Session 22:

RESISTANCE MONITORING AND PRACTICAL
By the end of this session, you will be able to:

- Describe insecticide resistance and why it occurs
- Explain how WHO susceptibility bioassays are conducted.
• Reduction in the ability of an insecticide product to kill mosquitoes
• Three primary mechanisms:
  – Metabolic resistance
  – Target-site resistance
  – Behavioral resistance
• To detect presence of insecticide resistant individuals in a mosquito population
• To assess the level of the resistance
• To gain insight into possible metabolic resistance mechanisms
• **Bioassay** – testing of the biological effectiveness of a treatment by deliberately exposing insects to the treatment

• **Synergist** – chemical that enhances effectiveness of an active agent

• **PBO** – piperonyl butoxide, man-made pesticide synergist, inhibits oxidases
• **Knockdown (KD):** # of mosquitoes not able to stand and/or rest, fly in a coordinated manner, or take off but falls down immediately at 1 hour following exposure to the insecticide impregnated paper.

• **Mortality:** Percentage of mosquitoes that show no signs of life, are immobile or cannot stand at the end of the 24 hour holding period.

• **Exposure time:** Time mosquitoes are exposed to the impregnated paper. Typically, the exposure time is equal to 1 hour.