7.4 Resistance to Disease
All animals have a certain amount of built in resistance to disease. If this resistance is lowered in any way the animal becomes more likely to catch a disease. There are many things which may lower the resistance to disease, some of which are due to bad housing and management, such as cold, wet, draughty conditions and poor feeding. The presence of one disease may also lower the resistance so that the animals get another disease as well. For example snuffles may lead to pneumonia, particularly if the rabbit is cold or damp or poorly fed.

7.5 Action to take on the outbreak of disease
If the measures outlined in the previous section are taken, a serious outbreak of disease will be unlikely. However disease can occur in even the best managed rabbitries and the rabbit keeper must be prepared to deal with it. Careful observation of his stock every day will enable him to detect signs of possible disease at an early stage. Action may then be as follows:

7.5.1 Isolate any animals suspected of having an infectious or contagious disease. This means that they should be kept in cages in a totally separate place from all the other rabbits including wild rabbits (see Section 6.7.7 Quarantine Hutches). During your daily routine, you should attend to your healthy rabbits first, then go to treat your sick rabbits in the quarantine area. Wear if possible different overalls when treating the sick rabbits and leave them hanging up in the quarantine building when you finish.

Put a bucket of disinfectant near the sick rabbits and thoroughly wash your hands, arms and boots in it after treating each sick rabbit.

7.5.2 Thoroughly clean and disinfect the hutch and all equipment which has been used for the affected rabbits.

7.5.3 Comfort Make sure the sick rabbits are warm and comfortable to give them the best chance of recovering from the disease.
7.5.4 If possible diagnose the trouble and take appropriate measures to treat it. In the case of valuable breeding stock, call the veterinarian or your extension agent.

7.5.5 If the animal does not respond to the treatment, or if there is no treatment for the particular disease (e.g. Myxomatosis), it is necessary to slaughter the animal and burn the carcass.

Never eat the carcass of a diseased rabbit and do not feed it to any other animals (such as dogs). The disease will still be in the carcass and may infect people or animals if they eat it. Always burn the body of a rabbit which died because of disease.

7.6 Coccidiosis

7.6.1 Symptoms (the signs by which the disease is recognised). Coccidiosis is a disease of the intestines and sometimes the liver. It is more common in younger rabbits just after weaning but it can also affect older rabbits. As rabbits get older they sometimes develop resistance to Coccidiosis.

An affected rabbit usually has diarrhea, sometimes with a little blood in it. It will often sit hunched up, with its legs extended forwards. The fur will look dull and harsh, and the rabbit will lose weight.

7.6.2 Cause Coccidiosis is caused by protozoa called Eimeria. It attacks the intestines and sometimes the liver. The droppings (usually diarrhea) of affected rabbits will contain many Eimeria eggs. These can be identified by sending a sample of an affected rabbit’s droppings to a laboratory for examination. The disease is passed from one rabbit to another by these droppings and by contamination of feed, bedding and hutch equipment.

7.6.3 Prevention (see Section 7.3) Regular thorough cleaning and disinfection of hutches and equipment is especially important with Coccidiosis. To prevent the disease from spreading, it is essential to keep everything absolutely clean, particularly the hutches, feeders and drinkers.
7.6.4 **Treatment** As already discussed in Section 7.5 Drugs used for treatment are:

(i) Sulphamezathine. Give 1ml per 1.5 litres drinking water per rabbit per day.
(ii) Sulphaquinoxaline. Give in feed, mixed at at rate of 255g/ton.
(iii) Pancoxin (Amprolium manufactured by Merk Sharp & Dohme).

7.7. **Snuffles and Colds**

7.7.1 **Symptoms** Snuffles is a serious, very contagious disease. Affected rabbits have a thick, sticky, white nasal discharge. They sneeze a lot and have a high temperature. The fur on their legs become matted. Snuffles may develop into haemorrhagic septicaemia (see Section 7.8) or pneumonia (see Section 7.9). Sometimes affected rabbits develop abscesses. Snuffles must not be confused with colds or temporary irritations (caused by smoke or dust in the air for example) A rabbit with a cold or a temporary irritation with sneeze and have a thin, clear, runny nasal discharge. It will usually not look ill.

7.7.2 **Cause** Snuffles is caused by bacteria called Pasteurella. These bacteria can also cause several other diseases such as pneumonia, haemorrhagic septicaemia, genital infections, conjunctivitis, middle ear infection and abscesses. If a rabbit has a lot of resistance to disease (see Section 7.4) it will probably not be as ill as a rabbit with low resistance. So poor nutrition, and bad housing, which lower the resistance to disease, will make a rabbit more likely to get Snuffles. Cols can also be caused by Pasteurella.

7.7.3 **Prevention** Of the points in Section 7.3, proper ventilation is the most important to avoid snuffles and other respiratory diseases. Rabbits have very sensitive noses so it is essential to keep the air fresh and clean.

7.7.4 **Treatment** As in Section 7.5, and:

(a) Improve the ventilation.
(b) Drugs used for treatment include:

(i) Penicillin
or (ii) Sulphaquinoxilone in food (225g/ton) or
(iii) Furazolidone in food (50g/ton)

7.8. **Haemorrhagic Septicemia**

7.8.1 **Symptoms** This is a very serious disease, and rabbits will often be found having seemed perfectly healthy the day before. If they do show symptoms, they look ill and have very fast noisy breathing. They have a high temperature.

At post mortem (see Section 7.5.7), there will be clear yellow liquid in the chest, and the lungs will have some haemorrhages.

7.8.2. **Cause** This disease is caused by Pasteurella. Rabbits with low resistance to disease, poor housing or poor feeding are more likely to get it.

7.8.3 **Prevention** General good management, especially ventilation, hygiene and feeding (see Section 7.3).

7.8.4 **Treatment** As in Section 7.5. Drugs used in treatment are the same as for Snuffles (see Section 7.7.4).

7.9 **Pneumonia**

7.9.1 **Symptoms** Rabbits with pneumonia sit huddled with heir heads held high and tilted backwards. They look ill. Often there is a watery or pus discharge from the nose and eyes. They make a great effort to breathe because breathing is so difficult. They stop eating and are dull and listless. Their temperature is high and their breathing is very fast and often noisy. Often, they die from pneumonia. At post mortem (see Section 7.5.7) the lungs will be congested and mottled.

7.9.2. **Cause** Pneumonia is often secondary to other diseases like colds and snuffles. It is caused by several bacteria, often Pasteurella. Conditions which will lower a rabbit's
resistance to pneumonia are: cold, wet, draughts, sudden change of temperature (climate), dirty air (smoke, dust, ammonia from manure) and overcrowding.

7.9.3 Prevention As in Section 7.3.

7.9.4 Treatment As for snuffles (section 7.7.4).

7.10 **Tuberculosis**

7.10.1 **Symptoms** Infected rabbits may die suddenly, or they may have diarrhea, become thin and weak and gradually stop eating. They often develop a cough and find breathing difficult. They will also die.

7.10.2 **Cause** Bacteria called *Yersinia pseudotuberculosis* cause Tuberculosis in rabbits. It is infectious to people and other animals and birds. Rabbits get the disease from food or water which has been contaminated by infected birds, animals or people.

7.10.3 **Treatment** There is no treatment. Affected animals must be slaughtered and burned. People and other animals can get the disease from rabbits, so wash everything thoroughly in disinfectant.

7.11 **Salmonellosis**

7.11.1 **Symptoms** Rabbits with salmonellosis are very ill, with a high temperature for a short time. Then they die. They may abort (give birth before 30 days pregnancy or have a vaginal discharge.

7.11.2 **Cause** Bacteria called *Salmonella* cause salmonellosis in rabbits. This disease is infectious to people and other animals. Rabbits get the disease from food or water which has been contaminated by infected birds, animals or people.

7.11.3 **Prevention** Prevent contamination of food and water.
7.11.4 **Treatment** There is no treatment. Affected animals must be slaughtered and burned. People and other animals can get the disease from rabbits so wash everything thoroughly in disinfectant.

7.12 **Myxomatosis**

7.12.1 **Symptoms** A rabbit with Myxomatosis has inflamed and swollen eyes, nose, mouth, anus, genitals (penis or vulva). Often there is a purulent discharge from the eyes and nose. Breathing becomes difficult, and the rabbit will gradually stop eating. Affected rabbits look ill with a rough coat. They often develop swellings on other parts of the body, particularly where they have been handled. They usually die in 10-12 days.

7.12.2. **Cause** A virus called a Myxoma virus which is spread to other rabbits by the rabbit fleas, sometimes by mosquitoes, and by direct contact between rabbits.

7.12.3 **Prevention** Rabbits can be vaccinated to prevent myxomatosis. Thoroughly clean out the hutch to make sure there are no fleas. Try to keep the rabbitry free of mosquitoes. Make sure there is no contact with wild rabbits which may either have the disease or have infected fleas on them.

7.12.4 **Treatment** There is no treatment. Slaughter and burn affected rabbits.

7.13 **Mastitis**

7.13.1 **Symptoms** Mastitis is an inflammation of the mammary glands (milk producing glands on the doe’s belly) of lactating does. It is a serious condition because the doe will not let her litter suckle, so they will probably die.

The mammary glands become swollen, painful and may change colour from pink to red to dark or purple. The doe goes off her food, gets a high temperature and looks ill. She will often drink a lot. She stops looking after her litter, and they become restless, hungry
and may die. The mammary glands may develop into abscesses which will burst and discharge pus. If the doe is not treated, she will die.

7.13.2 Cause Mastitis is usually caused by bacteria. The bacteria are passed from rabbit to rabbit in many ways but especially by dirt and flies. Dirty nest boxes or bedding can give a doe mastitis. If the mammary glands are bruised or injured in any way, they are much more likely to get mastitis.

7.13.3 Prevention Mastitis can be prevented by using clean bedding and clean nest boxes. Careful handling of does to make sure that the mammary glands are not injured or bruised will also help.

7.13.4 Treatment As in Section 7.5, and:

(a) Give the doe more fresh green food and less concentrates (pellets).

(b) Bathe the affected mammary glands with -
   (i) Clean warm salty water (1 teaspoonful of salt in 1/2 litre of clean warm water). or (ii) Warm clean water with a little antiseptic.

(c) Drugs used for treatment include
   (i) Penicillin
   (ii) Tetracycline's (Aureomlin soluble powder, in food and or water).

d) If the doe can not feed her litter, try to foster them if they are young enough (see Section 3.9). If they are too old to be fostered, try weaning them early.
7.14 Injuries and Abscesses

7.14.1 Symptoms Cuts and swellings are the commonest symptoms of injuries. An abscess will start as a small swelling which will gradually get bigger. Sometimes they burst, discharging a lot of pus which smells disgusting.

7.14.1 Causes When rabbits fight they are likely to injure each other with bites and scratches. Physical injury may also result from badly constructed hutches in which the rabbits may cut themselves on protruding nails and sharp pieces of wood or wire.

Abscesses will sometimes develop for no apparent reason. They are usually caused by Pasteurella bacteria.

7.14.3 Prevention To prevent wounds from fighting, rabbits must not be allowed to fight. Overcrowding should be avoided, food and water should always be sufficient and uncastrated bucks should not be kept together for too long after weaning. Make sure there is nothing sharp in the hutches. It is difficult to prevent abscesses, but the points in Section 7.3. will help to reduce the chance of getting abscesses.

7.14.4 Treatment Small cuts and scratches should be bathed four times daily in warm clean salty water (1 teaspoonful of salt in 1/2 litre clean water) or dilute antiseptic solution, and covered with antiseptic powder.

It is important to keep flies away, because they will be attracted to the smell of a wound (cut or scratch or other injury). The flies will lay eggs in the wound, which will quickly hatch out into maggots. These maggots will eat into the rabbit and cause much pain, irritation and then death. Use a fly repellent to prevent this from happening.

Any cuts more than 4cms long should be examined by a veterinarian or an experienced rabbit keeper.

Abscesses need to be opened so that the pus can be drained out. An experienced rabbit keeper or veterinarian should be called to do this. Treat the opened abscess in the same way as an injury.
Drugs which may be useful for treating cuts and abscesses are:

(i) Penicillin or Streptomycin 1/2 gram applied to the wound or abscess. or
(ii) Sulphaquinoxilone in food (225g/ton). or
(iii) Furazolidone in food (50g/ton).

7.15 Internal Parasites

7.15.1 Symptoms Serious infestations of internal parasites in rabbits are rare. A rabbit which is infected will usually have diarrhea, weight loss and a dull, harsh coat.

7.15.2 Cause There are several internal parasites which can affect rabbits. The most important are roundworms and tapeworm cysts.

a) Roundworms These live in the intestines of the rabbit. They produce tiny eggs which are passed out of the rabbit in its droppings. These eggs are easily found if a sample of droppings is sent to a laboratory for examination. Roundworms are easily spread from one rabbit to another by contamination of feed, bedding, hutches and equipment.

b) Tapeworm cysts These develop in the rabbit's flesh. If a rabbit eats the egg of a dog or cat tapeworm, it will form a cyst in its flesh. If a dog or a cat eats this infected flesh, the cyst will develop into a tapeworm in the dog or cat's intestines. Often rabbits can have these cysts without any symptoms.

7.15.3 Prevention General hygiene and good management as discussed in Section 7.3. will minimise the risk of getting internal parasites.

Do not feed the flesh of rabbits infested with tapeworm cysts to dogs or cats. Prevent contamination of feeders, drinkers, bedding and hutches by dogs and cats.
7.15.4 **Treatment** In addition to Section 7.5:

a) Roundworms: a single dose of Thrabendazole by mouth, using 100mg/kg.
b) Tapeworm cysts: no treatment.

7.16 **External Parasites (mites, ticks, lice, flies, etc)**

7.16.1 **Symptoms** External parasites can cause mange and ear canker. They irritate the rabbit's skin, so the rabbit scratches and licks a lot and is generally restless. It may shake its head if the head or ears are involved (as in ear canker). The fur in the affected area usually drops out and the skin becomes flaky, sometimes crusty and often red and sore.

Flies are attracted to dirt and bad smells. A rabbit with diarrhea, sores or cuts attracts flies which lay eggs in the affected areas. The maggots which hatch out of these eggs eat the flesh of the rabbit. This causes much distress and irritation to the rabbit. One close examination an area of wet, inflamed skin will be found surrounding the original wound. The maggots are usually visible burrowing in the flesh. The rabbit becomes very ill and will die unless it is treated early. Fleas and mosquitoes carry mysomatosis so the symptoms of this disease may also be seen.

7.16.2 **Cause** There are several external parasites which can affect rabbits. The most important are mites, fleas, lice, ticks, mosquitoes and flies. Most external parasites are easily passed from one rabbit to another either by direct contact with an affected rabbit or by contamination of the hutch, bedding, feed or equipment.

7.16.3 **Prevention** General hygiene and good management as discussed in Section 7.3. will minimise the risk of getting external parasites. Regular removal of manure and the use of a fly spray will also help.

7.16.4 **Treatment** The aim of treatment is to kill the parasites on the rabbits, its hutch and equipment, and to treat any sores on the rabbit's skin. Chemicals are used to kill these parasites. They are applied as a dust, a spray or a bath. Local livestock experts
should be asked to give advice on what chemicals are suitable and how they should be applied. Any sores should be treated as described for injuries in Section 7.14. The hutch should also be thoroughly cleaned, disinfected and treated with a chemical to kill the parasites.

7.17 Poisoning

7.17.1 Symptoms There are many different symptoms according to the type of poison. Sometimes the rabbit will become excited or unsteady in its movements which is followed by dullness, collapse and unconsciousness. There may be convulsions (sudden movements) and eventual death. Other poisons may cause great pain.

7.17.2 Cause There are two main causes - poisonous plants and chemicals.

In all part of the world there are plants which will cause sickness and death if eaten. Rabbits, which eat the food which the rabbit keeper has collected for them, can easily suffer in this way.

A more modern danger comes from pesticides and rat poisons. These chemicals can sometimes contaminate the bedding, food or water of the rabbits.

7.17.3 Prevention The rabbit keeper must learn which plants are poisonous and make sure they are not fed to the rabbits. To prevent poisoning by chemicals, all pesticides, rat poisons and other chemicals should be kept in a separate store. All containers should be carefully disposed of after use by burying or burning. Rat poison should not be placed where rabbits can reach it.

7.14.4 Treatment Rabbits showing signs of poisoning need treating immediately but it is often unsuccessful.

a) Try to encourage the rabbit to drink a lot of water. This will dilute the poison. If possible, the water should be warm.
b) Strong black tea or coffee should also be given. This helps to counteract some of the effects of some poisons.

c) If the rabbit is in pain, it is kinder to kill it quickly.
**REVISION QUESTIONS**

1. Give three features of a healthy rabbit.
2. Give two ways of preventing disease.
3. What action should you take on the outbreak of disease?
4. What causes Coccidiosis and how is it spread?
5. What causes Snuffles and how can it be prevented?
6. What are the differences between Snuffles and Pneumonia?
7. Describe the symptoms of mastitis
8. Why is it important to keep flies away from rabbits?
9. How will an infection of external parasites be recognised?

**STUDY PROJECTS**

1. Talk to a government livestock officer or veterinarian about suitable medicines for rabbits. In this chapter we have mentioned several drugs: antiseptic powder, fly repellents; dusts, sprays and baths against external parasites; worm medicine.

   The rabbit keeper will need to know
   (i) The names of available medicines
   (ii) How much to use
   (iii) How to give the medicine to the rabbit
   (iv) How much the medicines cost

2. Talk to rabbit keepers about poisonous plants. Make a list of the poisonous plants which grow in your area, noting what kind of land they grow on and the season in which they are most dangerous. Find out if there are any treatments for poisoning.

3. Talk to experienced rabbit keepers and find out how they safely dispose of empty chemical containers.
CHAPTER 8

THE PREPARATION OF RABBIT PRODUCTS

8.1. Introduction

Most rabbit keeping in the tropics is for the production of meat. Skins and manure are by-products. Many rabbit products are wasted because they are not properly treated. If the rabbit keeper knows what to do with these products, he will find rabbit keeping much more profitable.

In this chapter we will look at:

(a) **Slaughter**: when and how rabbits are slaughtered (8.2).
(b) **Skinning**: how to remove the skin (8.3).
(c) **The Carcase**: how to prepare and store the carcass, (the rabbit's body after skinning) (8.4).
(d) **Skins**: Methods of treatment for the skins (8.5).
(e) **Manure**: How to collect and store manure (8.6).

8.2. **Slaughter** The usual time to kill rabbits for meat in Europe and America is when they reach a weight of around 2.2 kg which they do at between two and three months of age.

In the tropics there is a greater variation. Rabbits may be killed at live weights of 1.2. to 3.0 kg, at ages between two and six months.
A rabbit should not be frightened at the time of slaughter. Apart from humane reasons, the meat may be damaged if the animal is frightened at this time. Killing may be carried out in two ways - 8.2.1 **By administering a sharp blow** to the back of the head with a stick or iron bar.

This may be done with the rabbit placed on a table (Fig. 8.2. 1a) or by holding it by the hind legs with its head down (fig.8.2.1).

Immediately after slaughter the rabbit should be hung by the back legs and the throat cut to allow the blood to drain out.
8.3 Steps in skinning a rabbit
8.3. **Skinning**  The knife used to skin a rabbit must be very sharp and clean. Skinning should be carried out in the following manner:

(a) Cut off the tail.
(b) Make a circular cut in the skin around the neck.
(c) Join these two cuts by making a long cut along the inside of one thigh, pass the base of the tail and down the other thigh.
(d) Pull the skin off down each leg and over the whole body as far as the neck.
(e) Make a cut around the neck on the inside of the skin, and around each front leg.
(f) Pull the skin over the neck and clear of the body, taking care not to get blood on it.
(g) Place the skin on a stretcher and hang it up to dry.

8.4. **Preparation of the carcass.**

(a) Make a cut along the centreline of the belly from the anus to the ribs, taking care not to cut the intestines.
(b) Remove the intestines and bladder but leave the heart, liver and kidneys. The gall bladder should be carefully separated from the liver and removed without bursting. It contains bile, a green liquid with a bitter taste, which must not be allowed to contaminate the meat. Care should also be taken to remove that part of the intestines which runs through the pelvic bones. To make this easier, the pelvis may be broken and the bones separated.
(c) Remove the head and the four feet.
(d) The carcass may be left whole or cut into joints (See Fig. 8.4). This will depend on the market. In most cases the whole carcass is preferred though there may be some local demand for joints.
(e) Remove pieces of fur, dirt and blood stains from the carcass using a clean, damp cloth and rinse the carcass quickly in clean cold water.
(f) Store in a cool place (with no flies) overnight.

Further storage may take place for a few days in a refrigerator. Storage for longer period if possible in a freezer.
8.4. How to cut up a rabbit
8.5. **Treatment of the skins**

If the main reason for keeping the rabbits is for meat, then the skins are a by-product. They are unlikely to be of high quality, especially those from young rabbits under six months of age. There may, or may not, be a market for them locally. The breeder may wish to keep a few for use in the home. If the skins are to be sold or used, the first step is to dry or cure them, then to treat them chemically.

8.5.1. **Curing** Drying the skin is known as 'curing' and it is carried out as soon as possible after skinning the animal. The skin is slipped over a wire stretcher with the fur to the inside (see Fig. 8.5.1). It is then hung up to dry in a suitable place, shaded from the sun and protected from pests. Any pieces of fat should be scraped off with a knife. The curing should only take a few days.

8.5.2 **Tanning** By this process the skins are transformed into leather for a variety of uses. It is normally done in a commercial tannery, but sometimes the rabbit breeder may wish to tan a few skins for his own use. The following procedure is suitable for home tanning:

(a) Remove the skin from the wire stretcher, slit it down the middle and soak it in clean, cool water, changing the water several times.

(b) When the skin is soft, place it on a board (fur side down) and remove all the fresh and fat by scraping with a knife.

(c) Rinse thoroughly in lukewarm, soapy water to which has been added 5 - 10gm soda or borax per litre. Squeeze out the water but do not wring.

(d) Prepare the following chemical solutions:
   (i) Dissolve 0.5kg ammonium aluminum sulphate (ammonium alum) OR potassium aluminum sulphate (potash alum) in 5 litres of water.
   (ii) Mix 150 gm washing soda (crystallized sodium carbonate) and 300 gm common salt (sodium chloride) and dissolve in 3 litres of water.
8.5. Curing rabbit skins

Skins Drying

Types of Stretchers
(e) Pour solution (ii) into solution (i) and stir thoroughly.

(f) Mix the combined solution as prepared above with sufficient flour to make a thin paste. First mix the flour with a little water to prevent lumps forming.

(g) Nail out the clean and softened skin on a board, fur side down.

(h) Coat the flesh side of the skin with a layer of the tanning paste and lay a piece of paper lightly on top for protection.

(i) The following day scrape off the layer of paste and put on another layer. If the skin is thick (e.g. from a mature buck), a third coat may be necessary. Leave the last coat on for several days.

(j) Scrape off the last coat of paste and rinse the skin as in (c).

(k) While the skin is drying, work it thoroughly with the hands over a board, pulling it in all directions. This is most important in order to make the skin soft and it must be done before the skin is dry.

(l) Finally work the skin in warm, dry, hardwood sawdust to clean it and give a shine to the fur.

8.6. **Rabbit Manure**

Manure from the rabbitry has considerable value as a fertiliser and it should therefore not be wasted. There are several ways of dealing with it.

8.6.1 **Self-cleaning wire cages** No bedding. The droppings fall through the floor of the hutch.
(a) The droppings fall on to a concrete floor and are collected. In this state they are known as clear manure (free from any other material such as bedding). The clear manure may be used straight away on the garden or it may be stored in various ways:

(i) **Composting** A layer of vegetable matter consisting of vegetable leaves, weeds, grass cutting, hedge trimmings, branches ...etc, is spread on the ground to a depth of 10 - 20 cm. This is covered with a layer of rabbit manure of similar thickness, and alternative layers of vegetable matter and manure are added as they become available. The top of the heap is kept tramped to exclude air, and enough water is added to keep it moist. When the heap has reached a convenient height, a layer of soil may be added on top. This helps to conserve nitrogen and to control smell.

(ii) **Dry manure** The fresh droppings are spread out in a thin layer (5-10cm) on a concrete surface in the sun. When the manure has dried so that the moisture content is down to between 12-15%, it is collected in sacks or boxes. In this form there is often a market for it.

(b) **The droppings fall on to an earth floor**

(i) Straw, grass or wood shavings are spread on the floor to soak up the droppings and urine. At least once per week this removed and put in a heap outside to make compost.

8.6.2. **Hutches with solid floors** Enough bedding (straw, dry grass or wood shavings) should be provided to soak up the urine and collect the droppings. This should be removed to the compost heap every day and replaced with fresh material.
REVISION QUESTIONS

1. Describe two methods of slaughtering a rabbit.
2. At what ages and weights are rabbits usually slaughtered?
3. Describe how to skin a rabbit.
4. How should you prepare the carcass?
5. What should you do with the skins?
6. How can you store rabbit meat and for how long?
7. Describe two ways of dealing with rabbit manure

STUDY PROJECTS

1. Arrange to observe an experienced rabbit keeper slaughtering rabbits. It is important for you to be able to do this quickly to avoid causing the rabbit any pain.

2. Arrange to observe an experienced person skinning slaughtered rabbits and preparing their carcasses.

3. Visit several rabbitries and find out how they deal with rabbit manure.
Examples of general rabbit/rations for home mixing

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<th>Ingredients</th>
<th>High energy, high protein, low fibre rations to be fed with good hay</th>
<th>A kg</th>
<th>B kg</th>
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<tr>
<td>Barley (ground)</td>
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<td>340</td>
<td>290</td>
</tr>
<tr>
<td>Oats (ground)</td>
<td></td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>Maize (ground)</td>
<td></td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Soya bean meal (extracted)</td>
<td></td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>meat and bone meal</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(50 per cent protein)</td>
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<td>175</td>
<td>100</td>
</tr>
<tr>
<td>Wheat offal's</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Lucerne meal</td>
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</tr>
<tr>
<td>15 per cent protein</td>
<td></td>
<td>50</td>
<td>--</td>
</tr>
<tr>
<td>22 per cent fibre</td>
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</tr>
<tr>
<td>Grass meal</td>
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<td>18</td>
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</tr>
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<td>18 per cent protein</td>
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<td>17 per cent fibre</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td>1 tonne</td>
<td>1 tonne</td>
</tr>
</tbody>
</table>

1 kg = 2.2 lb                      1 ton = 1000 kg = 2204.6 lb
APPENDIX 2

CONVERSION DATA

Weight ___________ 1 kg = 2.2 lb  kg = kilogram
1 lb = 0.45 kg  lb = pound

Volume ___________ 1 litre = 1.76 pints

Distance __________ 1 metre = 3.3 feet
1 foot = 304 mm

APPENDIX 3 Nutritional value of Concentrate rations

For adult rabbits:
Crude protein (min) - 18.0%
Crude fat (min) - 3.0%
Crude fibre (max) - 20.0%
Ash (max) - 10.0%

For young rabbits (creep feed up to weaning):
Crude protein (min) - 22.0%
Crude fat (min) - 5.0%
Crude fibre (max) - 12.0%
Ash (max) - 8.0%
APPENDIX 4

FEEDING CONCENTRATE

Amount to feed in Grammes per day

SIZE OF RABBIT

<table>
<thead>
<tr>
<th>CLASS OF RABBIT</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young breeding stock (8 weeks old - mating)</td>
<td>60 - 80</td>
<td>80 - 100</td>
<td>100 - 120</td>
</tr>
<tr>
<td>Older non-pregnant does and breeding bucks</td>
<td>80 - 100</td>
<td>100 - 120</td>
<td>120 - 140</td>
</tr>
<tr>
<td>Pregnant does (1st 3 weeks of pregnancy)</td>
<td>100 - 120</td>
<td>140 - 160</td>
<td>160 - 180</td>
</tr>
<tr>
<td>Pregnant does (last 10 days) Lactating does with litters Young rabbits (weaning to slaughter)</td>
<td>AD LIB</td>
<td>AD LIB</td>
<td>AD LIB</td>
</tr>
</tbody>
</table>

AD LIB = unrestricted feeding