

# INCIDENCE OF PASTEURELLOSIS (SNUFFLES) IN A RABBIT FARM

**N.Premalatha, K.Senthil Kumar<sup>1</sup>, V.Purushothaman<sup>2</sup>, G.Ravikumar<sup>3</sup> and B.Muralimanohar<sup>4</sup>**

Veterinary University Training and Research Centre.  
Melmaruvathur-603 319

**Key words:** Rabbits, Pasteurella, Snuffles.

Snuffles is a general term describing a group of upper respiratory disease symptoms common in rabbits. Among the potential causes, the bacterial infection such as *Pasteurella multocida*, *Bordetella bronchiseptica* and *Staphylococcus sp.* are more prevalent. It is highly contagious devastating respiratory tract disease which can also affect the eye, ear and other organs (Hillyer and Quensberry 2004). The disease can be transmitted by Direct and indirect contact mainly by aerosol infection. Snuffles in a rabbit farm with higher mortality was investigated to identify the underlying cause is herewith reported.

A rabbit farm at Choonambedu, Madurantakam block, Kancheepuram district had stock density of 120 rabbits in the age group of 6-8 months. It was reported that the 50 rabbits were ailing from anorexia, lying on lateral side and 28 died after 2-3 days. The unhygienic maintenance, with overcrowding was observed.

Post mortem was conducted on dead rabbits and ailing bunnies were also sacrificed. The heart blood smear, liver impression smear, swab from heart blood, nasopharyngeal swab were collected

aseptically and sent to Madras Veterinary College for investigations. Tissue samples such as heart, lungs, kidneys, liver and trachea were collected in 10% formalin and sent to Central University laboratory, Madhavaram for histopathological examination.

The heart blood swab were subjected for culture on blood agar was identified based on colony morphology, other biochemical tests. (Quinn *et al.*, 1994) and further confirmed by mouse inoculation test (Gokben Ozbey and Adile Muz, 2006). The primary culture were inoculated into tryptone soya broth and incubated at 37<sup>o</sup>C for 6 hrs. Mice were injected with 0.1 ml (1x10<sup>3</sup> CFU/ml ) of broth culture intraperitoneally.

The culture was subjected for antibiogram by agar diffusion method (Bauer and Kirby,1966.) The rabbits in the farm were treated with Enrofloxacin @200 mg / L in drinking water for 15 days along with liver tonics containing B-complex vitamins as supportive. The healthy rabbits were separated from the sick ones.

The observation of symptoms such as fever, watery to thick whitish yellow bilateral

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1. Assistant Professor, Centralised Clinical Laboratory, MVC, Chennai -7.

2. Director of Research, TANUVAS.

3. Associate Professor, Central University Laboratory, TANUVAS.

4. Director, DCAHS, TANUVAS.

nasal discharge, anorexia, unable to sit on sternum, lateral recumbency were simulating to the findings , reported by Hillyer and Quensberry (2004).The fluid and mucous accumulation in the trachea and lungs revealed snuffling sounds on auscultation and a morbidity rate of 35 – 40% with mortality of 23% was recorded.

The post mortem examination of rabbits revealed tracheal and splenic congestion, necrotic foci on liver and congestion, nodules on the periphery of lungs containing purulent material surrounded by a thick fibrinous sac and petechial haemorrhages on gastric mucosa. Similar lesions were also observed by Percy *et al.*, (1986) in rabbits experimentally inoculated with *Pasteurella multocida* strains.

The heart blood smear and liver impression smear stained with wrights stain revealed bipolar *Pasteurella multocida* organisms. The heart blood swab produced relatively large mucoid, non hemolytic colonies on the blood agar, the biochemical tests such as oxidase, catalase and indole production and presence of ornithine decarboxylase and carbohydrate fermentation with acid and no gas production was ascertained using glucose, galactose, sucrose, mannitol and sorbitol confirmed *Pasteurella multocida*. *Bordetella bronchiseptica* and *Staphylococcus* sp were unable to isolate from the clinical samples. Heart blood smear from dead mice were stained with Giemsa staining revealed the bipolar microorganisms. The heart blood was cultured on 10 % sheep blood agar and examined for the colony morphology of *Pasteurella multocida* and further identified by analysing biochemical tests.

The histopathological examination of heart and lungs showed congestion and edema no changes in kidney, tracheal lamina propria showed oedema with stray heterophils, lymphocytes, macrophages of the mucosal layer, liver exhibited congestion

of central vein & sinusoids with degenerative heterophils, infiltration of leukocytes & necrosis of hepatic cells and necrotic hepatitis.

The antibiogram of culture showed higher sensitivity to enrofloxacin followed by gentamycin, cephaloxime and tetracycline. The rabbits showed rapid recovery from the disease after treatment with enrofloxacin, it was opined with the finding of Rougier *et al.*, (2006) who reported that the microorganisms from the upper respiratory tract infection showed 100% susceptibility to enrofloxacin followed by gentamycin 99.1%, Tetracyclines 97.2% and Trimethoprim sulphamethaxazole 93.4%. Along with chemotherapy, the provision of better nourishment, hygienic management in the farm hastened the recovery of rabbits from snuffles. It was in agreement with the statement by Hillyer & Quensenberry ( 2004).

Eradication of the *Pasteurella* organisms is difficult because they occur as commensal in nasopharynx and digestive tract. Many infected rabbits remain clinically normal until they are stressed. It was advised to provide better ventilation and provision of adequate floor space ie 4-5 sqft/ adult rabbit and 1.5 sqft/bunny. Since effective vaccine has not developed so far for lagomorphs, strict culling is recommended to contain the disease in large rabbit farms.

The disease, Pasteurellosis in the Rabbit farm was diagnosed from clinical signs, cultural isolation and identification of the organisms, microscopic examination of the smears, biological tests by mice inoculation and histopathology of organs. Chemotherapy, reduction of stress by hygienic management in farm premises, provision of good nutrition, maintenance of adequate floor space, recovered the rabbits clinically from snuffles.

### ACKNOWLEDGEMENT

The authors gratefully acknowledge TANUVAS to carry out the study.

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