



# SHEEP SHEET

by Dr. Lyle G. McNeal, Executive Director,  
NSP; Sheep & Wool Specialist;  
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The astronomer said, "When you look at the heavens at night in the mid of winter, you are seeing the same sight you would see at high noon on a summer's day - if you could see the stars." So what was the ewe doing with her head aimed toward the stars? Stargazing of course!

## GENERAL INFORMATION:

Pregnancy Toxemia, ketosis, twin lamb disease, or pregnancy paralysis is a nutritional stress syndrome of sheep. Unlike its counterpart in cattle, it is a highly fatal disease occurring in the last weeks of gestation (pregnancy).

The disease is associated with ewes carrying multiple births, i.e. twins, triplets, quads, etc. So as we either breed or maintain ewes in our flocks that are prolific by giving us multiple births, we must increase our sensitivity to our overall nutritional management. A decrease in the pregnant ewe's opportunity for exercise also increases the chances of pregnancy toxemia.

Multiple developing fetuses cause a tremendous nutritional drain on the ewe late in pregnancy. Her not eating because of inclement weather, or stress of cold or wind alone may cause a fall in blood glucose (the body's fuel) levels and an increase in plasma ketones. Separately these factors may be tolerated, but combined they may not be reversible and lead to coma and death in four (4) to seven (7) days.

## SYMPTOMS:

Affected ewes separate themselves from the flock. Because the ewes are almost blind or blind, they are alert and react to sound, but are reluctant to move. They may face man, or dogs, but make no attempt to escape. They may circle, bump into objects, quiver and shake, or twist their neck and elevate their face as if "star gazing". Incoordinated, they stumble and fall eventually going into convulsions. They may exhibit drowsiness between convulsions. Feces are dry, scanty (few). Teeth grinding may be heard and

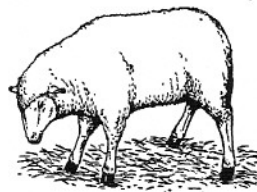
# Pregnancy Toxemia, Ovine Ketosis, Twin Lamb Disease or Ewe Sleepy Sickness

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## Sheepdex: H-12

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observed also. Untreated ewes are unable to rise for three (3) to four (4) days before death. The unusual smell of ketones ("sweet breath") may be present on the breath. Ewes near lambing may be weak, have their lambs with great difficulty and the lambs may be dead. Fetal death may occur without lambing (death of lamb *in-utero*, decreasing the ewe's need for glucose, but toxemia from the decomposing lambs causes a relapse.



**A ewe in early stages of pregnancy toxemia may be listless and lazy.**

## CLINICAL DIAGNOSIS:

**Later her legs are uncoordinated and she lies with her head turned back.**



Low blood sugar, increased ketones in the urine and blood are characteristic. Blood glucose levels may fall to 20-40 mg/dl or lower. Fat in the body is mobilized (used) to the liver in an effort to produce glycogen. This leads to a fatty friable liver found at post-mortem in a ewe that also has multiple fetuses in various stages of decomposition.

Diagnosis of the disease is based on symptoms, history, and clinical tests of low glucose, high ketones, and necropsy findings. Ewes may be treated with glucose (30-55 cc of 50%) early on in the disease and temporarily respond. They shiver, shake, urinate, defecate and may appear normal. That may help to establish a diagnosis (glucose response test); but the glucose used up and one treatment will not solve the negative nutritional balance.

## TREATMENT:

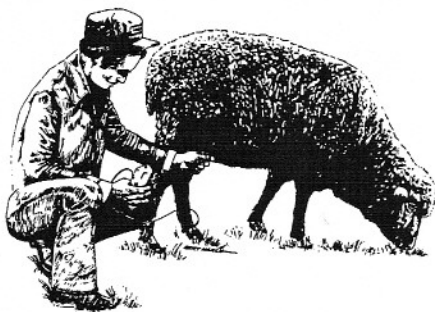
Treatment consists of getting rid of the nutritional drain on the mother — Caesarian section; if early, inducing labor with steroids (Dexamethasone 25 mg); or propylene glycol by mouth three (3) to four (4) times a day. In a pinch I have also utilized Karo Syrup™, any pancake syrup, and especially molasses. Those substitutes are fed at the same level of the propylene glycol. Valuable ewes may be given an intravenous catheter with continuous therapy of glucose as well as lactate ringers or sodium bicarbonate solution to combat acidosis.

## OTHER POSSIBLE DISEASES:

One disease to consider in differentiating from toxemia would be milk fever (hypocalcemia) which occurs in lactating ewes or late pregnancy. It has a shorter course and responds well to calcium gluconate. Circling disease (listeriosis), rabies, grubs-in-head, cerebral abscesses or ear infections have to be considered, as well as Louping ill (with appropriate tick vector [carrier]).

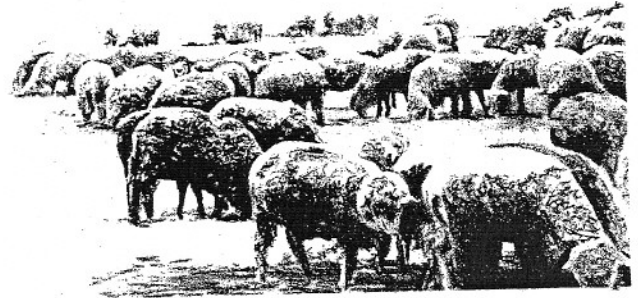
## PREVENTION:

By far, easier than treatment is prevention of pregnancy toxemia. As our overall sheep husbandry becomes more skilled, we need to be aware of breeding (due) dates. Ultrasonic pregnancy determination would be bar far the most accurate means of identifying those ewes carrying multiple births, and early in pregnancy. We need to identify twin, triplet, etc. producing ewes in order to calculate proper nutritional supplementation.



**Ultrasound for  
Pregnancy  
Determination**

**Insure, even if necessary  
by supplemental feeding  
that pregnant ewes  
receive adequate energy  
the last 6 weeks of  
gestation.**



Increase the level of nutrition gradually over the last six (6) weeks of gestation. The difficulty here is, if you feed your ewes to prevent toxemia, the single lamb fetuses grow large and may produce difficult births. Provide adequate trough space. Avoid sudden changes of feed — quantity and quality. Provide extra feed in bad weather. Good pasture provides adequate energy as well as adequate exercise. Regular sufficient exercise is very important for body tone and circulation.

If you suspect pregnancy toxemia, early diagnosis and treatment may help to save some ewes, but it may give time to take preventative measures as well. Whole grains, i.e. corn and barley are excellent sources of concentrated energy, particularly if pastures and/or ranges are in poor condition. Generally, 3/4 to 1.0 lbs can meet the multiple lamb bearing ewe's energy needs during the last six (6) weeks of pregnancy.

If you are unsure of any of your pregnant ewes conditions, do not hesitate to contact your closest practicing veterinarian.

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*The Navajo Sheep Project;  
Serving People, Preserving Cultures, Inc.  
(is a non-profit organization)  
PO Box 4454  
Logan, UT 84323-4454*