

Control and Elimination of Swine Diseases

DL Hank Harris

Professor, Iowa State University

CEO and Founder, Harrisvaccines, Inc.

Disease Control and/or Elimination

- Causative agent discovery and elimination
 - Define etiology and characterize it
- Multisite Pig Production
 - Isolate young piglets from the adults at weaning
- Rapid response vaccines
 - Mutating viruses
 - New disease causing agents

Causative Agents

- Continual emergence of new agents or re-emergence of agents
- Characterize the agents
 - Diagnostics
 - Vaccines
 - Treatments
- Epidemiology
 - Control strategies

Multisite Pig Production

- Eliminate economically important diseases
- Used by traditional and integrated producers world-wide
 - Expand existing facilities
 - New sites
- Increases profitability from 3.7 to 10.4 Euro per pig (reduce COP \$24 per pig)
- Used by over 60% of integrators in US

Rapid Response Vaccines

- Obtain gene sequence directly from the farm to prepare the vaccine
- Create vaccines within 4 weeks
- Never utilize live virus or bacteria
- Identical manufacturing process for each disease
- DIVA – Differentiate Infected from Vaccinated Animals

Obstacles

- Research funding for agent discovery
- Multisite
 - Location of facilities
 - All-in; All-out management
 - Biosecurity
- Rapid Response Vaccines
 - Regulatory approval
 - Intellectual property