

Name: _____

Wolbachia & Reproductive Parasitism

40%	reproductive	rescue	mosquito
heartworm	Zika	parthenogenesis	mutualists
maternally	filarial	mitochondria	genotype
antibiotics	phenotype	eukaryotic	sterile insect technique
endosymbiont	feminization	modifies	male-killing
population replacement strategy		cytoplasmic incompatibility	

Use the word bank to complete the statements below.

1. *Wolbachia* is an obligate, intracellular _____. It lives within the cells of its _____ host.
2. *Wolbachia* infects approximately _____ of all arthropods.
3. *Wolbachia* resides in _____ tissues, such as ovaries and testes.
4. Like _____, *Wolbachia* is _____-transmitted.
5. *Wolbachia* infections can be treated with _____.
6. _____ is the genetic code (DNA) responsible for a particular trait whereas _____ is the visible or expressed trait.
7. *Wolbachia* induces four reproductive phenotypes:
 - _____: Males die during embryogenesis.
 - _____: Females reproduce asexually.
 - _____: Genetic males develop as phenotypic females.
 - _____: *Wolbachia*-infected males can successfully mate with only females harboring the same infection.
8. In cytoplasmic incompatibility, *Wolbachia* _____ the sperm. Only a female with the same *Wolbachia* infection can _____ the incompatibility.
9. Some strains of *Wolbachia* inhibit the transmission of _____-borne diseases, such as _____, dengue, and chikungunya virus.
10. In _____, *Wolbachia*-infected male mosquitoes are released to crash a local population.
11. In _____, *Wolbachia*-infected mosquitoes are released to rapidly replace the population with mosquitoes that are unable to transmit human viruses.

Extension: Beyond arthropods, *Wolbachia* also infect _____ nematodes. Here, they act as _____ and are required for successful host development and reproduction. Therefore, a veterinarian might treat _____ with antibiotics to target the resident *Wolbachia* infection. Understanding this host-microbe symbiosis is critical for treating human diseases such as elephantiasis and river blindness.