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Down and out [pulpy kidney disease]

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These two photographs, taken three hours apart, depict the 21st death in a flock of 300 ewe weaners.

**History**

Two days previously the weaner mob had broken through a gate into a hundred-acre paddock in which an excellent green oat crop was growing. The owner had not been particularly worried because the oats needed grazing. When however, he went to check the water troughs and found 17 weaners dead, and at least another two sick he became perturbed.

**Findings**

The carcasses of the dead sheep were distended but the weather had been very hot and the sheep could have died up to 48 hours previously. The only thing unusual about the two sick sheep was that they could not stand up and appeared unaware of their surroundings.

A quick inspection of the paddock by the farmer revealed three plants with which he was not familiar growing amongst the oats. Could they be toxic?

The owner had heard that there was a post-mortem room attached to the local office of the Department of Agriculture, so he lifted two of the dead sheep onto his utility, placed the three plant samples on the front seat and drove off to town.
Veterinary Examination

The veterinarian listened to the history and then asked numerous questions about flock vaccination, drenching, pasture top-dressing and water supply. He expressed disappointment because the farmer had brought two dead sheep instead of one dead and one live sick sheep, but said he would look at the dead sheep and have the plants identified.

With the help of the district Agricultural Adviser two of the plants were identified as harmless varieties. The third plant could not be definitely identified but was not thought to be a toxic species.

Post-Mortem Examination

The first sheep proved to be too decomposed for adequate examination. The second sheep fortunately had been dead for only a few hours. Significant findings were:

(1) Small blood haemorrhages under the skin.
(2) Gas filled intestines containing little food.
(3) Excessive straw coloured fluid in the heart sac and small pinpoint blood spots on the heart wall.
(4) Loss of shape in both kidneys which were pulpy in consistency and dark red in colour.

These findings, together with the history, showed that the deaths were due to pulpy kidney disease.

The contents of the stomach did not contain any leaves of known poisonous plants.

Reason for Deaths

Although the weaner flock had been vaccinated with enterotoxaemia vaccine once at marking, no follow up injection had been given and their immunity had quickly waned. When their diet had suddenly changed to lush green feed with little fibre, pulpy kidney bacteria present in the small intestines had been given ideal conditions to multiply. As their number increased so the amount of toxin produced had increased.

This toxin, upon absorption into the blood stream had been the cause of the deaths.

Action

The farmer still had the vaccine intended for the second dose stored away in a cool dark place, so upon hearing the diagnosis and advice he returned to his farm, mustered the remainder of the 300 weaners, vaccinated them and placed them in a scrub paddock.

Result

The veterinarian had forewarned that more weaners might die despite vaccination, but since they had been given a previous priming dose a second vaccination would give a quick build-up of immunity. In fact ten more weaners died within 24 hours of revaccination. One further death occurred. Two weeks later the weaner group was returned to graze the oats and no further losses took place.

Losses

This farmer estimated his immediate losses at $300 not to mention the fact he had lost 30 potential breeders. He has learnt his lesson and vows that in future all lambs kept on the property will receive two initial injections with enterotoxaemia vaccine with an annual booster dose for all sheep.

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