**Applicability of Antibiotic Sensitivity Test on Nasal Swabs Collected from Calves at Ridiyagama NLDB Dairy Farm - A Case Study.**

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Calves Pneumonia is a critical and widespread disease among calves which leads to losses in the dairy sector. Antibiotics are recommended for this disease, which leads to the development of resistance against the antibiotic, which harms human health. Predisposing factors should be identified to mitigate this condition. This study aimed to identify antibiotic sensitivity of calves’ pneumonic condition at Ridiyagama NLDB dairy farm and detect susceptibility of these isolates to ten commonly used antibiotics such as norfloxacin (NX 10mcg), enrofloxacin (EX 10mcg), streptomycin (S 25mcg), doxycycline hydrochloride (DO 30mcg), trimethoprim (TR 25mcg), nalidixic acid (NA 30mcg), ciprofloxacin (CIP 30mcg), ampicillin (AMP 10mcg), amoxicillin (AMX 30mcg) & tetracycline (TE 30mcg). Based on clinical observations, swabs samples (n = 10) were collected from an infected bull and heifer calves of 2 to 8 weeks. Swabbed samples were dipped in lactose agar broth media and then spread on prepared Muller Hinton Agar. Kirby Bauer disk diffusion method was conducted, and the inhibition zone's diameters were measured. It exhibited that two samples were resistant to all antibiotic types. There was an inhibition zone around the NX 10mcg disc. Of the 10 samples, only one had inhibition zones around all the antibiotic discs. All the other samples did not have an inhibition zone for TR 25mcg, AMP 10mcg, and AMX 30mcg and showed high resistance against those antibiotics. In conclusion, the causative microorganisms showed sensitivity to norfloxacin and ciprofloxacin and those can be used as a quick remedy to mitigate calves pneumonia at the NLDB dairy farm, Ridiyagama. The effectiveness of norfloxacin and ciprofloxacin and their combinations with other antibiotics should be further investigated to get the best results.

**Keywords**: *antibiotic resistance, antibiotic sensitivity test, antibiotics, calf pneumonia*