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Welcome to your Farm Newsletter for May/June of 2022!

With summer just around the corner we're looking forward to warmer weather, sunshine and perhaps an ice cream or two.

We hope lambing season has gone smoothly for you – if you have any concerns or questions, remember, don't hesitate to get in touch.

In this issue we delve into trace elements in sheep, how important they can be and what deficiencies can mean for your flock.

We also highlight the causes of calf scour, what you can do in the way of treatment and how to prevent it in the future.

Please let us know what you think of these topics and if there are any you would like us to cover in upcoming newsletters.

Get in touch at farmandequine@ardenehouse.co.uk.

See you next time,

The team at Ardene House Vets

In this issue:



Calf Scour

Have you experienced calf scour in your herd before? We've got everything you need to know including causes and prevention tactics.



Trace Elements in Sheep

When sheep suffer with certain deficiencies it can lead to health problems. Find out about the important details and what you can do to treat common deficiencies.



Calf Scour

Continued 

Calf scour is one of the most common causes of death during the pre-weaning period costing approximately £60 per head in an outbreak. It can occur by both infectious and non-infectious reasons and it is common to find mixed infections on a farm. There are thankfully lots of different management options and diagnostic aids available to us.

Causes

Viruses

Rotavirus/Coronavirus – Calves are usually affected from 1-3 weeks of age. They usually present with lethargy, watery yellow/green scour and in severe cases sunken eyes. Infection usually comes from accommodation and can be passed by calves directly.

BVD – Signs usually include fever, lethargy and scour. You may see evidence of ulceration and erosions in the mouth and tongue. BVD can suppress the calves' immune system and make them more susceptible to secondary infections.

Bacteria

E. coli – Signs are usually seen in animals as young as 1-3 days of age. They usually become infected from the environment picking it from other calves/cows passing it in their dung. It leads to release of a toxin in the system that cause scour, lethargy, dehydration and enterotoxaemia.

Salmonella – Usually see in calves between 2-6 weeks of age. Similar to E. coli, there is a toxin released that can lead to septicaemia, fever and bloody scour. Can also cause joint ill and pneumonia. Can be passed by other cattle, rodents, birds, humans and water sources.

Clostridium perfringens - Usually fatal due to enterotoxaemia. Colic, bloody diarrhoea and collapse. Usually associated with changes in feed or management practices.

Parasitic

Cryptosporidiosis – This is a zoonotic protozoan parasite that usually affects calves from 1-3 weeks of age. Animals usually present with bloody, mucousy scour. Large number of infective oocysts are commonly excreted by infected calves leading to a significant environmental burden. These oocysts survive for several months in the environment. Oocyst excretion from calves usually reduces 1-4 days after cessation of scour.

Coccidiosis – Can be seen in calves from as young as 3-4 weeks of age. Usually seen in weaned calves that have been recently mixed. Contaminated water courses can also be a source of infections. Clinical signs include loss of appetite, dehydration, straining, rectal prolapse and stunted growth.

Nutritional

Nutritional scour usually occurs due to stress from management changes. This can be due to over consumption after a period of starvation or feeding milk replacer at the wrong temperature/concentration. It may make calves more susceptible to secondary infectious causes.

Necrotic Enteritis

Disease of unknown cause seen usually in spring born suckled calves between 6-16 weeks of age. Usually present with bloody, mucousy diarrhoea, may develop ulcers on lips, gums and tongue. Mortality can be more than 95% of cases. Others in group may show mild scour. Response to treatment poor. As the cause is unknown there is no effective prevention.

Treatment

Fluid therapy is the mainstay of treatment for scour. This can be either via oral electrolyte solutions or IV depending on the level of dehydration. Calves that are unable to stand and have loss of suckle reflex benefit from IV sodium bicarbonate to treat metabolic acidosis.

Dehydration	Clinical Signs	Treatment
0-3%	Scoring, standing, no evidence of sunken eyes	Oral rehydration
4-7%	Mildly delayed skin tent, lethargic	Oral rehydration, consider IV fluids
8-12%	Delayed skin tent, sunken eyes	IV fluid therapy
>12%	Fairly weak, collapsed, sunken eyes	IV fluid therapy

Continue feeding normal milk or milk replacer to meet the calves' energy demands. If there is any evidence of hypothermia, then use of a heat lamp or good thick bedding should be used to prevent further heat loss. Halofuginone is licensed for the treatment of Cryptosporidiosis. Antibiotics are rarely necessary.

Diagnostics

During an outbreak ideally take scour samples from 5 calves to test for virology, culture and parasitology. Bloods/ear notch sample needed for BVD.

If concerns of poor colostrum uptakes, samples can be taken from calves less than a week old for ZST or total proteins. Can use refractometer to measure dam's colostrum to check adequate levels.

Management/Prevention

- Isolate, test and treat any calf showing clinical signs
- Make sure all calves ideally get 3 litres colostrum within the first 6 hours of life. If any doubts stomach tube
- Clean and disinfect pens regularly. Leave to dry fully. If you have issues with cryptosporidiosis, specific disinfectants need to be used
- Bed daily
- Remove afterbirths as soon as possible
- Don't give mastitic milk or pooled colostrum
- Don't mix different age groups of calves
- Tend to healthy calves before dealing with sick calves
- Clean feeder, feed/water troughs, passageways etc. regularly. Clean and disinfect any equipment regularly
- Making sure milk replacer is fed at the correct concentration/temperature and mixed properly
- Halofuginone is licensed to prevent cryptosporidiosis
- Toltrazuril and Diclazuril are both licensed to prevent coccidiosis
- Vaccines are available for Rotavirus, Coronavirus, E. coli, BVD and Salmonella – calves must receive adequate volumes of good quality colostrum for passive transfer of antibodies

Trace Elements in Sheep



Trace elements are essential for the correct functioning of a sheep's body. What grazing animals manage to absorb depends on:

- Uptake from soil to plants
- Absorption from eaten plant by the sheep

There is considerable interaction between minerals in feed which affects absorption. The pH of soil is designed to increase grass load but can have negative effects on minerals e.g. higher pH can reduce cobalt.

Requirements for trace elements change throughout the year depending on tugging, pregnancy, lambing and lactation. During winter, sheep are often adequately supplemented, but in summertime, sheep can often be lacking.

Clinical signs associated with trace element deficiency are often insidious in onset and usually present as poorly grown lambs during late summer.

There is considerable interplay between chronic parasitism, malnutrition and trace element deficiency.

The trace element deficiencies generally considered are Cobalt, Copper, Vitamin E and Selenium.

Cobalt (Pine)

This has an important role in the manufacture of B12 in rumen. It is most commonly seen in weaned lambs at pasture in late summer.



Clinical signs	Diagnosis	Treatment/Prevention
<ul style="list-style-type: none"> • Lethargy • Reduced appetite • Poor quality wool with an open fleece • Small in size and poor body condition • In severe cases – tear staining on cheeks, pale mucous membranes, nervous signs 	<ul style="list-style-type: none"> • Known cobalt deficient soils • Low plasma/liver B12 concentrates 	<ul style="list-style-type: none"> • Intramuscular injection of Vitamin B12 in clinically affected • Drenching with cobalt monthly, often in combination with an anthelmintic • Cobalt bolus

Copper Deficiency

Pastures can be low in copper or high in iron, molybdenum or sulphur. Lime application can also influence copper levels.

Clinical signs	Diagnosis	Treatment/Prevention
<ul style="list-style-type: none"> • Copper deficiency in mid-pregnancy leads to swayback in lambs • In growing lambs, it may result in poor fleece (steely wool), poor growth or anaemia 	<ul style="list-style-type: none"> • Liver samples from fallen stock, lambs at abattoir or liver biopsy are most reliable • Swayback in lambs based on clinical signs/post-mortem 	<ul style="list-style-type: none"> • Appropriate supplementation of ewe during mid-gestation • Injection or oral supplement often once annually is enough

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Copper Toxicity

This can be common in intensively managed sheep and can occur using more than one method of copper supplementation and use of feeds with high copper content in certain breeds of sheep such as Texel.

It can lead to liver copper storage increasing until critical levels are exceeded, resulting in haemolytic crisis. Precipitation of chronic copper toxicity can occur some days to weeks after removal of the copper source from the ration.

Stress can often be a trigger, linking to changes in weather, housing, transport, as well as advancing pregnancy.

Clinical signs	Diagnosis	Treatment
<ul style="list-style-type: none"> Severe gastroenteritis (colic signs, diarrhoea, dehydration) Depressed Anorexic Jaundice Dark red urine Death within 3 days 	<ul style="list-style-type: none"> History source of excess copper Post-mortem Bloods/ blood smears 	<ul style="list-style-type: none"> Rarely successful and euthanasia for welfare reason should be carefully considered

Selenium/Vitamin E

Deficiency in Selenium/Vitamin E causes white muscle disease or stiff lamb disease. It occurs in soil in certain geographic areas.

Vitamin E is high in green crops but falls under drought conditions. Certain root crops are low in Selenium and Vitamin E and grain treated with propionic acid may increase risk. Selenium and Vitamin E act as cellular antioxidants.

Clinical signs	Diagnosis	Treatment/Prevention
<ul style="list-style-type: none"> White muscle disease affects rapidly growing lambs from 2-6 weeks old Stiffness and unable to rise after a few days Stress (handling/ turnout) may precipitate outbreak Poor growth rates Reduced fertility Congenital still born lambs 	<ul style="list-style-type: none"> Clinical signs in lambs Often ram lambs of meat breeds (Suffolk/ Texel) Post-mortem Liver/kidney samples Blood samples 	<ul style="list-style-type: none"> Selenium injection to clinically affected In-feed medication during late gestation Periodic drenching in lambs is often done in combination with an anthelmintic and can last 1-3 months Bolus Selenium/ Vitamin E injection to new-born lambs Top dressing with Selenium

Iodine Deficiency

Can arise from primary lack in soil or more commonly secondary to goitrogens in leguminous crops which interfere with iodine metabolism.

Clinical signs	Diagnosis	Treatment/Prevention
<ul style="list-style-type: none"> Infertility Abortion Weak lambs with swollen thyroids (goitre) 	<ul style="list-style-type: none"> Post-mortem 	<ul style="list-style-type: none"> Oral potassium iodide Ewes drenched twice during pregnancy with potassium iodide

Mineral Audits

It's important to monitor your sheep closely for mineral consumption, measure the amounts they consumer and manage this for the future. Mineral Audits can be carried out by your vet.

They involve the following:

- **Farm visit**
 - * Mineral audit for different groups may be at different times e.g. pre lambing, pre breeding, weaning
 - * Consider all fields/water sources/forages and supplementary feeding
- **Review farm history**
 - * Previous diagnostics
- **Consider production target/KPI's**
 - * Productivity, fertility and growth rates
- **Diagnostics**
 - * Grazing platform/forage analysis/water analysis
 - * Supplementary feeding analysis
 - * Blood sample stock
 - * Ideally in autumn at end of grazing season
 - * Liver from fallen stock/abattoir to assess copper loading.

