ICAO

Presentation Title: Disinsection in Aviation
Nairobi, Kenya

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Outline

- Why disinsection matters
- International and regional regulatory framework
- Disinsection methods – aircraft & ground
- Vector control and active management
- Vectors
- Vector borne diseases
- Implementation procedures & documentation
- Safety, health and environmental considerations
- Case studies from African airports
- Recommended SOP template
- Future trends and the role of CAPSCA
- Q&A

What is Disinsection

- Definition: The application of insecticides to aircraft to prevent the spread of vector-borne diseases.
- Primary goal: Protect public health and comply with international health regulations.

Why It Matters

- High biodiversity → many disease vectors (e.g., Aedes, Anopheles).
- Growing air traffic increases the risk of pathogen importation.
- Regional outbreaks (e.g., dengue, yellow fever) underscore the need for robust measures.

Regulatory Framework

Global

- ICAO Annex 6 – “Operation of Aircraft” (Standard 6.2.2).
- IATA Operational Safety Manual – “Disinsection” chapter.
- WHO International Health Regulations (2005) – requirement for vector control on international flights.

Regional & National

- AFI (Africa-Indian Ocean) Regional Aviation Safety Plan – includes disinsection guidelines.-
- CAPSCA Africa – collaborative platform for harmonised procedures.- National Civil Aviation Authorities (e.g., CAAZ)
- local implementation rules.

Disinsection Methods

Aircraft-Based

Aerosol (spray) – “cabin fog”
Applied while passengers are onboard (pre-departure).

Residual spray
Applied to interior surfaces after clean

Disinsection Methods

Ground-Based

Aircraft interior treatment (after de-planing)

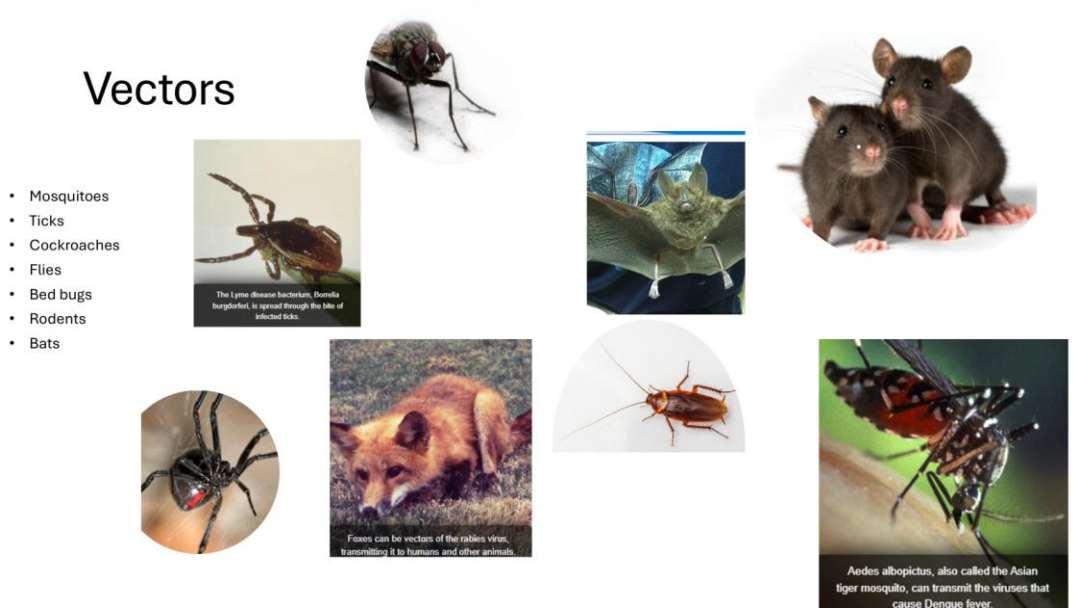
Cargo hold treatment
(for live animals, perishables).

Airport perimeter control (e.g., larvicidal treatment of standing water).

Vector control and active management

- Environment sanitation
- Routine capacitation and strengthening as stated in IHR tool
- Control breeding - genetic controls - larval and adult bioassay kits
- Glue traps, electronic rat traps, rodent guards from invading ships
- Baiting traps for cockroaches
- Quick knockdown if necessary
- Attention shifted towards use of insecticides to non-chemical methods
- Vector surveillance and control infrastructure fully developed, human resources trained, laboratory and filed formats developed, field tested and refined after pilot scale testing, field operations are initiated, adequate PPE stocked, and supply chain established
- PoE IHR designation and implementation of IHR core capacities at PoE, CAPSCA-Airport Vector Control Register
- Impact assessment, preparedness for emergencies

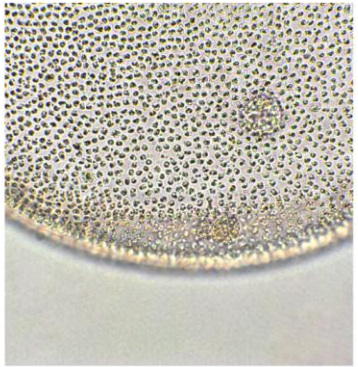
Vectors


Vectors
Mosquitoes
Ticks
Cockroaches
Flies
Bed bugs
Rodents
Bats
The Lyme disease bacterium, Borrelia burgdorferi, is spread through the bite of infected ticks.
Foxes can be vectors of the rabies virus, transmitting it to humans and other animals.
Aedes albopictus, also called the Asian tiger mosquito, can transmit the viruses that cause Dengue fever.

Vector borne diseases

Vector-borne diseases

- They are infectious diseases that are transmitted by organisms that include insects, snail, or rodents
- Examples of diseases are malaria, dengue, lymphatic filariasis, Japanese encephalitis, leishmaniasis, plague, schistosomiasis, mpox, trypanosomiasis and can cause morbidity or mortality
- Industry interruptions - cause loss of productivity/business – COVID-19, Mpox
- Bats and rodents (human-animal interface-zoonotic)



Implementation Procedures

Pre-Flight Checklist

Item Responsibility Status
Verify aircraft type & approved chemicals

Flight crew / Ground ops
Confirm passenger load & special categories (e.g., infants)

Cabin crew
Complete “Disinsection Declaration” form

Flight crew
Apply chosen method per SOP Ground crew / Cabin crew

Documentation & Record Keeping

Disinsection Declaration (ICAO Form 2020).

Chemical usage log (type, quantity, batch number).

Training certificates for crew and ground staff.

Audit trail – retained for 12 months (or as per national law).

Safety & Health Considerations

Use only WHO and Aircraft manufacturer approved insecticides
Ensure proper ventilation during and after application.

Provide passenger information (e.g., signage, announcements).

Monitor crew exposure – health surveillance program.

Environmental Considerations

Select low-toxicity formulations that break down quickly.

Follow hazardous waste disposal protocols for empty containers.

Conduct environmental impact assessments for airport wide vector control programs.

Case Study

Successful Disinsection at [Airport Name]

Challenge: High incidence of Aedes breeding near the terminal.

Solution: Implemented a combined aircraft aerosol + perimeter larvicidal program.

Outcome: 90 % reduction in mosquito counts; zero non-compliance findings during ICAO audit.

Recommended SOP Template (Overview)

1. Purpose & Scope
2. Responsibilities (Airline, Ground Handler, Airport Authority)
3. Materials & Equipment (approved chemicals, PPE)
4. Procedure – step-by-step for each method
5. Documentation – forms, logs, sign-off
6. Training & Competency
7. Emergency & Spill Response8. Review & Continuous Improvement

Future Outlook & CAPSCA's Role

Harmonisation of disinsection standards across the AFI region.

Research into non-chemical alternatives (UV, plasma).

Capacity building – training workshops, e-learning modules.

Data sharing – establishing a regional database of disinsection incidents.

Conclusion

Disinsection is a critical public health measure for aviation.

Compliance with ICAO/WHO standards protects passengers, crew, and the broader community.

Collaborative efforts through CAPSCA enhance safety and facilitate trade.

Q&A

- Share experiences?

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