

# **New Information on the Importance of Biosecurity at the Poultry Farm**

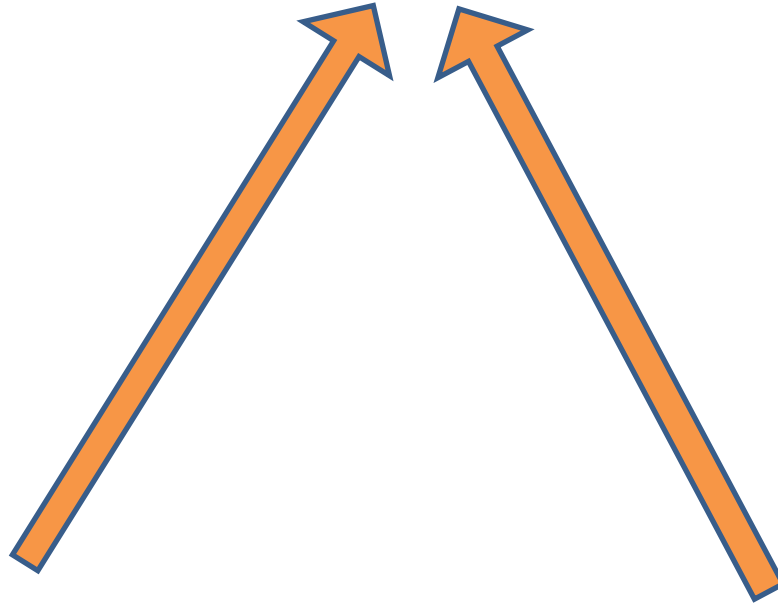
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# BIOSECURITY

**Disease**

**Limitations of  
Vaccination**

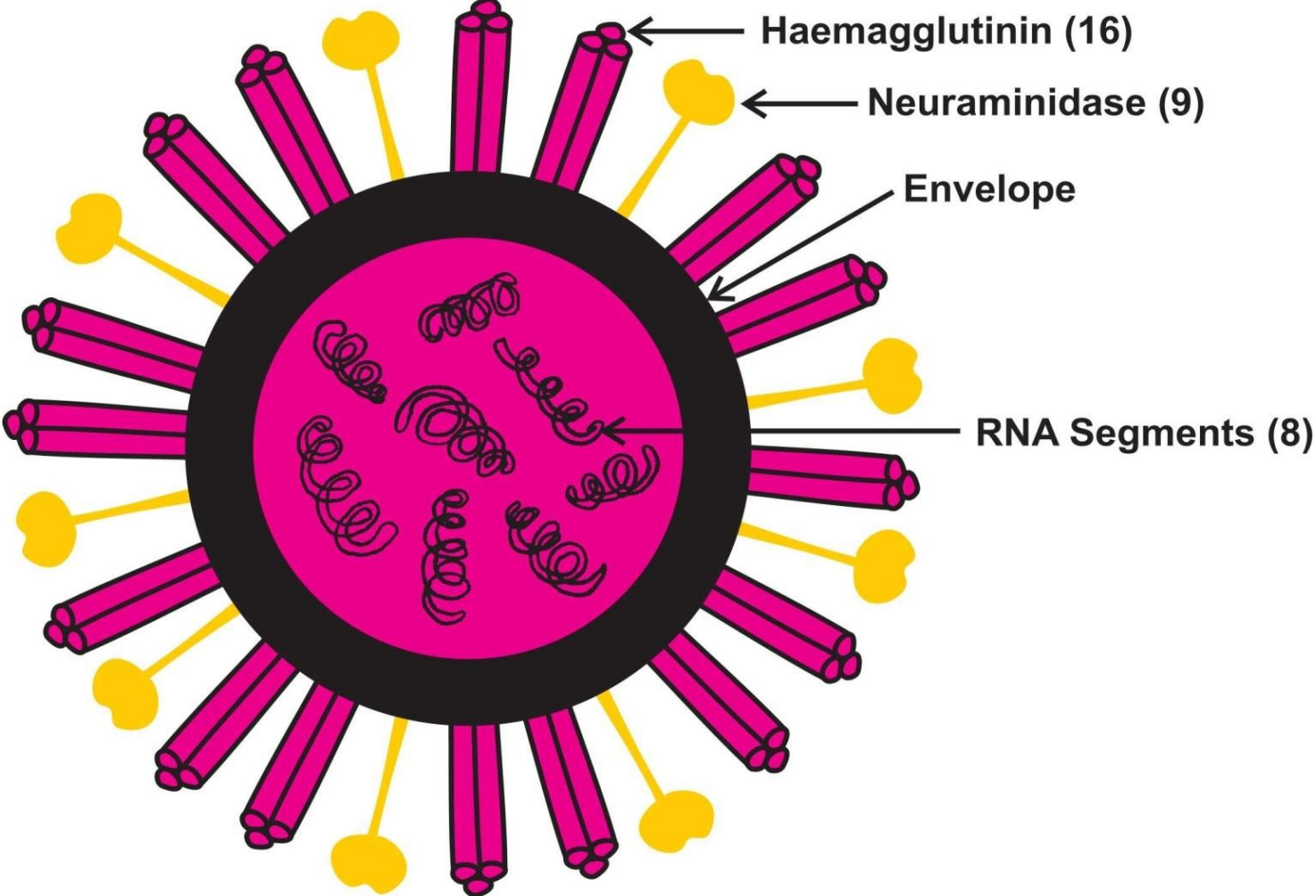


# **Doubling Time of Bacteria**

**1. Bacteria - Doubling Time - 50 minutes  
In 24 hours - 500 millions (50 crores)**

**2. *E. coli* - Doubling Time - 20 minutes  
In 9.5 hours - 500 millions (50 crores)**

**3. *Clostridium perfringens* - Doubling Time 7 minutes  
In 3.5 hours – 500 millions (50 crores)**



3' - ATGCTGTTA - 5'

5' - TACGG



**G** is wrongly incorporated opposite **T**

3' - ATGCTGTTA - 5'

5' - TACG**G**



**G** is removed by proofreading enzyme exonuclease

3' - ATGCTGTTA - 5'

5' - TAC**G**A



**A** is incorporated as a correct base

**Fig. 2. Proofreading mechanism in a virus**

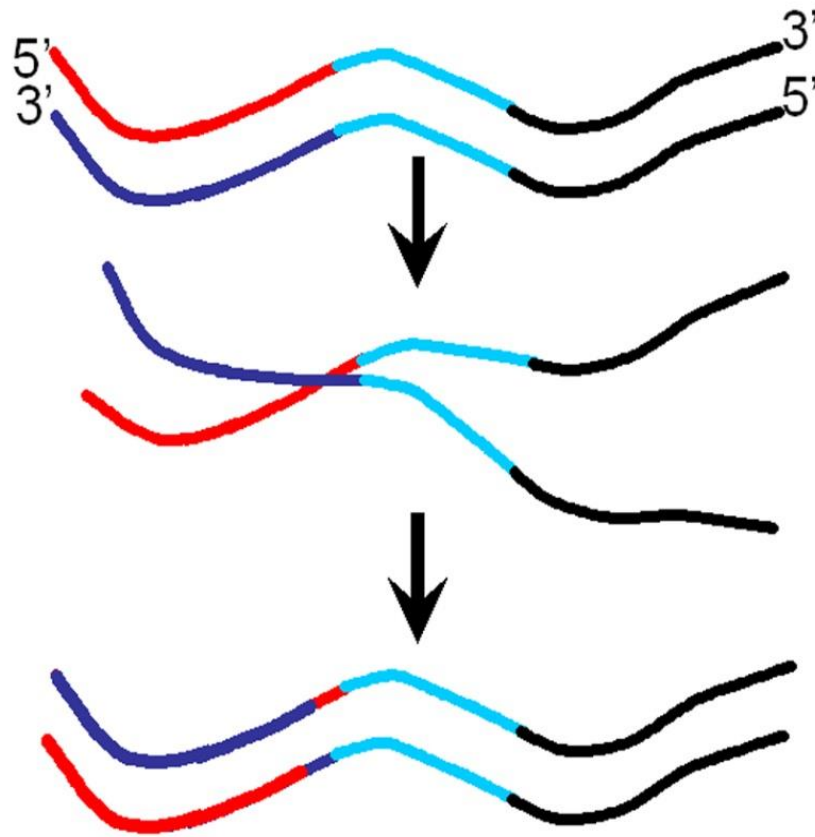


Figure 3. Mechanism of recombination on nucleic acid strands

# Attachment Organelle



Cytadhesin protein Gap A  
Accessory protein Crm  
Ciliostasis

# Phenotypic on-and-off Switching (Immune evasion)

***M. gallisepticum* has an inherent mechanism for making rapid and sudden changes in the expression of its surface proteins in response to antibodies.**



**Phenotypic on-and-off Switching (Immune evasion)** This is a very complex mechanism in which the organism changes its surface antigens. It is due to phase variable expression in the two MG genes pMGA and pvA which encode major surface proteins p52 and p67 (pMGA). These changes allow the mycoplasma to escape host's immune responses. The organism therefore persists even in the presence of systemic and local antibody (carrier state).

Thank you