

REVIEWER'S REPORT

Manuscript No.: IJAR-57142

Title: The Impact of Vaccination on the Dynamics of Paratuberculosis Transmission in Guinea

Recommendation:

Accept as it is

Accept after minor revision...

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		Good		
Techn. Quality		Good		
Clarity	Excellent			
Significance	Excellent			

Reviewer's ID: Dr. Sumathi

Detailed Reviewer's Report

1. Johnes disease (MAP) is highly contagious and stealthy, spreading slowly through fecal-oral transmission, contaminated milk, colostrum, or in-utero. It primarily infects calves under 6 months old, but symptoms take years to appear. For every cow showing signs, 10-25 others are likely infected, making herd management difficult.
2. Johne's disease in cattle is a chronic, incurable, and fatal bacterial infection caused by *Mycobacterium avium subspecies paratuberculosis* (MAP). There are no approved medical treatments in the US; management focuses on testing and strict culling of infected animals to prevent further herd transmission.
3. A mathematical model is a simplified, abstract representation of a real-world system or phenomenon using mathematical language—equations, formulas, or graphs—to understand, explain, or predict behavior. These models are constructed through an iterative process of making assumptions, formulating equations, solving them, and validating results against empirical data.
4. A mathematical model is defined as a representation that approximates an application using mathematical expressions, which

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may include linear or nonlinear equations, and is constructed based on practical observations to correlate cause and effect.

5. Vaccines are a premier global health success, preventing 3.5 to 5 million deaths annually by building immunity against 30+ diseases. They save ~6 million lives yearly globally, drastically reducing infectious disease morbidity and providing massive economic benefits. They foster herd immunity, prevent cancers, and curb antibiotic resistance.
6. Since vaccines were introduced in the UK, diseases like smallpox, polio and tetanus that used to kill or disable millions of people are either gone or are now very rarely seen. Other diseases like measles and diphtheria have reduced to a very low number of cases each year since vaccines were introduced.
7. Vaccine side effects are common, mild signs that the body is building protection, typically lasting 1–3 days. Common reactions include soreness at the injection site, fever, fatigue, muscle aches, and headache. Serious adverse events, such as severe allergic reactions , are extremely rare, occurring in about 1–2 per million doses.
8. Paratuberculosis (Johne's disease), caused (MAP), is a chronic, progressive, and fatal enteritis in ruminants, primarily transmitted fecal-orally. The disease dynamics involve long incubation periods where host macrophages harbor the bacteria, typically leading to lifelong infection, weight loss, diarrhea, and significant dairy industry losses due to reduced milk yield.
9. Key words can be given more.
10. Significant points are given.
11. Summary points can be added.
12. References should be in alphabetical order.
13. After a small corrections good to publish in your journal.