



Best Practices for Managing Awassi Sheep

# Health Care Guide

7

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**7-Health Care Guide**

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## Foreword

This booklet is part of a ten-part series of technical guidelines describing 'Best practices for managing Awassi sheep' – the dominant sheep breed in several countries across the Middle East. The series is targeted at sheep farmers and milk processors, and provides practical, easy-to-follow advice on managing Awassi sheep under dryland conditions.

Efficient husbandry, feeding and milk processing are crucial for the management of Awassi sheep in dry areas; but many small-scale producers are unfamiliar with simple productivity-enhancing practices. This series aims to fill this information gap, enabling farmers to increase their income from livestock while using resources more efficiently and sustainably.

The series draws on the practical experience of researchers, as well as the extensive literature, to capture scientific and local knowledge in an easily accessible format in the local language. The bulletins are organized in accordance with the sheep management calendar and describe the management of Awassi ewes during important physiological stages during the year. Supplementary guidelines provide additional information on each stage.

These booklets were produced as part of an IFAD-ICARDA project, Scaling up best practices for managing Awassi dairy sheep to small-scale sheep farmers in West Asia, implemented in Syria and Lebanon in collaboration with IFAD development projects in both countries.

We would like to thank all those involved in the preparation of these guidelines and also for IFAD's financial support to this important project. We expect these booklets to be useful for sheep farmers, milk processors, extension staff, as well students of agricultural development and knowledge transfer.



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## Introduction

Prevention is better than providing a cure, and when disease occurs, quick treatment is the best means for limiting losses and ensuring treatment is more efficient



Sheep flocks constitute an important source of wealth, which should be preserved and protected against diseases that cause considerable economic losses as a result of animals' death and reduced productivity, and the costs associated with treatment.

This booklet provides sheep farmers with advice and guidelines to prevent diseases and limit their spread.

The periodic inspection of the herd and prompt treatment of diseased sheep limits the spread of the diseases, and increases the chances for recovery.

Farmers are advised to record all health events: disease cases, vaccination schedules, medicines used, and deaths. This information can be useful in assessing the health status of herds and improving health programs.

## Health Preventive Procedures

The best way to limit diseases is to prevent them

The following details provide information on the most important procedures that should be taken to preserve the health of sheep:

- Proper nutrition and gradual change from one type of diet to another. Respect a transition period of two weeks. Do not allow animals to graze on fields that have been sprayed with pesticides before their harmful effects have disappeared. Clean fresh water should be provided;
  - Use suitable barns with sufficient space, good hygiene and ventilation. Remove waste (dung and bedding) away from the barns, and minimize the presence of strangers in sheep barns, especially during the lambing season;
  - Protect the farm from wild animals, birds, predators and rodents that may attack the animals and transmit diseases. Dogs accompanying the flock should be periodically treated against internal parasites to prevent the transmission of several diseases such as coenurosis, echinococcosis, and rabies;
  - Isolate sick animals from the rest of the flock and dispose of their offal by burning or burying it deep within the ground, investigate the causes of disease and mortality with the help of a veterinarian, and dispose of any dead animals without delay by burning or burying them;
  - Do not allow different flocks to mix, and do not lend or borrow rams, especially during the breeding season, to reduce the transmission of diseases, and avoid sheep mixing with other species;
  - Periodically, examine workers on the farm to ensure their safety, as many diseases can be transmitted from sheep to humans; and
  - Cull animals that are suffering from chronic diseases, as well as those that are aged and emaciated as it is not beneficial to keep them.



## Buying Sheep

Often diseases are transmitted when new animals are annexed to the flock



The following should be considered when buying sheep:

- Buy from a trusted source, preferably purchasing directly from a farm;
- Enquire about vaccines and medicines that have been administered to the animal;
- Enquire about the feed, feeding method and quantities provided;
- Transport the animals in a clean and disinfected vehicle with the least minimum stress;
- Use protected vans and avoid prolonged exposure to sun or to wind;
- Purchased animals should be kept isolated from the flock for 3 to 4 weeks, and they should be monitored and provided with appropriate health care. Laboratory tests should be conducted, and only when animals are confirmed as healthy should they be annexed to a flock;
- Animals should be injected or drenched with antiparasitic drugs, targeting both endoparasites and ectoparasites; and
- Special mangers and water troughs should be provided, especially to sheep in quarantine. These animals should be served after feeding and watering the flock, and care should be taken to disinfect hands before entering and leaving a quarantined area.



## Identification of Sick Animals

Monitoring a flock and detecting sick animals early is a critical factor to ensure treatment is successful and disease transmission is limited

### Identification of sick sheep

Sickness can be inferred by monitoring sheep behavior when they are grazing, drinking water, and moving. Evidence of disease occurrence includes:



- Gradual weight loss;
- Loss of appetite or refusing to eat feed;
- Teeth chattering;
- Appearance of ocular or nasal secretions;
- Coughing and breathing with difficulty, or any other abnormal respiratory rhythm;
- Diarrhea, change in the nature of feces, or the presence of blood in stools;
- Downward prolapse of the head, and arching of the back;
- Stumbling animals or animals with difficulties in walking;
- Leg convulsions;
- Inability to stand;
- Limping;
- Feet lesions, and lameness; and
- Wool loss, wool aspect modification.

Separate animals from the flock when they have one or more of the above symptoms.



Disease can also be detected by monitoring any divergence from normal body temperatures, respiration rates, or heart pulses.

#### Natural indicators of sound sheep

- Body temperature: between 37 and 39 °C, although temperatures can rise if the animals have grazed for a long period during a hot sunny day;
- Respiratory rate: between 15 and 20 times per minute; and
- Heart pulse rate: 70 beats per minute.

*These values are higher in young animals.*



#### What to do when you suspect the existence of a disease case?

- Isolate the sick animal;
- Consult, as soon as possible, a veterinarian to diagnose the disease and prescribe appropriate control measures; and
- Follow the veterinarian's instructions.

## Veterinary Drugs

Misuse of drugs may harm the treated animal, endanger human health, and cause financial losses for farmers.

### Purchase of drugs

The following rules should be considered when buying drugs:

- Buy from reliable sources (pharmacy);
- Commit to buying the drugs prescribed by a veterinarian and not an equivalent drug;
- Ensure validity (date of expiration);
- Read the enclosed leaflet associated with the drug for instructions on how to use it and the conditions of conservation; and
- Comply with the specific dose and follow the instructions of the veterinarian.

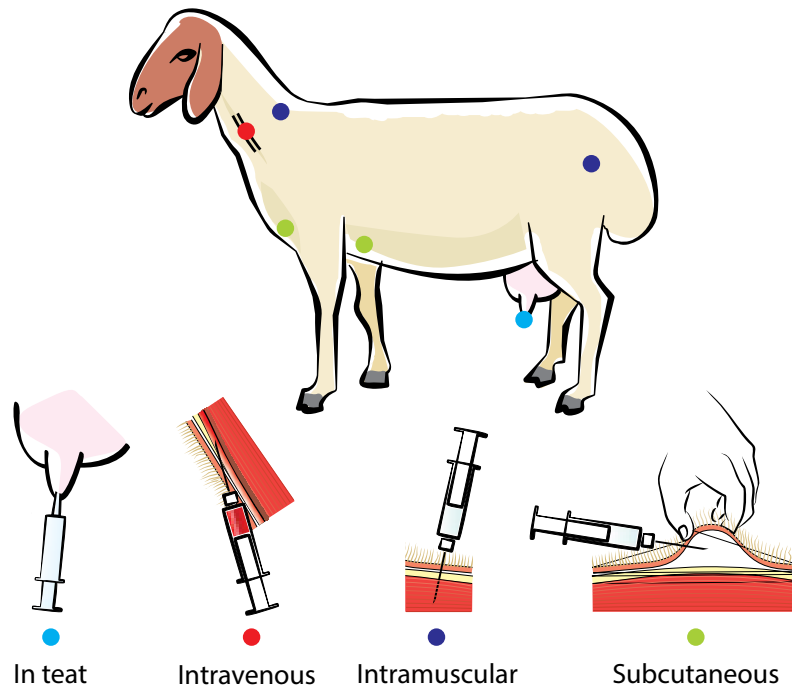


### Withdrawal period

The withdrawal period is necessary for the animal to excrete or to catabolize drug residue in meat or milk. It can be determined from instructions on the drug or vaccine containers. The period varies according to the drug or product (milk or meat).

Generally, a veterinarian should be consulted when choosing drugs, as he/she does not allow the use of certain drugs for particular circumstances (for example during pregnancy, or when milking ewes or lambs).

## Methods of Giving Veterinary Drugs



### Injection

Injection is the most important method for applying drugs, and it has many types:

- Subcutaneous (under the skin): the injection can be done in several body regions (such as the axilla, above the ribs, the neck, and behind the shoulder);
- Intramuscular: applied deep within large muscles (such as thighs, the neck and shoulders);
- Intravenous: applied in the jugular vein along the neck (this method needs the help of a veterinary technician);
- Intraperitoneal: applied in the abdominal cavity; and
- Inside the udder: applied through the openings of udder teats.

When the drug is given by injection, the following rules should be considered:

- Ensure the validity of the drug and withdrawal period and ensure the instructions are understood;
- Hold the animal well (restricted), prior to undertaking the treatment;
- Use sterile syringes and needles appropriate for the age and the size of the treated animal and the type of drug used. It is preferable to use disposable syringes and needles to reduce the risk of contamination;
- Do not withdraw the drug from the original packaging in more than the specified quantity;
- Do not perform the injection in a contaminated or moist spot of the animal's body, and always clean the area with alcohol and medical cotton before and after an injection;
- When intramuscular injection is performed, make sure the needle is stable within the muscle, by withdrawing the syringe compressor, and also ensure the needle does not enter the bloodstream;
- Ensure the needle is in the muscle and not in other tissues;
- When subcutaneous injection is used in the area where the skin is loose (under the arm), pleat the skin, and inject under the fold;
- Inject the drug slowly;
- Dispose of any used needles and syringes; and
- Avoid badly-performed injections which can cause abscesses and infections, cause muscle alterations (thereby reducing an animal's market value), and in some cases, result in severe diseases.



## Drenching

This method is used to apply liquid drugs. It is applied by using a special syringe, equipped with a long metal or plastic head that is introduced sideways in the mouth, and in the distance between incisors and molars, and the upper part of the tongue.

When this method is applied, the following recommendations should be observed:

- Determine the correct dose: an overdose can be toxic and an underdose can be ineffective. Calibrate the syringe and treat the animals in homogenous weight groups;
- Ensure the suitability of the drug to be used for pregnant or milking ewes and lambs;
- Accommodate the animal by holding the head well; and
- Ensure the drug has been swallowed before withdrawing the syringe out of the animal's mouth.



## Pills and capsules

Pills or capsules are given by a special tool called a pilling device. A pill or a capsule is placed at the top of the device, it is entered in the mouth from the top of the tongue's base and the capsule is pushed inside.

When using pills or capsules, the following recommendations should be observed:

- Accommodate the animal properly;
- Use an appropriate pilling device and follow the manufacturer's instructions;
- Enter the pilling device, holding the drug carefully in the front of the mouth and over the tongue, but taking care not to enter it near the larynx; and
- After pushing the capsule towards the pharynx, the pilling device should be pulled out carefully, ensuring the animal has swallowed the drug before it is released.



### Mixing with drinking water

Some drugs are administered after solubilizing them in drinking water. This is practical for group treatment when several animals in a flock require treatment.

The following recommendations should be considered:

- Cleanliness of the water and water troughs;
- Adequacy of water troughs so that all animals can take the drug at the same time and without contention;
- Change the water daily before adding the drug;
- Ensure solubility of the drugs if they are in powder form; and
- Consider the fact that if the animals are ill, the quantity of drinking water can be increased or decreased.



### Mixing with feed

Given the difficulty of controlling the quantity consumed by each animal when mixing drug substances with feed, the following should be considered:

- Mix the drugs well; and
- Ensure there is an adequate number of mangers for all animals.

### Through the vagina

Gynaecological suppositories are given (through the vagina) after dystocia, or in the case of retained placenta or uterine infections.

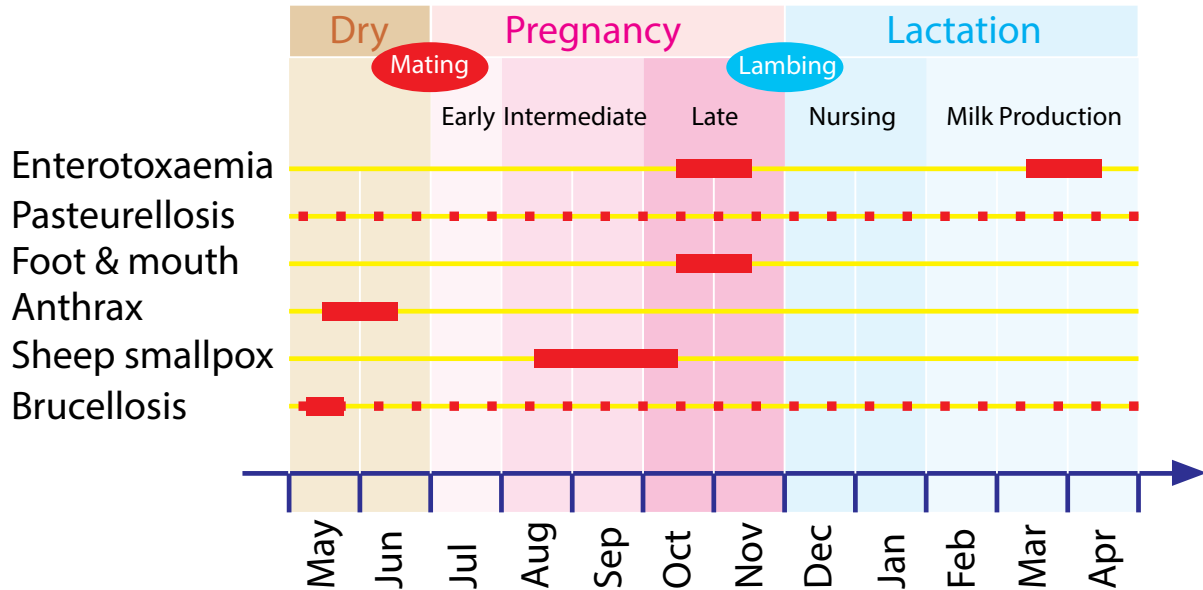
The following recommendation should be considered:

- When severe infections are transmitted through the vaginal secretions, wear gloves.



## Schedule of Preventive Vaccinations

Timing should be respected to ensure the effectiveness of vaccinations



In many countries, health services are provided through veterinary units, according to national programs of an Animal Health Authority.

The health program varies from one context (risk, region, system management, etc.) to another. In addition to the specific periods of preventive actions, preventive and curative procedures must be undertaken whenever there is a disease outbreak. For some diseases, like foot and mouth disease, vaccination should target all the susceptible species present. In some other cases, like Pasteurellosis and anthrax, vaccination will depend upon the risk factors. For example, there is no need to vaccinate if the region has no history of anthrax or vaccinate sedentary healthy animals against pasteurellosis.



The control of parasites is necessary to ensure vaccinations are effective, animals become more productive, they become less susceptible to other diseases, and they do not transmit disease to either humans or other animals.

When doing preventative immunizations, the following recommendations should be considered:

- Provide animals with a well-balanced diet (in terms of quantity and quality);
- Respect the control program;
- Respect the instructions of the vaccine manufacturer;
- Avoid vaccination if the animals are stressed (for instance during extreme climatic conditions, or when the animals are diseased or underfed);
- Consult the Animal Health Center to amend the vaccination program, if lambing occurs throughout the year;
- Never touch a part of the needle that enters the animal's body;
- Use a new needle for each 25 animals, or after stopping the vaccination for a while;



- Use a sterile adapted needle;
- Do not vaccinate while animals are wet, as the needle can be contaminated;
- When injecting the vaccine subcutaneously, do not let the needle penetrate the muscles or the vessels. Isolate the skin by lifting a fold and insert the needle parallel to the body and not at an angle with it to avoid deep penetration; and
- Dispose of excess vaccine and empty containers, keep them out of the children's reach, and never use them for other purposes as they contain toxic substances.

## Controlling Ectoparasites

Controlling ectoparasites is an urgent necessity since parasites negatively impact the health and productivity of sheep, and transmit diseases to animals and humans.



Sheep are infected with many external parasites such as lice, mites, mange, flies (which cause myiasis), and fleas.

Infection with ectoparasites varies from one herd to another. Its severity is affected by environmental factors (seasons), the nature of the area where sheep are present (wet or dry), and the methodology of breeding the herd (intensive or open).

Parasites are controlled in a number of ways, such as spraying, dipping, drenching or injecting antiparasitic drugs.

It is advisable to undertake control efforts in late fall to get rid of lice and scabies which increase in winter, and late in the spring two weeks after shearing to get rid of ticks, scabies, and flies.

It is advisable to clean and spray barns to prevent the recurrence of infection.

When controlling ectoparasites, the following should be considered:

- Consult the Animal Health Directorate to determine the proper preparation and method of control. Repeating the treatment may be needed to reach the best results;
- Reduce stress as much as possible;
- Do not treat ectoparasites by external solutions during rainy days, (treatment should be repeated if sheep have been exposed to rain);
- Ensure the safety of workers by wearing protective clothing, glasses, gloves, and masks;
- Dispose of pesticide waste away from waterways;
- Destroy any empty containers (in order not to be used again);
- Avoid treating severely ill animals, pregnant ewes and young lambs. These categories need special health care; and
- When using external solutions, treat the animals in the evening (to avoid high temperatures) after providing them a sufficient quantity of water.



## Controlling Endoparasites

Sheep are infected with many internal parasites such as liver and gastro-intestinal worms, pulmonary worms, blood parasites, and brain parasites.

These parasites cause considerable damage, as they weaken resistance to diseases, reduce fertility and milk and meat revenues, and may even lead to death. Some of them can also cause important human diseases.

When controlling endoparasites, the following should be considered:



- Be committed to a preventive program, and consult the Department of Animal Health to determine the type of animal drugs and timing of control;
- Do not overdose or underdose anti-parasitic drugs and use molecules belonging to different drug families each year;
- Observe excellent hygiene in barns and pastures;
- Avoid over-populating barns and pastures; and
- Observe high levels of hygiene for food and water.



### Treatment methods

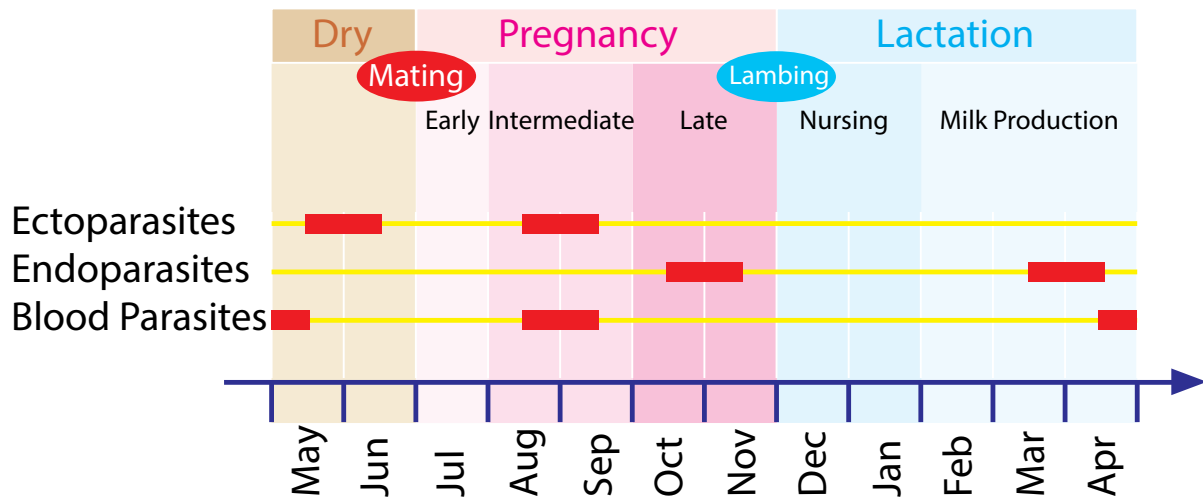
- Pills or capsules;
- Drenching; and
- Injections (subcutaneous or intramuscular).

### Treatment schedule

Dates of treatment vary from region to region and from year to year, but generally treatment of gastro-intestinal, pulmonary and hepatic parasites are performed during the months of March, April, and May. Blood parasites (*Babesia* and *Theileria*) are treated during the months of April and May, in conjunction with the control of ticks.

It is advisable to consult a veterinarian to determine the appropriate drugs and the suitable schedule.

## Schedule for Treating Parasites



## Health Care of Udder

### The udder

Mastitis is a common disease that affects milking ewes, and may lead to udder damage. The disease causes a decrease in milk production, incurs an increase in expenses, and may even lead to the culling and death of ewes and small lambs.

Udders should be monitored continuously, and its safety ensured, especially after lambing and at weaning.



To preserve the udder and avoid its infection, the following should be considered:

- Take care of ewes' nutrition and change rations gradually;
- Clean the udder before milking, and dip teats in a disinfectant solution after milking;
- People milking ewes should wash their hands before milking;
- Barns should be hygienic, and the ground should be dry and free of wires and protrusions that may hurt the udder;
- Avoid exposing milking ewes to extreme stress (heat and cold);
- Isolate ewes suffering from mastitis, manipulate them at the end, and wash hands after milking and treating them;
- Milk the ewes every 3 hours and discard the milk which is rich in pathogens;
- Treat them according to the veterinarian's instructions, and discard milk in a safe place (not in the animal pens);
- Cull ewes with a history of mastitis even if they have recovered as they have been exposed to infections and their milk yield will decrease during the next season; and
- Cull ewes with abnormalities in their udders.

## General Health Care

### Hooves

Sheep are exposed to hoof diseases (rot, necrosis, and abscesses), which hinder the ability of sheep to walk and graze, and thus lower their production.

Hooves should be checked periodically to ensure their safety, and infected hooves should be treated as quickly as possible, as they are difficult to recover when lesions worsen.

To reduce the incidence of hoof diseases, the following should be considered:

- Avoid rocky pastures as much as possible;
- Trim hooves whenever a need arises;
- Isolate and treat animals infected with hoof rot;
- Ensure barns are hygienic and floors remain dry;
- Periodically dip hooves in an antiseptic solution such as copper sulfate or formalin for 15 minutes. These two substances are very toxic and should be used with the correct level of dilution; and
- Use formalin in wet climates.

When treating or trimming the hooves, the following should be considered:

- Hold the animal safely by placing it in a wheelbarrow;
- Clean hooves by removing mud, dung and any small stones attached;
- Remove excess parts of the hoof gradually (cut small portions every time) by using a clean pair of sharp pliers or scissors; and
- Provide adequate treatments for abnormal hooves.







### Cutting horns

Some ram horns may grow abnormally towards the face or head, causing harm to the animal. The horns should be cut by a saw or metal wire, placing a fist at each end away from the base of the horn to avoid injury to the horn-nourishing artery.

### Castrating lambs

Lambs are castrated, in some areas, when they are one week old, in order to increase fattening returns.



The castration process of lambs is done by placing a rubber ring with a special device at the top of the scrotum, taking into account that both testicles are below the scrotum. As a result of pressing the rubber ring, the scrotum bag with testicles wilts and falls after two to three weeks. The use of a castration device – Brdazo - should be carried out by a veterinarian technician for older animals, which is a device that crushes the spermatic cord.

### Shearing wool

Sheep can suffer wounds during wool shearing, which should be treated quickly to avoid inflammation, insect parasitism, and tetanus. Wounds are treated by a liquid sterilizer with insect repellent.

When shearing the wool, the following should be considered:

- Shear the wool of animals vaccinated against tetanus (this vaccine is usually added with the enterotoxaemia vaccine);
- Use clean tools;
- Clean barns before the return of the sheep; and
- Avoid exposing the sheep to very hot or cold weather for several days after shearing.



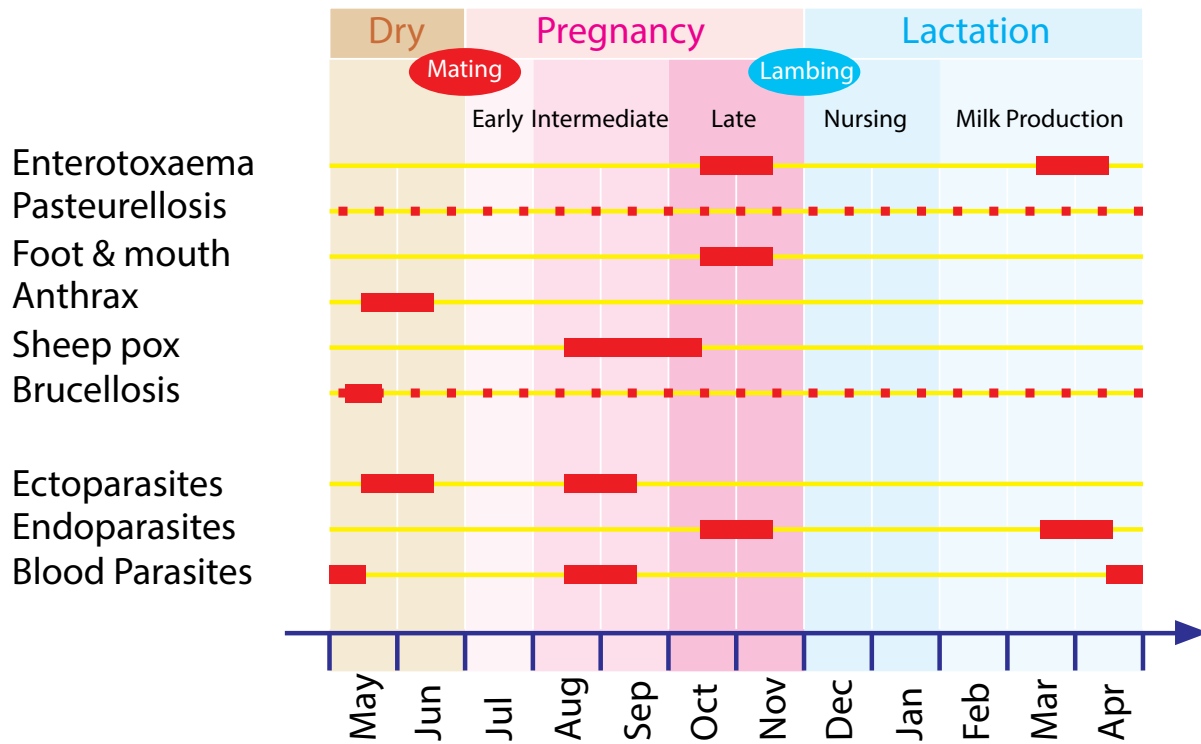
## Please Remember

Prevention is better than finding a cure and proper nutrition (quantity and quality) is critical to preserving the health of a herd.

- Consult a veterinarian and comply with his/her instructions to implement immunization programs;
- Record and schedule all vaccinations and anti-parasitic treatments, which are essential for improving the health status of flocks;
- Quarantine animals entering the flock and do not lend or borrow rams;
- Address health problems immediately when discovered;
- Isolate and treat diseased sheep and duly dispose of ewes' offal;
- Do not slaughter sick animals and consume their meat unless a veterinarian is consulted;
- Get rid of dead animals by burning or deeply burying them and their waste;
- Avoid giving raw sheep meat to animals (dogs and cats);
- Constantly monitor herds, investigate changes in behavior, isolate animals suspected to be sick, and have them examined by a veterinarian;
- Change clothes and wash hands with water and soap before and after handling animals.



## Schedule for Health Care



## Best Practices for Managing Awassi Sheep

- 1 Mating Period
- 2 Pregnancy
- 3 Lambing
- 4 Lactation Period
- 5 Milking and Milk Processing
- 6 Sheep Selection
- 7 Health Care Guide
- 8 Feed Reference Guide
- 9 Preparing Urea Treated Straw
- 10 Body Condition Scale
- 11 Lamb Fattening



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