Best Management Practices for Managing Awassi Sheep

Pregnancy period 2

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2- Pregnancy period

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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 in 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 sheep management calendar,and describe the management of Awassi ewes during important physiological stages over 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 will be useful to sheep farmers, milk processors, extension staff, as well students of agricultural development and knowledge transfer.

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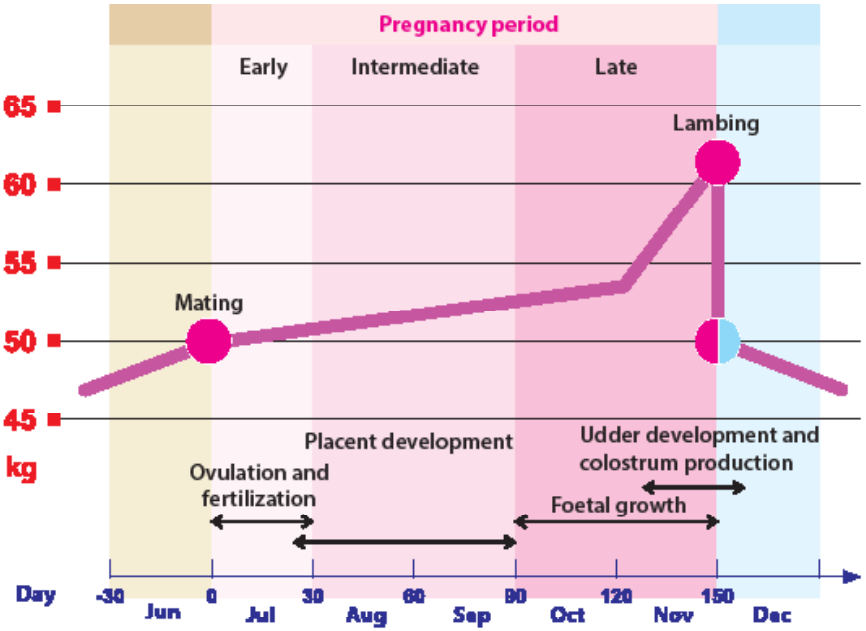
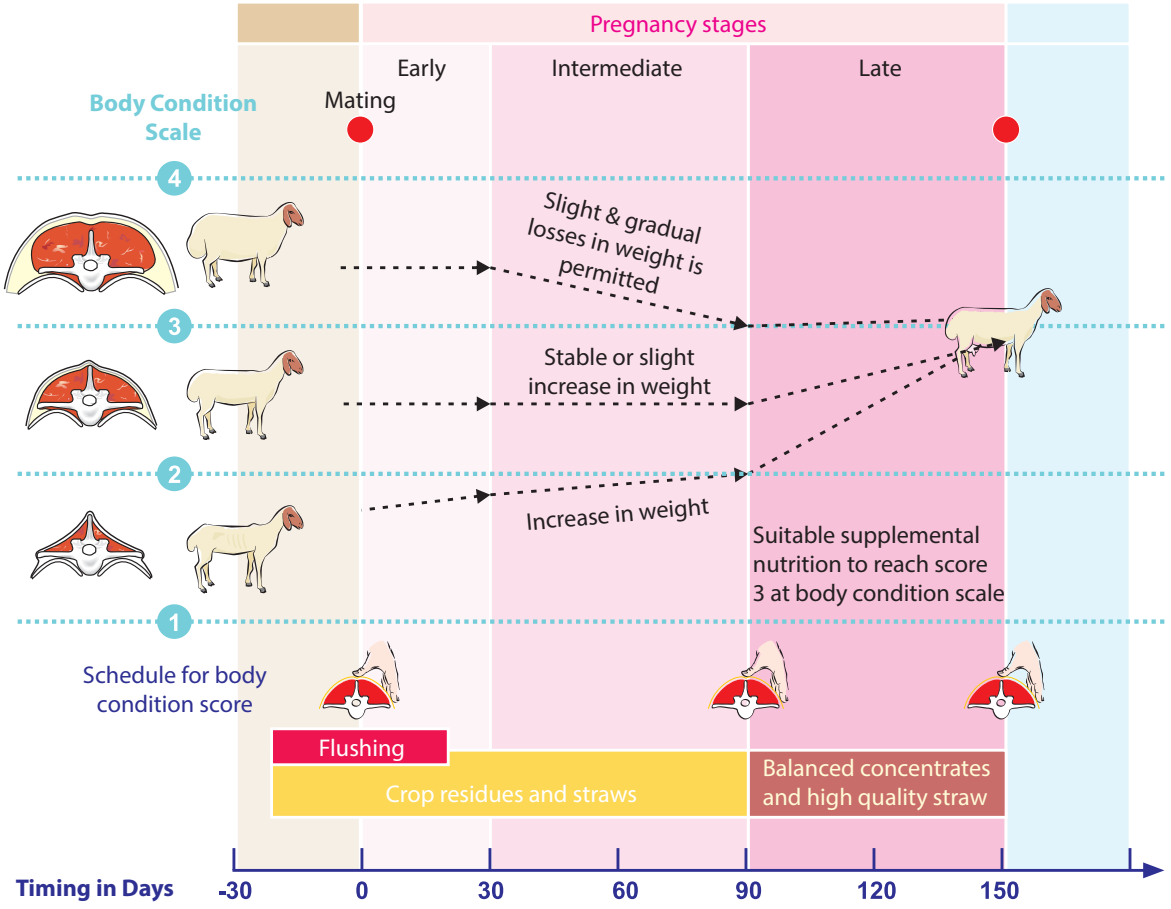
Ewe's Weight Variations during Pregnancy



Pregnancy is an important period of five months duration (around 150 days), and may be divided in three phases: early phase (1st month); intermediate (2nd and 3rd month) and late (4th and 5th month). This period is accompanied by important variations in ewe's weight, as a result of foetal growth and placenta development. The increase is accelerated during the last month of pregnancy due to accelerated foetal growth. The above figure illustrates weight variations for a 50 kg ewe at mating and bears one foetus during pregnancy.

Ewes' nutrition during Pregnancy

Ewe's nutrition during pregnancy period determines the number of lambs born, their weight and their ability to grow.



Evaluation of ewes' body condition at the onset of pregnancy period

Ewes are divided into three groups according to their body condition score prior to introducing rams:

- First group includes weak ewes of less than 2.0 body condition score. These ewes need nutritional supplementation to become similar to intermediate ewes. Young ewes that are not fully developed yet, which need supplemental ration to cover growth need, can be added to this group,
- Second group includes intermediate ewes with 2 – 3 body condition score. It is assumed that this group forms the majority of the flock. This group responds well to nutritional supplementation.
- Third group includes fatty ewes of more than 3 body condition score. These ewes need to maintain body condition during the first stage of pregnancy

Ewes' Nutrition during the early phase of pregnancy

Ewes need, during the early phase of pregnancy, a slightly higher nutritional level than their maintenance requirements. Grazing cereal crops' residues covers ewe's needs and, if nutritional supplementation is performed on ewes prior to rams' joining, it should continue for at least 3 weeks prior to introducing rams to ewes.

Nutritional supplementation may be provided through grazing crops' residues, grazing non harvestable barley crop or by providing concentrates at a daily rate of 200 g/ewe when grazing crops' residues. For more information, please refer to mating period booklet in this series.

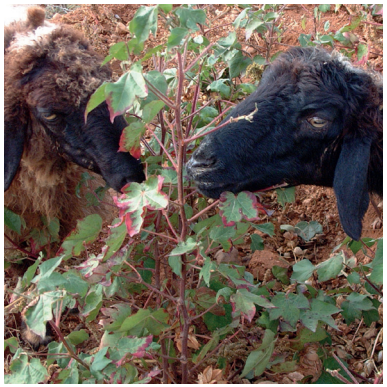
Ewes' weight must be maintained during the early stage of pregnancy, and any sudden variation in the ration should be avoided, since weight loss may lead to pregnancy failure and delayed lambing and consequently increases costs.

If rams are present with ewes in a flock, it would be necessary to separate them when concentrate feed are provided to avoid competition.

The quantity of concentrate fodder needed by a ram is related to pasture's quality and nutritional material it contains. In case where rams graze cereal crop's residues, providing a ram with 650 – 800 g of a balanced concentrate ration containing salts and vitamins is considered a good procedure.

The rams' support with concentrate continues as long as mating continues. After rams being separated from ewes or when mating process is ended, maintenance diets are provided.

Ewes' Nutrition in Early Phase of Pregnancy



Ewe's nutrition at this phase aims at ensuring optimal growth of the placenta, because the placenta's size determines the weight of the new born lamb.

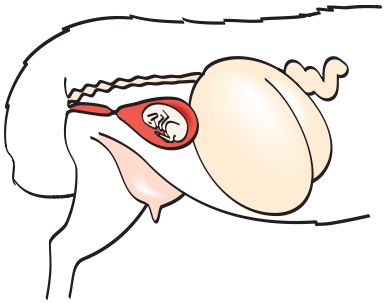
Ewes at the intermediate phase of pregnancy (2nd and 3rd month) are often fed on cereal crops residues and summer crops residues (vegetables and cotton). If these residues are not available, a sufficient quantity of good straw with 100 – 200 g of balanced concentrate ration is provided.

It is important, when using summer crops residues for grazing to consider pesticides 'residues. Therefore, ewes should be introduced to these pastures gradually, and when disease symptoms such as diarrhea or fatigue appear, grazing should be stopped and a veterinarian consulted.

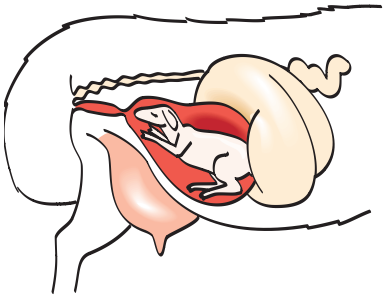
In general, the flock should be regularly monitored during this stage and fodder's quantity or grazing period increased, or transferred to a new pasture, if ewes are losing their body reserves, and fodder's quantity or grazing period reduced when there is an over usage or ewes accumulate fats.

The weight of fatty ewe or its fatness degree, during this pregnancy phase, may be reduced gradually and for not more than 3 – 4% of ewe's weight at mating or 0.5 score of body condition scale. Higher weight losses affect placenta development and consequently lambs' weight at lambing.

Ewes' Nutrition During the Late Phase of Pregnancy



Foetus at 12 weeks old



Foetus at 20 weeks old

Balanced nutrition during the last stage of pregnancy (4th and 5th month) is crucial to obtain strong and viable new born and for the production of good quality colostrum in abundant quantity. Ewes' nutritional needs increase during the last phase of pregnancy because of accelerated foetal growth, where around 70% of embryo weight happens during the last 6 weeks of pregnancy. At the same time the ability of ewe to ingest feed is reduced because of rumen contraction (due to fetus size increase). To satisfy ewes' needs during this period, maintain body condition and avoid dystocia, it is recommended to do the followings.

- Evaluate body condition 6 – 8 weeks before lambing period to identify weak ewes,
- Supplement these ewes with additional fodder concentrates to avoid reduction of its body condition below score 2 at lambing,
- The following table for ewes' nutrition may be adopted during the last phase of pregnancy.

Number of weeks prior to lambing	6	4	2	1
Ewe's Energy Need (MJ/day)	7.8	8.6	9.5	10.5
Good Barley Straw g/day	900	800	600	500
Balanced Concentrate Ration g/day	230	356	544	690

Feed ingredients needed to prepare one ton of concentrate mix	
Feed ingredients	kg
Barley	730
Wheat bran	150
Cotton seed cake	100
Vitamine and minerals	20

Composition of vitamine and mineral mix	g/kg
Dicalcium phosphate	600
Salt	300
Vitamine and minerals	100

Concentrate ration composition varies depending on locally available forage and their price. It is preferable that ration contains 11 – 12 mega joule energy/kg and crude protein at a rate of 14%.

Minerals and vitamins mix contains dicalcium phosphate, table salt and a mix of trace mineral and vitamins specific to sheep. Preferably consult the extension agent when buying them.

For more information, please refer to Feed Reference Guide in this series

When feeding ewes during the last phase of pregnancy, it is recommended to take into consideration the followings:

- Provide the best kind of coarse forages,
- Provide green plants and, if not available, use fish oil after consulting a veterinarian,
- Readily leak blocks, specific to sheep, can be used, if available,
- Secure sufficient mangers so that all ewes can ingest feed without contention,
- Preferably feed at least twice a day (concentrate ration may be divided in two parts),
- To avoid waste, it is preferable that the quantity of concentrated feed does not exceed half a kilo per meal.

Importance of water

Ewes' water consumption increases during pregnancy and doubles in the last month of pregnancy and when providing rations rich in protein and salts. Clean fresh water should be provided in abundance and regularly, since contaminated water transports diseases, also a shortage in water limits feed consumption and acute shortage leads to dangerous health problems such as pregnancy poisoning and abortion. The followings should be observed:

- All flock's individuals should have free access to water troughs,
- Regularly clean and maintain water troughs,
- Bring sheep to water troughs rather than bringing water to the sheep (if possible) for the flock to remain dry and away from mosquitoes and flies.

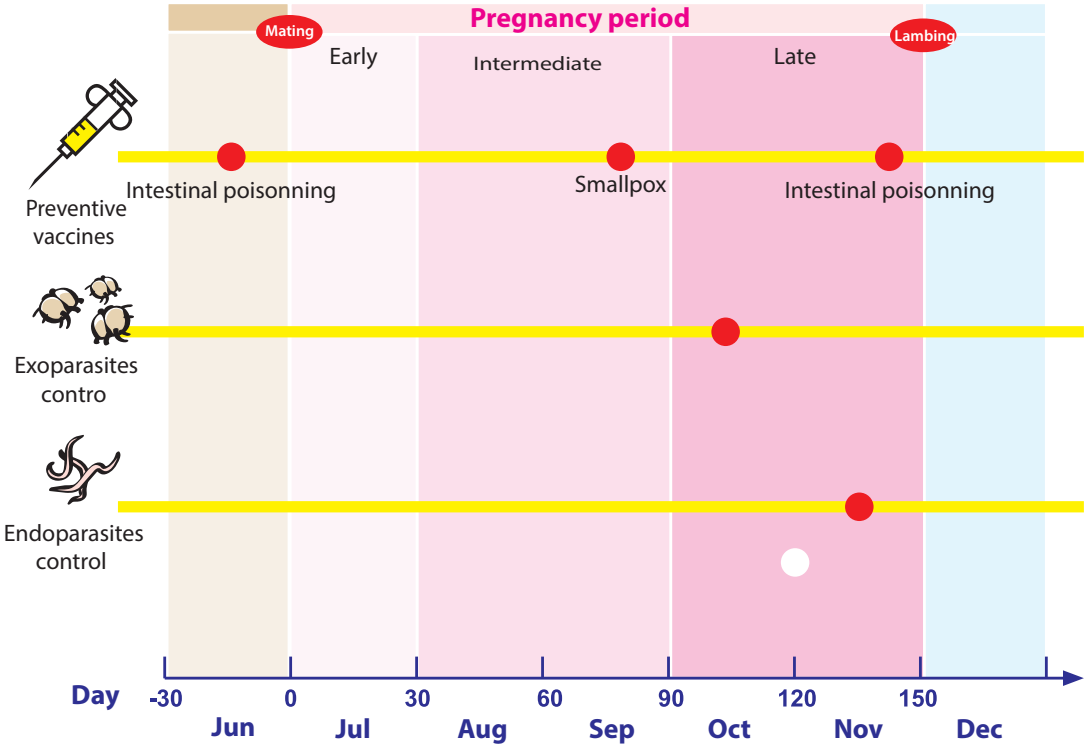
Herd's Health during Pregnancy Period

The application of general health rules, meeting the ewe's nutritional needs and securing clean water are of vital importance to maintain the herd's health.

To maintain sheep's good heath the followings should be performed:

- Consult the veterinarian of the region where the flock is present to determine the necessary and timely immunization needed, since a vaccination can be dispensed and its administration schedule changed according to the diseases prevalent in that region,
- Follow the instructions supplied with medication and ensure the use of safe medicines during pregnancy period,
- Record all information related to flock's health (vaccine used, vaccination date, emergency disease cases, drugs used, and other health data such as abortion and mortality cases).

Of the most important preventive immunizations, applied in Syria during pregnancy period, is sheep pox vaccine which is given prior to entering winter, and often two months before lambing, as well as enterotoxaemia (intestinal poisoning) which is given according to the manufacturer's instructions, often given 2 3 weeks prior to lambing, where it provides immunity to the ewe and its new born lamb. As for anthrax and foot and mouth disease vaccines, they are given in some regions according to disease spread and its risk degree. Therefore animal health service in the region should be consulted to acquire the information needed.



Ecto- and endoparasites should be controlled prior to lambing to limit the exposure of the new born lambs to these parasites. Treatment of ectoparasites may be needed, when necessary. However, safe and suitable formulations for pregnancy and pre-lambing periods should be used. Any stresses to ewes during pregnancy such as shearing, transportation and abrupt change of ration composition should be avoided.

Remember

When the date of lambing approaches, the followings should be considered:

- Monitor ewes at regular basis and it is preferable to place them in a nearby pasture and shelter them at night in illuminated barn (if possible),
- Do not expose ewes to stresses such as transport and follow up,
- Cut extra wool and remove dirt around legs, udder and back,
- Maintain the barns clean, dry, ventilated and protected from rains and winds,
- Provision of basic medical materials such as sterilizers, iodine, thermometer, syringes and emergency drugs,
- Record emergency health problems for each ewe to take that into consideration in the selection program,
- Notify the veterinarian immediately in case an ewe is aborted and isolate the aborted ewe and dispose of the foetus and placenta duly.

Best Practices for Managing Awassi Sheep

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