



# Smart Mosquito Surveillance System

[Source: IE](#)

In a tech-driven public health initiative, Andhra Pradesh has launched the **Smart Mosquito Surveillance System (SMoSS)** to monitor and control mosquito populations.

- SMoSS uses [Artificial Intelligence \(AI\)](#)-powered sensors, drones, and [IoT \(Internet of Things\)](#) devices to detect mosquito species, gender, population density, and weather conditions.
  - Real-time alerts are triggered when mosquito levels exceed safe limits, enabling targeted spraying and fogging instead of ineffective blind spraying.
  - Drones are used for cost-effective **larvicide spraying**, while a central dashboard ensures live monitoring and quick response. The system will be managed by specialised agencies with accountability tracked via mobile apps.
- **Common Mosquito-Borne Disease:**
  - **Zika Virus Disease:** [Zika](#) is a viral infection primarily spread by the Aedes aegypti mosquito.
    - It can lead to Microcephaly and other birth defects in babies born to infected pregnant women.
  - **Dengue:** Caused by the [dengue](#) virus and spread by Aedes mosquitoes, it has four serotypes (DEN-1, DEN-2, DEN-3, DEN-4). Symptoms include high fever, severe headaches, pain behind the eyes, and intense joint and muscle pain.
    - Diagnosis is through blood tests, but there is no specific treatment for dengue.
    - India continues to bear a heavy dengue burden over 2.3 lakh cases and 297 deaths in 2024.
  - **Yellow Fever:** A viral hemorrhagic disease caused by the Aedes aegypti mosquito.
    - It can lead to jaundice, organ failure, or death in severe cases. Around 30,000 deaths are reported annually.
    - The term "[yellow](#)" comes from the jaundice (yellowing of skin/eyes) some patients experience.
    - Yellow fever vaccine which is known as 17D and according to the World Health Organization (WHO) also it is safe and affordable.
  - **Chikungunya:** A viral disease spread by Aedes aegypti mosquitoes, it is characterised by sudden fever and intense joint pain. There is no specific treatment for chikungunya.

<u>Vector</u>		<u>Disease caused</u>	<u>Type of pathogen</u>
Mosquito	<i>Aedes</i>	Chikungunya	Virus
		Dengue	Virus
		Lymphatic filariasis	Parasite
		Rift Valley fever	Virus
		Yellow Fever	Virus
		Zika	Virus
	<i>Anopheles</i>	Lymphatic filariasis	Parasite
		Malaria	Parasite
		O'nyong'nyong virus	Virus
	<i>Culex</i>	Japanese encephalitis	Virus
		Lymphatic filariasis	Parasite
		West Nile fever	Virus

**Read more:** [Genetically Modified Mosquitoes to Fight Against Malaria](#)

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