Obsalim ®

How to use the card system

OBSALIM: A set of cards to make a diagnosis of the nutrition of goats.

2011 English

The objective of the OBSALIM diagnosis

The system allows you to identify the existence of a problem related to the ration and then to understand where the ration fails, based on the observation of herd. The diagnosis is made using 7 criteria.

How to make the OBSALIM diagnosis:

After having completed the totals for each criterion of the selected cards,
   – negative values indicate a limiting factor,
   – positive values indicate an surplus factor.

The total values are only there to compare the criteria of the method; they do not have absolute values.

To achieve a safe and successful OBSALIM diagnosis the following four steps need to be followed carefully:

1/ Evaluate the uniformity of the herd:

If all the animals are in good condition, they display vitality and are perfectly clean, then there is little scope for improvement.

If some of the animals are thin, dirty, tired or show any kind of non adaptation to the normal herd management (feeding, housing, reproduction, management of the different groups),

If the appearance of the animals in the herd is variable and not explained by obvious genetic differences:

go to the next step.

2/ Check the cross of the hip (see card 61) on several goats.

Determine a trend:

Dirty under a horizontal line that goes through the stifle (chest, belly, udder, elbows, stifle, lower legs):
feeding is a problem (dirtiness can be obscured through washing, from wet weather or through excessive clean bedding).

Dirty behind a vertical line in front of the stifle (pelvis area, tail, anus, whole of hind legs):

There are problems with '<u>positioning on the floor</u>': dirty housing, cramped space, overcrowding, poor access to feeding. Take care here, as some soiling may relate to both areas and there can be social (hierarchy) factors determining the dirtiness of the animals.

When several goats are dirty below the horizontal stifle line:
go to the next step.

3/ Evaluate the rumen stability:

(card 1: Zone pHG, card 14: Changeable droppings).

Determine a trend:

Zone pHG: indicates a (temporary) drop in the rumen pH causing partial sterilisation of the rumen flora or a reduction of its fibre digesting activity. The animals eat too much highly digestible food and do not control the acidity in the rumen: there is insufficient saliva production (mastication) and/or insufficient reduction of food intake by the goats. This instability is due to the sequence of the food intake. Fibres should be offered before highly digestible food.

Changeable droppings: there is an inconsistency of access to the different types of food either between the times of the day or from day to day.

4/ Evaluate the ration :

Identify the various digestive symptoms present in the herd using the cards. Select the cards that illustrate the most common and clearly marked symptoms. Ideally they should belong to at least three different anatomical areas (color codes). It can be helpful to make homogenous groups of animals according to age or level of production, to look for trends in the symptoms.

Then make totals by adding up the values at the bottom of the selected cards for each OBSALIM criterion (fE, gE, fP, gP, fF, sF, sR)

The negative totals indicate the criterion(s) of the ration that are deficient. The positive totals indicate the criterion(s) that are in excess. A zero indicates a physiological balance. The efficacy of the ration is illustrated by the closeness of the values for fE and gE; the closer these values the better the conversion of energy for the physiological and production needs of the goat.

Take great care when evaluating the hip cross which indicates the incidence of feeding, housing or other factors.

Principle of triangulation:

Combine the symptoms found on at least three different anatomical areas (three cards with different colors): this will make the diagnosis more reliable. If the 61 cards are not sufficient, the book or software will provide extra help.

The most visible and frequently appearing symptoms:

Only use the most visible symptoms present within the largest number of animals. It is best to make sure the symptoms are present in 2/3 of the animals; this will show a valid trend: a collective symptom.

Groups :

If necessary put the animals in groups related to their age and/or pro-
duction to increase the frequency of symptoms within each group.
A diagnosis can be made within each group.

Group the symptoms

In relation to the time they took to appear (delay time is indicated on the
bottom right of the cards).
This avoids failing to notice the effects of an intermediate ration
change.

Check on the validity

Of your diagnosis by following the evolution of the symptoms and
production after changes have been made to the ration.

For the energy intake (carbohydrates):

fE stands for fermentable Energy which gives an indication of the energy available to the rumen flora (nutrition of the rumen flora). This is the fast fermenting energy that is transformed into the volatile fatty acids absorbed by the rumen for the metabolism of the goat.

gE stands for the global Energy; the amount of energy absorbed by the animals, out of the total energy available from the ration and rumen bacteria.

For the protein (nitrogen) intake:

fP stands for fermentable Protein which gives an indication of the protein available to the rumen flora (soluble protein). The excess can be assimilated by the animal through the rumen.

gP stands for the global Protein (nitrogen) absorbed by the
   animal including the part extracted from digested rumen flora.

For the fibres:

fF stands for the fermentable Fibres: the fine fibres easily
   transformed and fermented by the rumen flora.

sF stands for the structural Fibres which promote chewing,
   salivating and ruminating: they are resistant to chewing but are
   fermentable by the rumen flora.

For the overall functioning of the rumen:

rS indicates the rumen Stability during and after each meal
   (short delay) or from day to day. A negative value indicates instabi-
   lity of the rumen which relates to fluctuations of the rumen pH and
   to varying of the ration from one meal to another.

rS negative:

The rumen stability is a limiting factor. If rS is the most negative value, the instability of the ration is predominant. Check whether this instability is due to the feeding sequence (acidifying food before salivating food or insufficient salivating food) or due to the variability of the ration between meals, or between days (too frequent ration changes, continuous ration changes). Take care to closely observe the unexpected or variations in the eating (selecting) behaviour of animals that are fed complete rations.

One principle: feed effective fibres at the beginning of each meal, if this is not part (or sufficiently part) of the ration.

Feeding regularly and good management of the sequence of meals and ingredients are important and are more effective than attempting any correction of energy and protein (nitrogen).

<u>When sF is low (structural Fibre):</u>

- There is insufficient roughage or it is not resistant enough to mastication (too much chopped or other mechanical damage, soft roughage, early harvesting...).
- Often there is a wide gap between fF and sF (eating lots of fine roughage). Food mixers can cause excessive damage to the structure of the roughage.

<u>When fE is very high (fermentable Energy):</u>

- The ration is too rapidly fermented (high content of fast fermenting starch, early harvesting,...) and its rate overtakes the absorption capacity of the rumen.
- The excess of energy will cause a drop in the pH (acidification after eating) of the rumen and cause a partial sterilisation or modification of the rumen flora which in turn reduces the appetite for roughage rich in fibre. Even temporary drops in rumen pH will reduce its activity.

<u>When there is a large difference between fE and gE:</u>

The fermentable energy is not assimilated by the animal. Other limiting factors (rS negative: unstable ration or fP negative: not enough digestible protein (nitrogen)) reduce the rumen efficacy of transferring the energy produced to benefit the animal. The transfer from rumen to animal is inefficient and there is a risk of disease.

<u>When fP is negative:</u>

There are insufficient digestible proteins (nitrogen) to sustain the fermentation of the ingested fibres. Saliva recycling and the way of feeding young animals (with no easily fermentable energy offered to calves) may reduce the need for proteins (nitrogen) for the rumen bacteria.

Take care with cake containing very slow digestible proteins (nitrogen).

<u>When fF is very high and sF is positive</u>:

Most likely due to overeating of too palatable roughage.

<u>Note</u>:

The symptoms with short delay will be the first ones to disappear after adjusting the ration. The increase of milk production will be limited in some breeds and at the end of the lactation.

To improve the profitability of the production, one has to aim for a positive value for each Obsalim criterion.

There are two possible directions of change in the ration:

1) Increase that part of the ration responsible for the limiting factor of the OBSALIM calculation with a view to increase yields.

2) Reduce that part of the ration responsible for the surplus factor of the OBSALIM calculation to optimise the efficacy of the ration in relation to (milk) production (profitability). Take care with mixed breeds which do not have the capability to increase milk yields.

After organising the calculated factors from the most limiting to the most surplus factor of the ration you have to decide:

- what part of the ration to offer at a different time of the day (very low rS indicates a good feeding pattern),

- what part to increase (food with high fP effect when fP is negative, or with low fP effect when fP is high),

- what part to decrease (look to reduce the high fermentable ingredients when fE is high),

- or what food (ingredients) to add to compensate for weaknesses in the ration (fibrous food if sF is limiting).

After having made changes to the ration you can check the effects by observing the rapidly changing symptoms of the OBSALIM method, or by monitoring diseases or the profitability of the ration (conversion of the ration into milk and or meat).

ENERGY

fE: food rich in rapid fermentable energy or roughage rich in sap, cereals with easy to ferment starch (wheat, rye, triticale), hemicel-lulose from leaves, organic acids (clover), sweet or acid taste from sap (in the stem nodes). Early (young) roughage, short wilting time. Wet or insufficiently matured maize.

gE: slow or difficult fermentable starch (hard maize grains), mature stems and leaves, loss of sweet taste, late roughage.

PROTEIN (nitrogen)

fP: soluble and little protected (pressed) part of the cake or protein crop, young protein-rich roughage. These proteins ensure the nourishment, activity and growth of the rumen flora.

gP: non-soluble part of the protein (protected protein (nitrogen)).

FIBRES

fF: leaves, short chopped or soft plant material, short strands. Rapidly ingested and easily degraded into fermentable energy (fE)

sF: long stems or leaves, un-chopped plants, plants are hard to chew; they promote salivation and slow down (regulate) food intake.

RUMEN STABILITY

sR negative: much fermentable food, insufficient protection through ingested fibres, irregularity of feeding pattern between morning and evening and/or from day to day.

sR positive: food and feeding pattern avoiding the appearance of an unstable rumen or rapid acidification of the rumen after eating (speed of food intake controlled, good saliva production)

Regularity of feeding pattern between morning and evening and from day to day is paramount.

Obsalim ®

The 143 symptoms and the method are more fully explained in the book "The cows tell us about their nutrition" and in the computer program "Obsalim 2.0".