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Seasonal occurrence of bovine mastitis causing organisms from grazing land of western Ghats, India

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Introduction Mastitis is an inflammatory condition of the udder characterized by physical, chemical and microbiological changes in the milk; pathological changes in the milk include changes of colour, consistency and presence of abnormally large numbers of leucocytes. A variety of bacterial, viral and fungal species are associated with the inflammatory condition. Some important bacterial species associated with mastitis are *Streptococcus agalactiae*, *Staphylococcus aureus*. The high seasonal prevalence of Bovine Mastitis Causing Organism from Grazing Land of Western Ghats during summer was mainly due to the rough grazing. The present study focuses on the occurrence of *Streptococcus agalactiae* and antagonist *Pseudomonas* spp in the grazing zone.

Materials and methods Four soil samples were collected each month in sterile plastic bags from various places of the grazing land and rain forest zone of the Western Ghats (Lat. 10°12'N, Long 77°30'E) in different season (January–December) Tamil Nadu, India. The soil samples were saturated with sterile distilled water and serially diluted and plated onto selective and differential media. These plates were incubated at 37°C for 24 hrs, and isolates were identified using standard biochemical tests (Bergeys manual of systematic bacteriology). Antagonistic properties among the isolates were identified by crowded plate technique.

Result Eight different isolates were identified in the grazing zone and rain forest zone, *E. coli*, *Streptococcus lactis*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Proteus vulgaris*, *Bacillus* spp, *Enterobacter* spp, *Citrobacter freundii*. The major causative agent, *Streptococcus agalactiae*, for mastitis isolated from the grazing zone during the months of April–May which were found to be completely absent in the rain forest zone. We also found the occurrence of antagonistic *Pseudomonas* spp against *Streptococcus agalactiae* in the grazing zone. The above mentioned isolates failed in antagonistic effect.

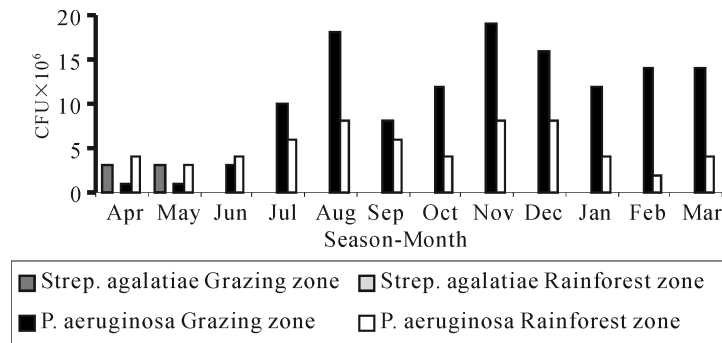


Figure 1 Seasonal distribution of *Streptococcus agalactiae* and *Pseudomonas aeruginosa*.

Discussion *Streptococcus agalactiae* is an obligate parasite of the bovine mammary gland which can also survive to a limited extent in the environment. These invade and multiply in the lactiferous duct. The seasonal incidences of the disease suggest that an increased disease pattern in summer. The transmission, colonization and infection are more severe during summer (due to rough grazing), and this leads to damage of the teats. This plays a significant role in the occurrence of *Streptococcus agalactiae* in that the seasonal condition favors the active transmission of the organisms to the host, resulting in mastitis. Spraying pseudomonas culture in a grazing zone can be a remedial measure to control the occurrence of *Streptococcus agalactiae*.

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