

# First Joint Meeting Brazil Italy of Mathematics Special Session: Population Dynamics and Evolution

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**Title:** Dynamics of *Corynebacterium bovis* intramammary infections during a mastitis control program

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**Abstract:** A mathematical model is used to estimate transmission rates of *Corynebacterium bovis* in a dairy herd. In underdeveloped countries the prevalence of this bacteria can rise 30% of all subclinical cases, and understand its temporal and spatial transmission dynamics is crucial for herd management. A sensitivity analysis shows that infected individuals are the target for control program. Also, we obtained that recovered individuals are more susceptible to the disease. Disease prevalence diminished from 7 to 1% after twelve months of management practices that comprised, for example, pre- and pos- milking teat disinfection, culling of individuals infected with major mastitis pathogens, and improvement of stall design and bedding management.