# OBSERVATIONS ON RABBIT DISEASES IN TANZANIA

BY

W.D. SEMUGURUKA

FACULTY OF AGRICULTURE, FORESTRY AND VETERINARY SCIENCE

MOROGORO

UNIVERSITY OF DAR ES SALAAM



## INTRODUCTION

Though the keeping of rabbits in Tanzania is not yet widespread (on commercial basis), even then on those few frams and diagnostic laboratories that have kept rabbits, certain diseases, some causing great loss, have been observed. As more people get to keep rabbits, I think it worth highlighting some diseases that they are likely to encounter. The diseases so far experienced by us in this country may be the same as in other parts of Africa or be totally different.

It is not intended to give details of the diseases here in the short period allowed but rather give a summary of each disease under etiology (cause of the disease) clinical features and pathologic changes. Treatment and control are not given in this paper.

## PASTEURELLOSIS:

This is the group of diseases associated with members of the genus Pasteurella and in particular the species Pasteurella multocida (P. multocida). Apart from P. multocida as the major cause of pasteurollosis in the rabbit, another agent is P. pseudotuberculosis which causes the form of pasteurellosis called pseudotuberculosis.

The disease manifestations by P. multocida are varied and include snuffles (a form of rhinitis), pneumonia, pyometra orchitis, otitis media, conjunctivitis, subcutaneous abscesses and septicaemia. In our experience in this country, so far, we have observed snuffles (rhinitis), pneumonia and septicaemia.

Snuffles (rhinitis) results from the inflammation of the nasal and sinus mocous membranes (rhinitis) because of its invasion by P. multocida. These bacteria are sometimes resident on the mucosa of the nasal passages and only get the opportunity to invade the mucosa as a result of stress, e.g. high humidity, high temperature, pregnancy and even lactation stresses.

Rabbits can also acquire the bacteria in the inspired air or by direct contact with contaminated objects.

Clinically, snuffles is characterized by sneezing followed by nasal discharge which is initially catarrhal (freely flowing mucus-like material) but later thickens to look almost like pus. The rabbit will paw at its nostrils in an attempt to wipe away the exudate.

Depending on the invasiveness (virulence) of the bacteria and the susceptibility of the host, the infection in the nose may spread to the lower respiratory tract leading to bronchitis and pneumonia. Also infection can spread from the nose & sinuses to the eyes resulting in conjunctivitis.

P n e u m o n i a - This may arise from infection of the upper respiratory treat by P. multocida, with spread to lower respiratory tract; the disease may also arise as a primary infection of the lower respiratory tract as well as in the upper respiratory tract. Some debilitating influences precipitate the development of the lesions in the lower tract. Such influences can be high humidity, unsanitary housing, inadequate bedding and even drafty housing and presence of other diseases, for example coccidiosis.

Clinically, the rabbit with pasteurella pneumonia is depressed, has laboured breathing, nasal discharge and in the albino rabbit there may be bluish eye coloration (cyanosis). There may be pyrexia.

Mortality among rabbits from pneumonia can be up to 20% and among adult rabbits, pneumonia is an important cause of death. It has been observed by us as second to coccidiosis in the causation of death in rabbits in this country.

Pathologic changes in pasteurella pneumonia include red or purple areas of consolidation particularly in the anterior lung lobes and sometimes the anterior ventral portions of the diaphragmatic lobe.



There may be abscesses under tha lung capsule and sometimes there are adhesions between parietal and visceral pleura over the affected lung.

Other bacteria may cause pneumonia in rabbit, e.g. Klebsiella pneumoniae and Bordetella bronchiseptica and these bacteria have been isolated in connection with pneumonia in this country but only a few occassions.

Septicaemic pasteurellossis - This has on few occasions been observed and is characterized by hemorrhage on mocous and serous membranes. Death often occurs in about 36 hours from beginning of signs of disease. In this acute form of disease the bacteria are present in large numbers in blood and exudations.

Pathologic changes in septicaemic pasteurellossis are, grossly, those of hemorrhage (petechiae) and fluid (serofibrinous) exudations into body cavities. The hemorrhages are found on serous & mocous membranes; liver and spleen may be enlarged.

So far in this country, at least by my own experience, the other forms of pasteurellosis namely pyometra, orchitis, otitis media, conjunctivitis, have not been observed. However, with increase in rabbit keeping under variable management systems such disease conditions may too be observed.

Pseudotuberculosis - This is caused by Pasteurella pseudotuberculosis. We have on occassion come across this disease in rabbits. Clinical manifestations in this disease are anorexia, gradual loss of body condition and dyspnoea. The disease develops slowly and the rabbit dies after profound emaciation. Infection occurs through ingestion of contaminated feed and or water.

Pathologic changes observed include round white foci with central caseation and may be pin head to approximately 1 cm in size. These lesions are found mainly in the spleen, liver and sometimes lung and kidneys. They are tubercle-like lesions hence the name pseudotuberculosis.

C O C C I D I O S I S

This is an important diesease and we consider it number one in causation of mortalities particularly in young rabbits.

Both liver and intestinal forms of coccidiosis have been observed in this country; they seem to be equally important. Eimeria stiedie was found to be responsible for liver coccidiosis while intestinal form was caused by E. magna and E. irresidua with E. irresidua infection being the more prevalent.

The subject of coccidiosis has already been adequately covered by someone else and therefore I need not go into any details about the disease and only wish to reiterate that coccidiosis is the number one killer of rabbits (especially young ones) in this country.

The high incidence of coccidiosis in some rabbit colonies observed by us is probably related to management practices exisiting there. Management practices that encourage contamination of feed, water and the floor of the rabbit houses, will lead to high incidence of coccidiosis. Deep-litter type of floor for rabbit houses is likely to encourage and perpetuate coccidiosis.

E N T E R I T I S

This condition was observed in many young rabbits at the Central Veterinary Laboratory rabbit colonies and at first was thought to be a result of coccidiosis. Attempts to isolate the coccidial parasites or even observe them in the intestinal sections gave negative findings. It was obvious that there was enteritis. The cause of the disease was not clear but in some cases E. coli and other coliforms were isolated. However, probably certain feed and microbial factors interplay to cause this enteritis. This enteritis syndrome is similar to what has been named as Mucoid Enteritis in the U.S.A.

Clinical features in the affected rabbit are anorexia, lassitude and rough coat. There is diarrhoea as shown by soiling of the perinium and faeces may show clear viscid mucoid material.



At necropsy, the stomach and anterior part of the small intestine may contain fluid, gas and sometimes undigested food, the colon is filled with jelly-like mucoid material. Mucosa of the intestine and cecum may be reddened.

A few other bacterial disease we have encountered on few occassions are Salmonellosis, staphylococcosis and Colibacillosis.

Salmonellosis caused by Salmonella typhinurium was observed in rabbit colonies at the Central Veterinary Laboratory (CVL). S. typhinurium is a cause of paratyphoid in many animals including man and the infected rabbits, particularly those that cover and become carriers, are a source of infection for other animals.

A salmonella infections are difficult to get rid of even after treatment, the policy adopted at CVL has been to eliminate the whole unit from which the infected rabbit came from; this way spread to other units is minimized or cut off completely.

Staphylococcosis, caused by Staph. pyogenes has been observed in the form of abscesses. These we noted to arise as a result of contamination of fight wounds (mainly in males). The abscesses were seen on the trunk, lower jaws and scrotum. Similar abscesses were seen in heart and lungs probably as a result of spread from other affected parts of the body.

Apart from abscesses due to Staph. pyogenes, P. multocida and Pseudomonas aeroginosa have been isolated in connection with abscess in some rabbits.

Colibacillosis - observed in connection with scours especially in young rabbits.

M I S C E L L A N E O U S C O N D I T I O N S:

A few conditions which may lead to death or poor doing in the rabbit have on occassion been met with in Tanzania. Those met with are Cannibalism, Hairballs, Toxaemia.

TOXAEMIA, also known as ketosis, is most commonly noted in first litter females. The disease occurs in the last week of pregnancy and is more prevalent in the obase animals. The affected animal is sluggish, dull, shows repiratory distress and may die 1 - 4 days after onset of signs of disease. The liver is fatty and appears yellow and soft. For some reason there is loss of appetite leading to mobilisation of body fat for energy and formation of ketones which enter the blood stream. Injection of fluids containing glucose may reverse body fat breakdown.

CANNIBALISM

Many times young does kill and consume their young. The cause of this cannibalism is not exactly known but most cases are thought to be a result of diet which is inadequate either in quality or quantity or because of disturbing the does when giving birth. Proper feeding and seclusion at time of parturition will usually prevent this tendency. Does which destroy their litter should be destroyed unless the doe is very valuable in which case it can be given a second chance.

HAIRBALLS (WOOL EATING)

It is not unusual to find small amounts of hair in the stomach contents of rabbits and such a situation usually does not lead to impaction. However, sometimes several rabbits, because of deficiency of fibre (roughage) in their diet, may eat body fur, eyelashes or even whiskers. Single rabbits may eat fur on their sides, back and rump. Some hairballs may obstruct the stomach at pyloric end in which case the rabbit stops eating, loses weight and may die.

CONCLUSION:

Obviously other diseases of rabbits not mentioned above and occuring in other countries may have been observed by others in this country. I have only reported on those that I have come across and some that were received at the Central Veterinary Laboratory, Temeke, for disease diagnosis and or investigation. It is my opinion



that the more people go into rabbit keeping the more we are likely to come across a wide spectrum of rabbit diseases. Thus we should be on the lookout for these diseases.

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