

# **Vector Resistance to insecticides in Africa**

Courtesy:

**Professeur Martin AKOGBETO**

West Africa Coordinator for ANVR

# Interventions for Malaria Control

- Early diagnosis and effective case management
- Prevention
  - Vector control
    - IRS
    - LLINs
    - Other locally appropriate methods
  - Intermittent Preventive Treatment

# African Network on Vector Resistance: ANVR

- Created: Decembre 2003 by AFRO

Coordinator at AFRO

Sub-coordinators:

Central, West, East & South Africa

# What is Resistance

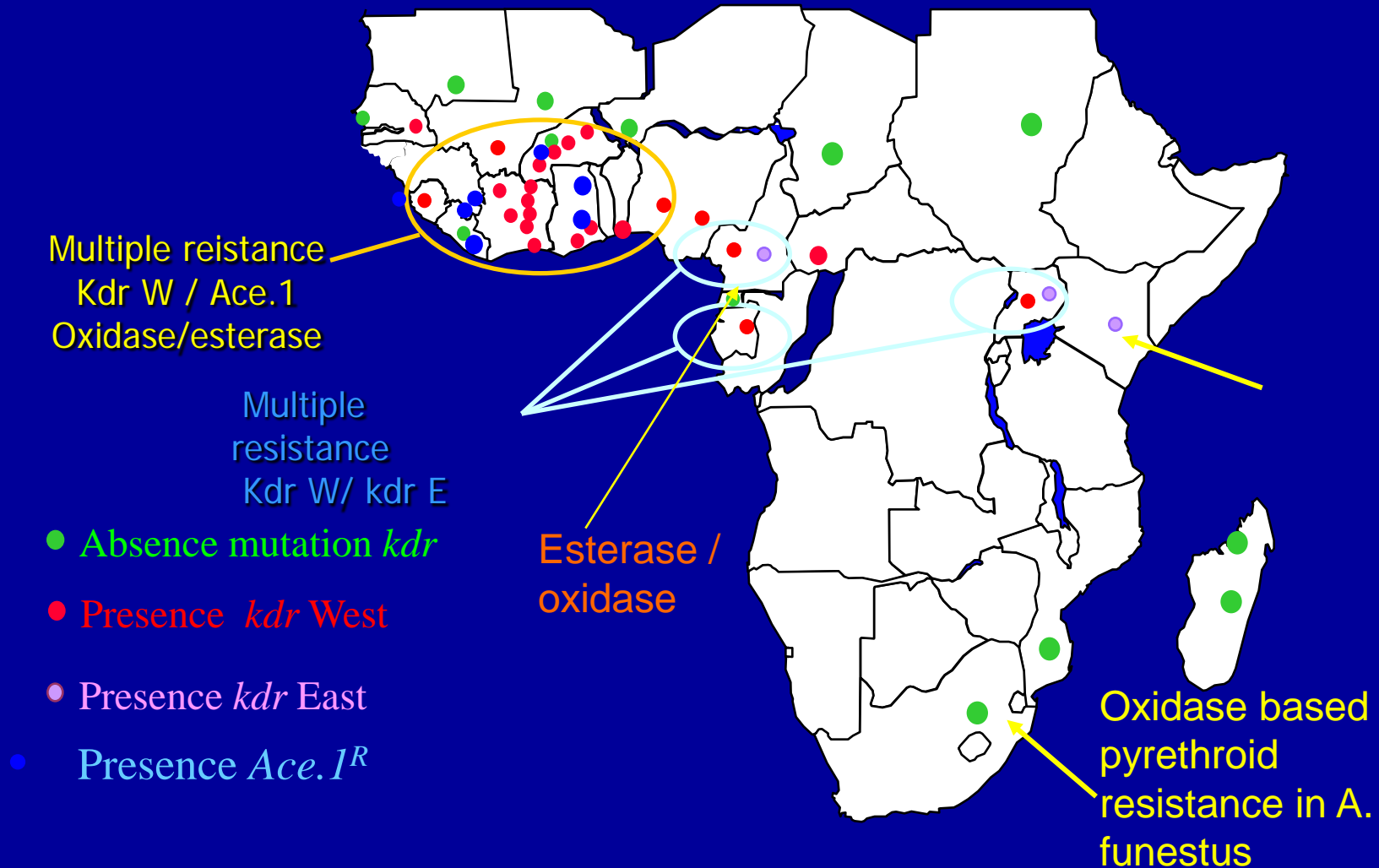
- The ability of a vector to survive an adequate dose of insecticide that normally cause its death when the insecticide come into contact with the vector and penetrate the cavity reaching the reception site

# MECHANISMS OF RESISTANCE

- **Modification of vector behaviour**
- **Modification of rate of absorption or excretion of the insecticide**
- **Modification of reception site by mutation**
- **Metabolic changes**
  - **Esterases**
  - **Mono-oxygenases**
  - **Glutathion-S-transferases**

	Métabolique			Récepteur cible		
	Estérasases	Mono-oxygénases	Glutathion-S-transférases	<i>Kdr</i>	<i>ace-1<sup>R</sup></i>	<i>GABA</i>
Pyréthroïdes		●	●	●		
DDT		●	●	●		
Carbamates	●	●	●		●	
Organophosphorés	●	●	●		●	
Cyclodiennes						●
Avermectines						●

# Distribution of resistance in *Anopheles gambiae*



# What is the problem of vector resistance?

It threatens the strategy of individual protection

**Pyrethroides: It is the only class of insecticide used for the treatment of bednets**