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# Diseases of goats - Enterotoxemia

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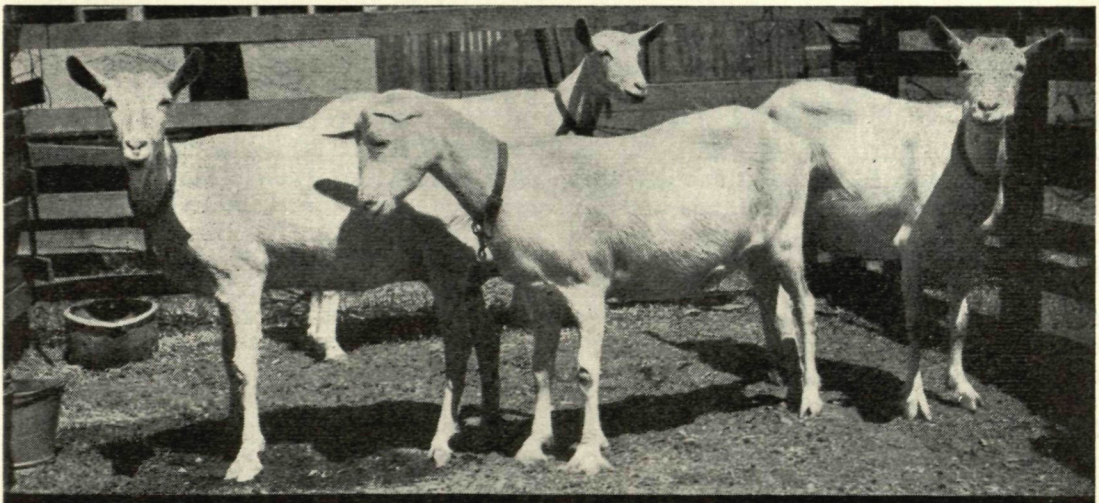


# DISEASES of GOATS

## ENTEROTOXAEMIA

By J. SHILKIN, B.V.Sc., Assistant Chief Veterinary Surgeon

**ENTEROTOXAEMIA is mainly an acute infectious disease caused by the organism Clostridium welchii, Type D, which is also responsible for enterotoxaemia or "pulpy kidney" in sheep. The organisms are normal inhabitants of the small intestine, but under favourable conditions they may produce a powerful toxin. The subsequent absorption of this toxin through the bowel wall generally produces a fatal toxaemia.**

Goats of all ages may be affected, but it is probably more common in those over six months old, and animals in good condition are the most susceptible.

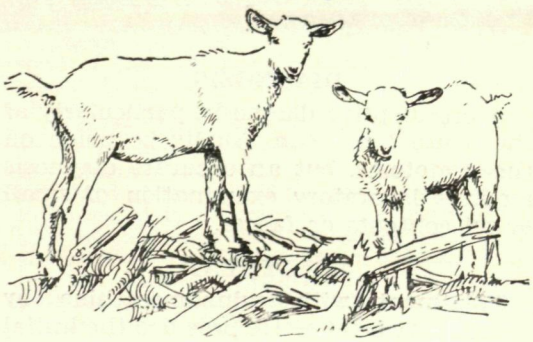
Alteration of the physical state of the bowels, such as may occur with a sudden change of feed, or when plentiful supplies of lush feed enable the animals to eat their fill without taking adequate exercise often results in the occurrence of the disease.

### SYMPTOMS

There are two well-defined forms—acute and sub-acute and possibly a third, a chronic form.

In the **acute form**, the most noticeable symptoms are a sudden loss of appetite, severe watery diarrhoea which may be blood-stained, marked abdominal pain, violent movements and screams of pain followed by coma and death. The temperature may be high and the respiration accelerated and death usually occurs within several hours, or up to 36 hours after the appearance of symptoms.

In milking animals, there is a sudden drop in milk production at the milking prior to the onset of symptoms.

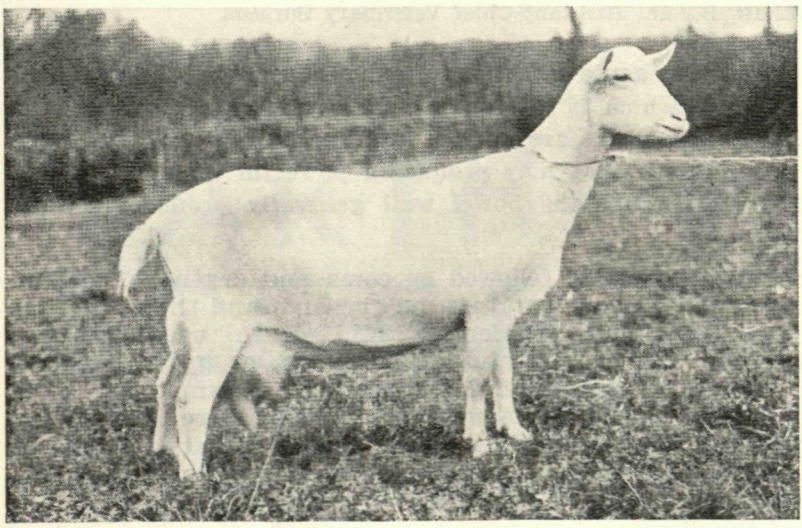


The **subacute form** is characterised by a loss of appetite and softening of the droppings which rapidly become diarrhoeic, and may contain some blood. The animal is dull and listless, but the severe abdominal pain seen in the acute form is absent. There is, in this form too, a sudden drop in production in milking animals and the symptoms may persist for several days before death occurs.

There is some doubt about a chronic form, but there have been reports of a condition in which anaemia and wasting occurred over a period of months and which was attributed to C. welchii infection.

## POST-MORTEM SYMPTOMS

As with sheep, post-mortem findings are not very evident, particularly if the examination is carried out soon after death, but small haemorrhages of the heart muscle and sac and inflammation of the fourth stomach and small intestine are usually present.



Saanen goats in particular are often adversely affected by injections of Pulpy Kidney vaccine as prepared for sheep. Specially prepared goat vaccine should always be used

## DIAGNOSIS

A presumptive diagnosis, particularly of the acute form, can usually be made on the symptoms, but an accurate diagnosis requires laboratory examination of small bowel contents or faeces.

## TREATMENT

Treatment with sulphamezathine by mouth may be effective provided the initial dosage is high and subsequent doses maintained at proper intervals for a sufficient length of time. For this purpose, 2 grammes (4 tablets) for each 20 lb. weight given as the initial dose followed by 1 gramme (2 tablets) for each 20 lb. weight at 12 hourly intervals until the diarrhoea ceases, would be a suitable dose rate.

Pulpy Kidney Antitoxin may also be used for treatment, and for this purpose the injection should be carried out as early as possible. At least 20 ccs. should be injected but up to 100 ccs. may be used if thought necessary.

The combination of sulphamezathine and antitoxin treatment is likely to be more successful than either alone, but as will be mentioned later, the use of antitoxin has some dangers, particularly with the Saanen breed.

## PREVENTION

As it seems that a sudden change to succulent feed is an important factor in "triggering off" the infection, every care should be taken to accustom the animals to new fodder gradually.

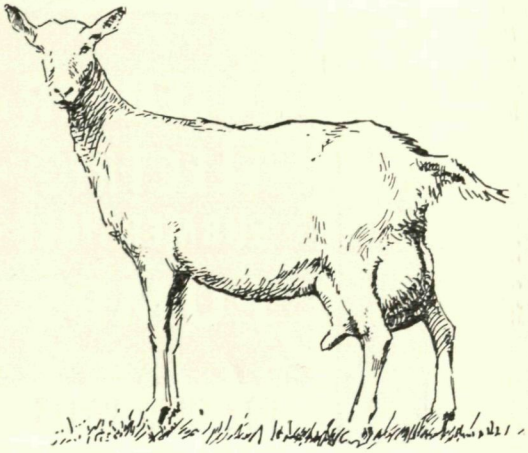
When cases occur, it may be possible to protect the remainder with antitoxin which confers immunity for two or three weeks. However, antitoxin is comparatively expensive, and as there are some special dangers in the use of antitoxin, it is probable that preventive vaccination designed to maintain a high level

of immunity throughout the year is the more practical procedure. This is particularly important in goats in which the seasonal incidence seen in sheep does not necessarily occur.

For this purpose a special vaccine for goats has been prepared by the Commonwealth Serum Laboratories, and this is given by subcutaneous injection in a dose of 1 cc. followed successively at intervals of one week, by doses of 2 ccs., 3 ccs., and 4 ccs. A further dose, also at an interval of one week may be given with advantage.

In order to maintain the level of immunity, re-vaccination at intervals of approximately six months is advisable.

In the case of the white Saanen breed particularly, there appears to be an idiosyncrasy to the injection of Pulpy Kidney sera and vaccines—and possibly other vaccines—and collapse, abortion and deaths are possible if care is not taken. This condition is known as anaphylatic shock and may occur where an animal is first sensitised with a foreign protein and then injected ten or more days later with further amounts of the protein. For this reason, the special vaccine for goats has been prepared in such a manner that the foreign protein it contains has been reduced to a minimum and vaccination is carried out with small doses at intervals of one week. It is important to remember that these intervals should not exceed one week.



## "MOORA" WHEAT

### No Pedigree Seed This Season

Early last year the wheat variety "Moora" bred by the W.A. Department of Agriculture was released for distribution to farmers. A mid-season variety with high flour strength it was considered to be a suitable replacement for the varieties Bencubbin and Bencubbin 48.

In tests conducted by the Department, "Moora" out-yielded both these varieties and proved superior to Bencubbin 48 in straw strength and disease resistance. It is resistant to flag smut and all known Australian races of stem rust. In addition it has other desirable agronomic characters including the absence of shedding.

The Director of Agriculture (Mr. G. K. Baron Hay) when discussing the performance of "Moora" during the past season stated that it had generally fulfilled expectations in comparison with the two Bencubbins.

Last season the bushel weight of many deliveries of a number of varieties was below average owing to the influence of the long season and late rains near maturity.

Bencubbin 48 under these conditions showed a bushel weight lower than many of the other varieties but was superior to "Moora." The bushel weight of "Moora" was, in many instances such that it might have been subject to dockage on this account but in a more average season this variety could give a satisfactory bushel weight figure.

Generally, it is considered that "Moora" has proved superior to Bencubbin in the aspects of grain yield production, flour quality, disease resistance and other agronomic features and in spite of the low bushel weight in the 1958/59 season, is still a desirable midseason variety for planting under our conditions.

However, the Department is not losing sight of the importance of bushel weight in relation to "Moora" and this will again be closely examined at the end of the coming season. On this account it is considered that pending further information it would be unwise to encourage the expansion of the growing of "Moora" and it has been decided to withhold the distribution of pedigree seed from research stations to farmers for this year, pending this enquiry.