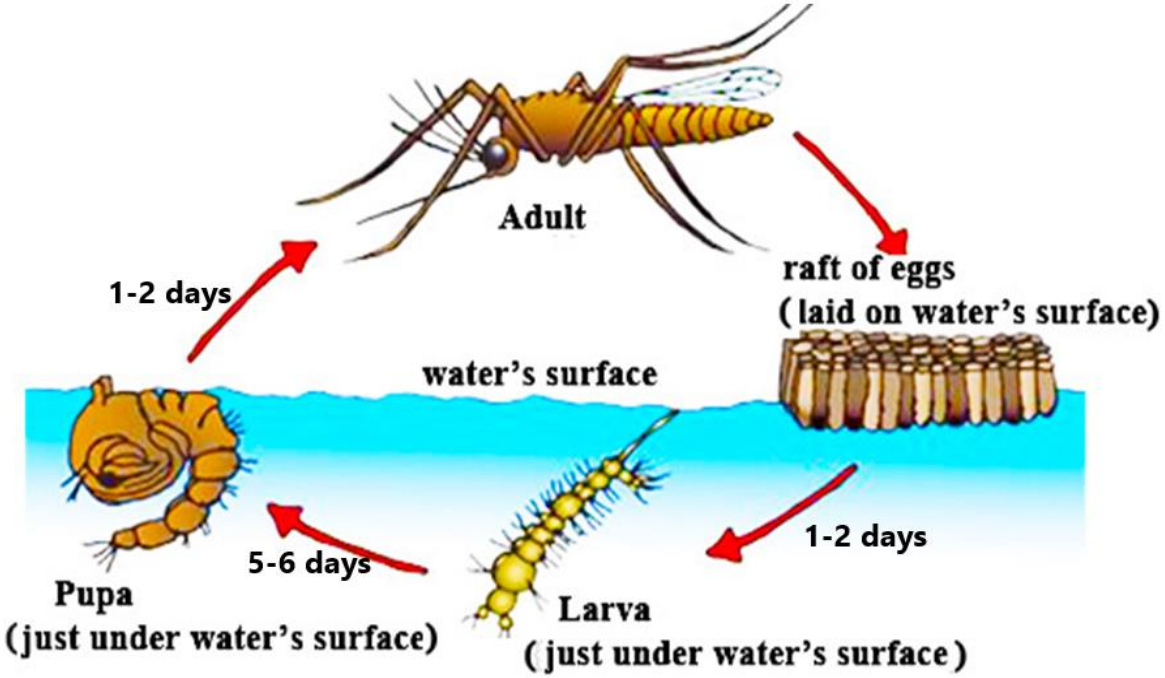
Culex Mosquito life cycle

***Culicine* mosquitoes are responsible for transmission of Lymphatic filariasis and Japanese encephalitis**

Vectors & Diseases

***Culex quinquefasciatus* : Lymphatic Filariasis**

***Culex tritaeniorhynchus, Cx. vishnui* and *Cx. pseudovishnui*: Japanese Encephalitis**



Vectors

Culex quinquefasciatus

Culex tritaeniorhynchus

- **A female *Culex* mosquito lays eggs in the form a raft of 100 to 300 eggs**
- **The *Culex* mosquitoes have 4 life stages: egg, larva, pupa and adult**
- **The entire life cycle, from an egg to an adult, takes approximately 7-10 days**

JAPANESE ENCEPHALITIS

Japanese Encephalitis (JE) is a viral disease. It is transmitted by infective bites of female mosquitoes mainly belonging to *Culex tritaeniorhynchus, Culex vishnui* and *Culex pseudovishnui* group. JE virus is primarily zoonotic in its natural cycle and man is an accidental host.

VECTORS

Culicine mosquitoes mainly *Culex vishnui* group (*Culex tritaeniorhynchus, Culex vishnui* and *Culex pseudovishnui*) are the chief vectors of JE in different parts of India. These vectors are primarily outdoor resting in vegetation and other shaded places but in summer may also rest in indoors.

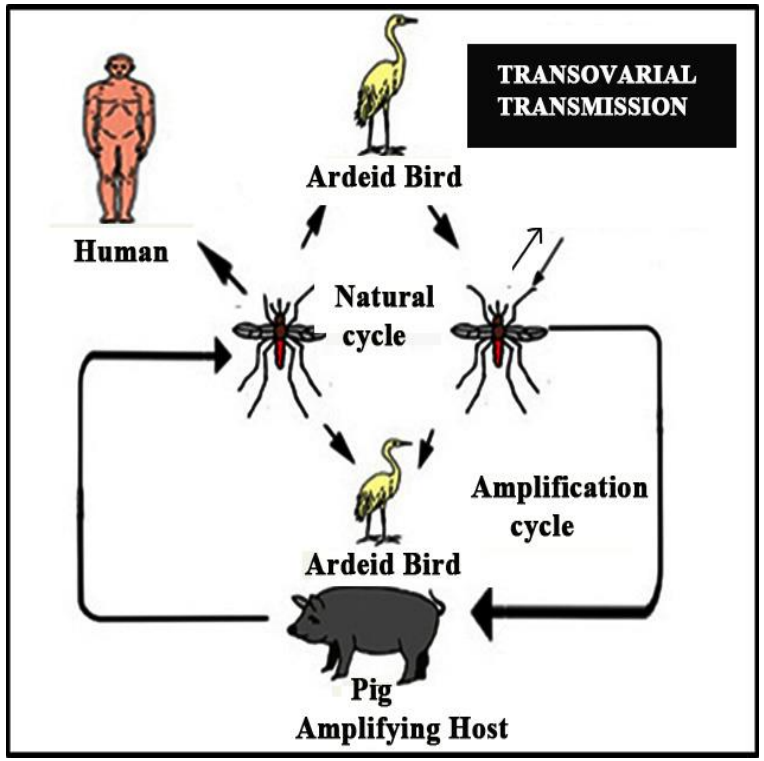
They are in principally cattle feeders, though human and pig feeding are also recorded in some areas.

SIGNS AND SYMPTOMS

JE virus infection may result in febrile illness of variable severity associated with neurological symptoms ranging from headache to meningitis or encephalitis. Symptoms can include headache, fever, meningeal signs, stupor, disorientation, coma, tremors, paralysis (generalized), hypertonia, loss of coordination, etc.

NATURAL CYCLE & TRANSMISSION OF JEV

Natural hosts of JE virus include water birds of Ardeidae family (mainly pond herons and cattle egrets). Pigs play an important role in the natural cycle and serve as an amplifier host since they allow manifold virus multiplication without suffering from disease and maintain prolonged viraemia. Due to prolonged viraemia, mosquitoes get opportunity to pick up infection from pigs easily.



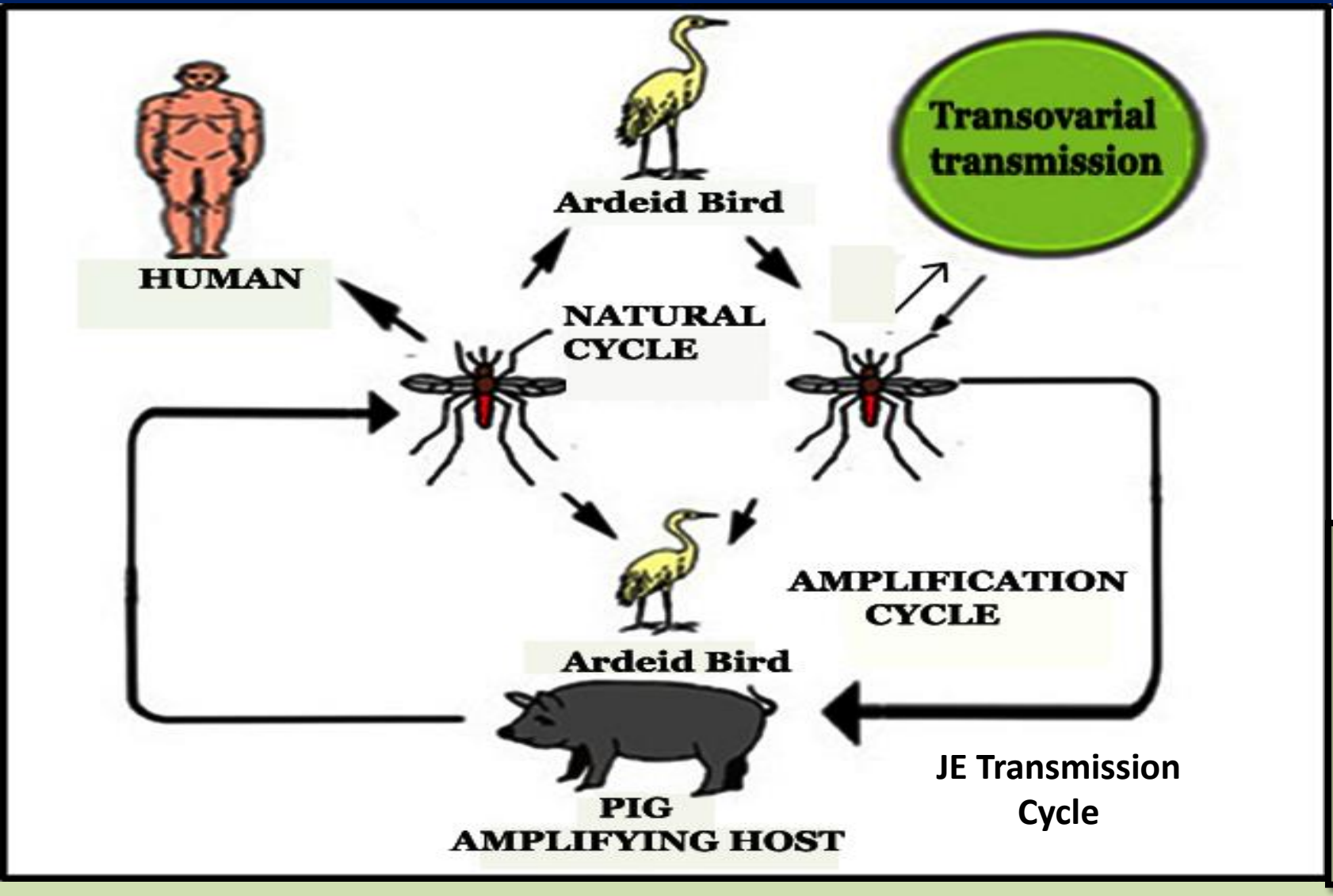
JE VIRUS STRUCTURE

Culex tritaeniorhynchus

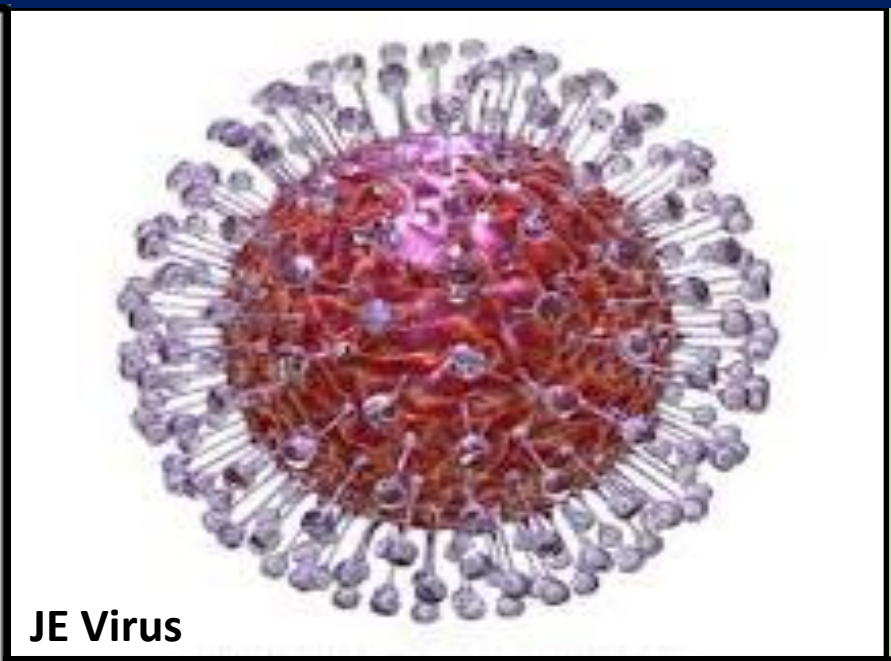
Culex vishnui

National Environmental Engineering Research Institute
Nehru Marg, Nagpur, Maharashtra-440020

Transmission of Japanese Encephalitis (JE)



JE Transmission Cycle



JE Virus

JE Vector

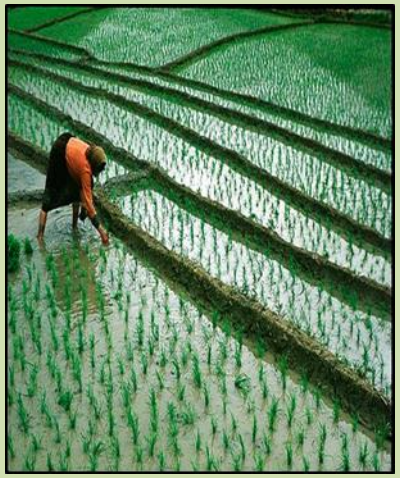
National Environmental Engineering Research Institute
Nehru Marg, Nagpur, Maharashtra-440020

Japanese Encephalitis (JE)

Infection of the Central Nervous System (CNS) caused by a virus (*Flavivirus*) transmitted to human beings by infected mosquitoes

JE Vector

Breeding sites of JE Vector



Rice field

Shallow Ditches at Field

JE Vectors: JEV is transmitted to human beings by bites of infected Culicine mosquitoes; mainly of *Culex vishnui* group *(Culex tritaeniorhynchus, Culex vishnui* and *Culex pseudovishnui).*

Amplifying host