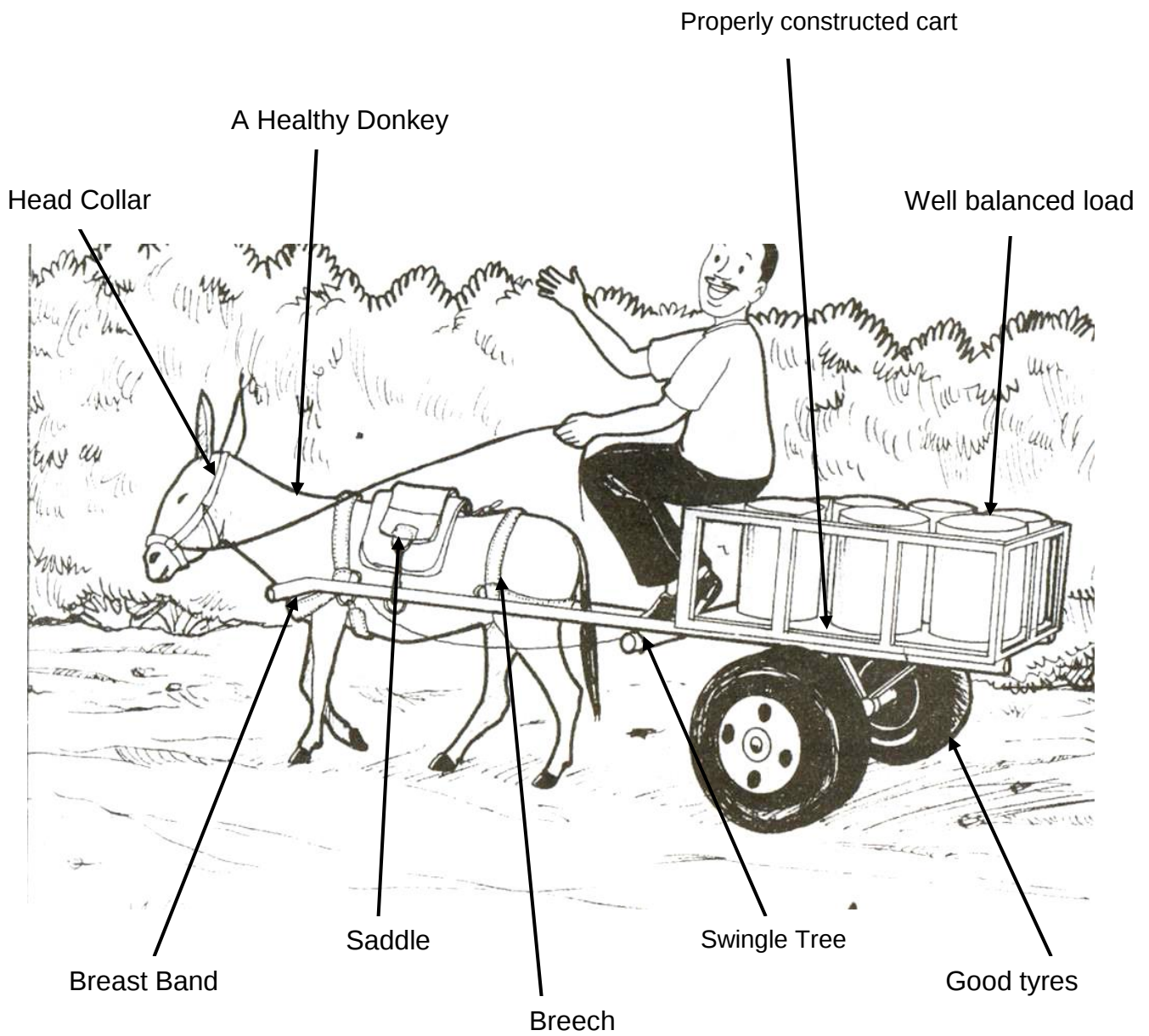
- Pack donkeys can carry a third to a half their weight - e.g a 150 kg donkey can carry 50 to 75 kg on its back.
- For carts the capacity should be 200kg for a well designed cart with good harnessing. Poorly made carts - very heavy or with poor harnessing (such as with only thinly padded breast straps) cause distress to donkeys and decrease the efficiency of pulling.
- One has to consider the distance and terrain before loading.

Balancing the load

For the two wheeled cart make sure the load is balanced over the wheels so that there is no upward lift by the shafts.

For the pack donkeys the load should be over the shoulders just behind the withers to distribute the load evenly

Elements of Good Harnessing



Advice on Feed

Donkeys are often over-worked and underfed.

- Donkeys working for 8 hrs need 2.5 times the energy intake of a non-working donkey.
- A lactating, non-working mare needs more food.

Unless roughage is of top quality (such as legumes), some form of concentrates like grains are essential to maintain optimum weight

Basic feeding principles

- Allow enough time for grazing during the day time and at night (in a secure area). Note that at the start of the rainy season ingestion of the new grass may cause severe enteritis thus ensure you control a donkeys exposure to the new grass.
- During periods of drought or disease, additional supplementary feeds such as bran are needed. In cases like the semi arid regions of Kenya where supplementary feeds may not be available or affordable then the donkey to be allowed longer time to look for food and possibly worked less time a day to reduce energy demand for the donkeys metabolism.
- Very active donkeys need supplementary feed to cater for increased energy and body repair requirements.
- Ensure foals get enough time to suckle especially if the dam is a working donkey. Once the foal begins to feed, supplement its diet with bran, soft grass etc.
- Ensure that donkeys do not forage at rubbish dump sites as they may end up with obstructive colic due to ingestion of plastic bags or may be poisoned.
- Intake of too much grains e.g rice or maize may cause severe enteritis and can lead to death.
- Freely water the donkey.

Humane Killing

Humane killing means that the animal is killed with the least suffering possible, with minimal pain and distress.

In many cases the only way to effectively relieve the pain of an animal suffering from a terminal or untreatable condition is to kill it as humanely as possible.

Where possible an AHP should try and prevent a donkey suffering for a longer time than is necessary before it dies by humanely killing it.

A humane killing method should result in rapid loss of consciousness in the donkey followed by death, when the heart and brain cease functioning.

Where a donkey has an owner it is important to explain the need for humane killing fully, and to get the owner's support for this. In some cases it may take time for the owner to trust that you are telling them the right thing, and may involve a number of visits.

Where possible, advice and help should be given about how to safely dispose the body

When to advise euthanasia

- Irreparable limb fracture
- Colic cases that are only getting worse and not responding to treatment
- When the animal is not going to get well enough to work again and the owner will not be able to look after it.
- When a donkey needs long-term medication that is not available or that the owner is not likely to give and as a result the donkey is going to suffer
- Where the owner is likely to abandon the donkey and there is a risk that the donkey will suffer as a consequence

It is preferable that old animals are humanely slaughtered at the end of their working life in their normal environment rather than abandoned and left to die.

Ways to humanely kill donkeys

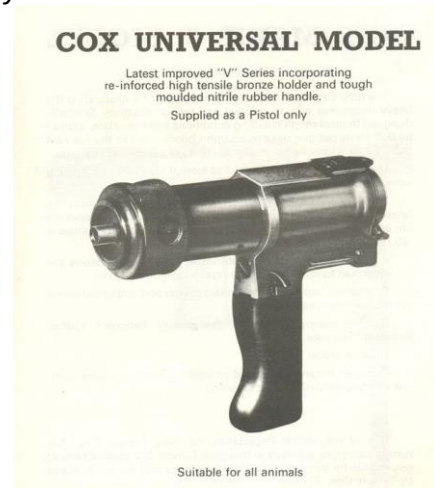
The process of humane killing begins at the moment that the decision is taken to kill the animal.

The donkey must be treated sensitively. A donkey that is old and not able to work deserves the same respect as a valuable animal. The old donkey has the same feelings as a younger one, and may have already contributed a lifetime's

work to a family. Any form of distress should minimise before it is killed so it should be handled kindly.

Ideally, donkeys should feel no pain during the procedure. The most practical way to achieve this is to stun the donkey first. This should be done by someone with experience. The consequence of improper stunning can be great pain for the donkey.

Below are some stunning guns available locally



Stunning does not kill the donkey, but if it done properly, the animal will be unconscious long enough for it to be killed by cutting the artery at the base of the neck. The animal will bleed to death while still unconscious.

The use of a special type of gun called a captive bolt has a similar effect to the above method but produces a more reliable result as it allows the gun to be placed exactly where it need to go and deliver the right force. It is often only available at a slaughter house. The captive bolt is also followed immediately by bleeding.

Another method that may be used by vets is to give an overdose of an anaesthetic agent. This either makes the donkey go to sleep so deeply that it dies or else it can be killed while asleep by cutting the artery.



The optimum position to stun a donkey is at right angles to the frontal surface, at the point where imaginary lines from eyes to ears cross.

Signs of correct stunning using a mechanical instrument are as follows:

- the animal collapses immediately and does not attempt to stand up
- the body and muscles of the animal become rigid immediately after the shot
- normal rhythmic breathing stops
- the eyelid is open with the eyeball facing straight ahead and not rotated

A firearm can be used but only in emergency situation and then only by someone trained and licensed to use it properly.

When using a rifle the muzzle of the rifle should be held from 5-25 cm away from the donkey's forehead and aimed down at the length of the neck into the main bulk of the body.

In the absence of these methods, a very sharp knife can be used to make a **quick single, deep cut** across the neck. The objective is to sever the two jugular veins and possibly the carotid arteries with one single deep cut to the throat on a donkey which is well restraint.

In all cases it must be ensured that the animal is dead by checking that there is no heartbeat for a minimum period of 5 minutes.

Record Keeping

It is important to keep good records of the cases you see. Clear records will help you to understand your area well and to learn from your experiences. They will also help to identify areas that need further investigation.

Extension Services to Farmer

Definition of extension

The passage of specific information to a specific target group with the aim of either improving or changing the way they do things with the end result of uplifting their general wellbeing.

Definition of communications

Communication is the means by which ideas are transferred from a source to a receiver

Protocol for a successful extension program

- Extension should be demand driven and beneficiary led
- Extension works with the people not from the people
- Extension is a two way process
- The primary interest should be to change knowledge base so as to increase efficiency in resource use
- Objective of extension is to build confidence and self reliance and this will enable the farmer to identify and solve their own problems
- There has to be a feedback, monitoring and evaluation system

Characteristics of good extension agent

- Conversant and acceptable within the community
- Good communication skills
- Good listener
- Collaborative (cooperative)
- Sensitive/caring
- Innovative
- Credible and reliable
- Objective and a good planner

Needs identification

A need is a state that exists when there is a gap between present situation (what is) and hoped for or required state (what ought to be)

Why identify needs?

- Because of existence of biases on both sides (extension educator and local people) the success of a development programme depends greatly on the degree to which the benefiting community acknowledge the programme as part of solution to the problems they see and feel and not on the problems the extension agent see as the main one.
- Because credibility of the extension educator or of the organisation can be at stake if programs are developed that don't meet the needs of people

- Potential conflicts and resistance can be avoided if people are involved in need identification.
- Involving people in needs identification can have a positive effect on motivation and lead to more participation, ownership and commitment.

Categories of needs

1. **Expressed felt needs/ high priority or obvious needs:** are felt by the people and recognised by extension worker
2. **Unexpressed felt needs:** are felt by the people but not recognised by the extension educator

Factors which prevent people from expressing their needs

- If they perceive that they lack the skill or knowledge to carry out the project or meet the need
- Fear of being judged or being seen as going against the community's norms
- Previous negative experience
- If the way to meet the need appears to be involving or require too much commitment

These can be overcome by:

- Establishing climate of trust by working in an open and non-judgemental manner
 - Try to learn about the community and their citizens i.e. their norms
 - Communities perception of its skills and abilities
 - Establish a feeling in the community that there is a chance of success
3. **Unfelt needs:** needs known by extension worker but not the people
 4. **Ascribed needs:** needs felt or seen by extension worker but not present in the community

NB: any extension agent should always prioritise expressed felt needs and unexpressed felt needs and build on this while guiding the community in a participatory way to identify the unfelt needs and the ascribed needs to ensure better chances of success in implementing either development or intervention programmes in the community

Adoption/diffusion process

Diffusion: sequence of acceptance of a new idea or practice among designated group of people e.g. a village, state, district, region
Widespread use of a given technology among designated group of people

Adoption: actual act of accepting an innovation and using it continuously e.g. new tool, idea, etc.

Adoption rate: the speed with which an innovation is accepted and used by a designated group of people

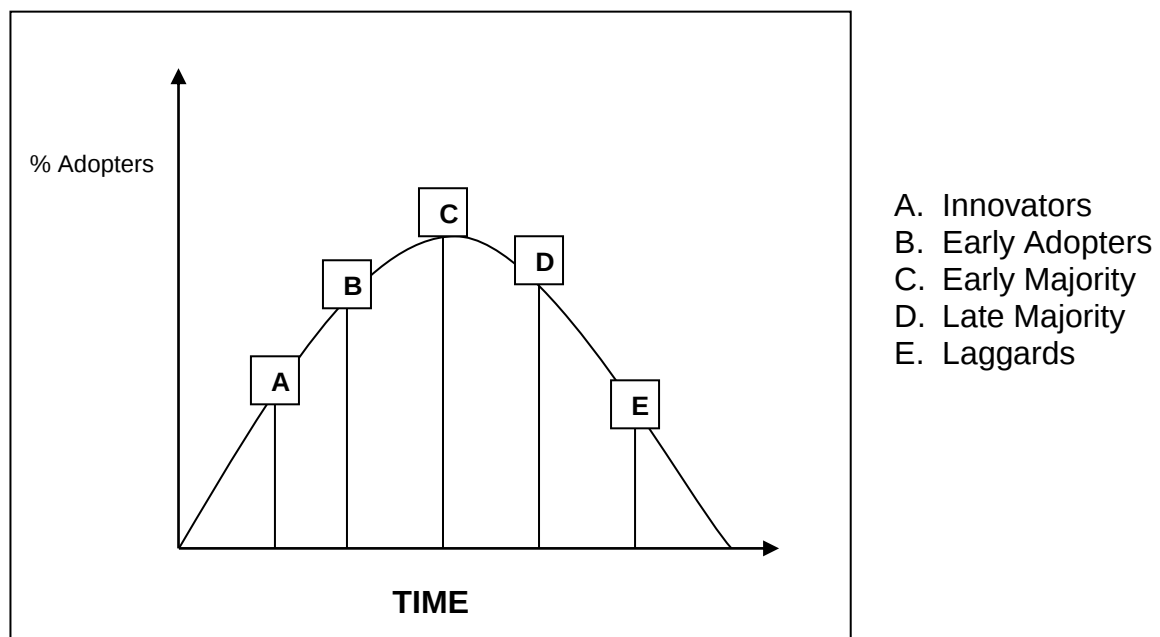
Five determinants of adoption

- Type of innovative decisions
- Perceived attributes of the innovation i.e. quality association with a given innovation
- Nature of the clientele system
- Nature of communication channels used
- Extent of the extension practitioner's effort

Nature of the clientele system

One aspect of clientele system that affects rate of adoption is the distribution of innovativeness in the social system i.e. degree to which an individual is relatively earlier in adopting new ideas than other members of the social system.

Categories of adopters to come up with:



Innovators

- Are venturesome, have psychological and financial ability to assume the risk of being the first to try a new idea
- Have the ability to understand and apply complex technical knowledge

Early adopters

- Next 10-15% to adopt
- Are respected, high social status, possess great deal of opinion leadership
- Serve as role models and viewed as people to check with before undertaking new ideas.

Early majority

- Represent approximately a third of the population who adopt just before average number in the social system
- Are deliberate because of their relatively longer innovation decision period

Late majority

- Represent one third of the population who adopt just after average member in the social system
- Are sceptical- adopt due to economic necessity or increased social pressure

Laggards

- Represent last 15% to adopt
- Are traditional – are oriented to the past and decisions are made on what was done in the past
- Are the most localised of all the adopters, some may be more isolated
- Are often suspicious of innovations, innovators and social change agents
- While they may be improved in the greatest assistance, they are the most difficult for extension agents to work with.

Extension Methodologies

These are techniques used to present or disseminate information to a given target group.

Social change agent: person who consciously and deliberately tries to inform people thereby changing their behaviour or attitude.

Methods used are:

1. Demonstration
2. Group discussions
3. Experimentation
4. Field trips/tours
5. Workshops /seminars
6. Exhibition
7. Media
8. Others – role play

1. Demonstration:

Calls for a good step by step practise in which the participants are given first hand observational experience on how to carry out a new skill.

2. Group discussions

Technique to cooperatively pool knowledge, ideas, opinions about a subject in order to learn new information or solve a problem

3. Experimentation

Useful as a follow up to demonstration or a method to discover a solution

4. Field trips

Useful to enable learners to observe first hand processes procedure or practical events in the field.

5. Exhibition

Include use of posters and billboards to create awareness, influence attitude, improve knowledge and stimulate action

6. Role play

Concerns dramatisation of a situation to show reactions and behaviour e.g. through concerts, song and dance

Communication process

Communication is the means by which ideas are transferred from a source to a receiver.

Directional considerations in communication process: 3 views –

A. 1 way view: holds three important components

- Message sender or source
- The message
- The receiver

Encoding occurs at the source – converting whatever the sender wishes to communicate into a signal that can be transmitted to an independent receiver e.g. spoken word, written, electronic.

Decoding occurs at the receiver – assigning meanings to what is seen or heard so that the receiver is able to hear it if it is sent through sound waves or see it if it is sent through light waves.

Successful communication occurs when the meaning generated and attributed coincide.

B. 2 way view: communication is under minimum 2 ways:

I.e. message sender should be sensitive to how the receiver responds to the message sent; therefore there should be a feedback mechanism.

There should be TRUE INTERACTION in order to develop accurate mutual understanding whereby message sender and receiver listen to one another and each truly considers what the other is saying in each subsequent response.

C. 3rd view: circular view

Interaction is a continuous process in which the initial message sender and receiver alternate positions over a long period of time, if not forever. Therefore, one can't say communication begins when one picks a pen to write or starts to speak. However, by giving careful thought to how intended audiences or individuals would respond to messages and by making adjustments in cases of anticipated responses we can prepare better messages and become more effective communicators.

Factors considered for successful communication to occur

Reputation of information source

- Many ways in which information sources can be viewed: friendly, warm, accessible, up to date, knowledgeable, credible.
- Of all these qualities, the most important is credibility.
- possession of technical knowledge and ability to adapt to local situations
- trustworthiness
- A credible source is attended to, sought after and used much more than that which isn't.
- Information from a credible source is much more likely to be accepted than that which isn't.

Environmental setting in which communication occurs

- Time, place and physical arrangement of facilities all influence messages receipt and impact.
- Certain places are set aside for specific sites for communication so that the same token where farmers work may be good for information exchange since field setting is good for demonstration and explaining innovations

Group influence

- High quality decisions are more likely to come from a group than from individuals. The group is less likely than the individual to miss important points.
- Those that disagree have an opportunity to be heard

Some social groups are:

Primary groups – just about everyone is a member in kind of family, friends or relatives with whom they associate more, hence intimate communication, and members care for each other. Research has shown that these groups have an important effect on whether one becomes supposed to a message, how they perceive it and respond.

Special interest groups - people with special interests, organised to pursue those interests and have entry requirements, committees and are engaged in activities of achieving group goals. They share profits and losses e.g. farmer associations, or unions or cooperatives

Locality groups – geographical area often take special and significant meaning for those who leave there. In a sense, the locality groups are held together by what goes on inside, i.e. held together by interdependencies that develop in each locality, by the fact that people in certain localities develop mutual

concern i.e. associate more closely with neighbourhood members than with 'outsiders' and contact with others within are intimate and face to face.

Two types of communication process

Interpersonal communication

- Communication that occurs on a person to person basis in situations in which both or all persons are physically present
- Involves face to face exchange between 2 or more individuals
- E.g. demonstration, group discussions, workshop, lectures, field trips can be used effectively
 - a. In order to allow direct two way exchange of ideas for clarification and overcoming barriers of selective exposure
 - b. In forming or changing strongly held attitudes
 - c. In overcoming resistance or apathy (indifference)
 - d. In reaching later adopters.

Points to consider for improving communication with target groups

1. Take time to develop an understanding of how communication works by cultivating either sensitivity to conditions that affect results either positively or negatively
2. Don't speak one way and act another and remember that you are not a good actor to act otherwise
3. Listen. It takes time and hard work, but it is necessary and worth it. Attempt to understand the other person as they speak
4. Cultivate sincere interest in your clients. Be warm, helpful and attentive.
5. Respect the other person and their beliefs.

Mass media communication channels

- These are means of transmitting messages that enable a source of one or a few individuals to reach an audience of many
- Used to communicate with those seen and generally not personally known
- E.g. publications: agricultural journals, newsletters, feature articles; electronic: radio, TV, tape recorders

Used efficiently to:

1. Reach a large audience rapidly with indirect feedback
2. Create knowledge and spread the information
3. Change weakly held attitudes
4. Reach early adopters (innovators)

DONKEY KIT

Syringes
Needles
Blades
Bandages
Cotton wool
Wound wash
Antibiotic especially oral type if possible

[Injection card]

Penicillin
Sulpha/Trim parenteral and oral
Phenylbutazone
Flunixin

[Medicine use card]

Advanced

Stomach tube

[Fluid therapy card]

Hoof knife
Nippers
File