CURRENT POULTRY DRUGS AND CHALLENGES IN KENYA

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POULTRY POPULATION IN KENYA

• 31,827,529
• Indigenous chickens 80%
• Exotic chickens 18%
• Other species 2%

Source: 2009 Census

[64,000,000 KPBA estimates in 2013:
Local 40, Broilers 14 and 10 million Layers]

• The production of poultry meat surpassed 45,000 metric tonnes in 2013
SPECIES AND WHICH FARMING PRODUCTION SYSTEM?
CORNERSTONES OF MODERN AVIAN HEALTH
# Poultry Disease Distribution in Kenya As To Cause

<table>
<thead>
<tr>
<th>Cause of Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parasitic/Helminth</td>
<td>47.58</td>
</tr>
<tr>
<td>Bacterial</td>
<td>27.87</td>
</tr>
<tr>
<td>Viral</td>
<td>17.01</td>
</tr>
<tr>
<td>Mycoplasmal</td>
<td>5.61</td>
</tr>
<tr>
<td>Nutritional</td>
<td>0.79</td>
</tr>
<tr>
<td>Poisoning</td>
<td>0.66</td>
</tr>
<tr>
<td>Non-Specific</td>
<td>0.37</td>
</tr>
<tr>
<td>Metabolic</td>
<td>0.11</td>
</tr>
</tbody>
</table>

[n=80,000 cases: 2003-2014]  
Source: Dr H. Mbugua
LEGAL/REGULATORY FRAMEWORK

• THE CABINET SECRETARY FOR HEALTH IN CONSULTATION WITH THE PHARMACY AND POISONS BOARD IS EMPOWERED BY SECTION 44(1) OF THE PHARMACY AND POISONS ACT, CAP 244 AND MISC. AMENDMENTS OF 2002 TO MAKE RULES UNDER WHICH MEDICINES MAY BE IMPORTED, MANUFACTURED FOR SALE OR SOLD IN KENYA.

• EXPECTED THE VETERINARY MEDICINES AND POISONS BILL, 2004
ANIMAL HEALTH SERVICE PROVIDERS’ SUPERVISION /REGULATION

• VETERINARY INSPECTORATE: KVB & DVS
• PEST CONTROL PRODUCTS BOARD (PCPB)
• THE VETERINARY SURGEONS AND VETERINARY PARAPROFESSIONALS ACT, 2011 (NUMBER 29 OF 2011)
PURPOSE FOR USAGE OF ANTIBIOTICS IN POULTRY

- GROWTH PROMOTION
- PROPHYLACTIC
- METAPHYLACTIC
- THERAPEUTIC
- ERADICATION OF DISEASES
ROUTES OF ANTIBIOTIC ADMINISTRATION IN POULTRY

- **IN FEED**
  - Long term medication and insolubility in water

- **IN WATER**:
  - Short term medication
  - Birds off feed, due to sickness or on a feed restriction program
  - Oral infection

- **HYPODERMIC/PARENTERAL**
  - Poor intestinal absorption
  - Individual treatment

- **IN OVO / YOLK SAC INOCULATION**
  - Egg hygiene not guaranteed

- **TOPICAL**
  - Ointments (wounds), oxytoxin (egg bound) & (evermectin (parasites))
# USAGE OF ANTIBIOTICS IN FARMS REPORTING DISEASE OCCURRENCE

<table>
<thead>
<tr>
<th>CLASS OF ANTIBIOTIC</th>
<th>PERCENTAGE OF USE ON FARMS (N=50)</th>
<th>EXAMPLES SEEN ON FARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>TETRACYCLINES</td>
<td>20</td>
<td>Doxycline/OTC/Hipramox-p</td>
</tr>
<tr>
<td>QUINOLONES/FLUOROQUINOLONES</td>
<td>16</td>
<td>Enrofloxacin/Flumequine</td>
</tr>
<tr>
<td>SULPHONAMIDES</td>
<td>12</td>
<td>Biotrim/S-dime/Astrisul 480</td>
</tr>
<tr>
<td>POLYPEPTIDES</td>
<td>12</td>
<td>Colistin/Bacitracin</td>
</tr>
<tr>
<td>MACROLIDE</td>
<td>12</td>
<td>Tylosin 75% / Erythromycin</td>
</tr>
<tr>
<td>AMINOGLYCOSIDES</td>
<td>10</td>
<td>Biosol Vet/Gentamycin</td>
</tr>
<tr>
<td>FASTOMYCIN</td>
<td>6</td>
<td>Fosbac Plus</td>
</tr>
<tr>
<td>PENICILLIN</td>
<td>4</td>
<td>Amoxillin/Amoxivet</td>
</tr>
<tr>
<td>PLEUROMUTILIN</td>
<td>4</td>
<td>Tiamulin</td>
</tr>
<tr>
<td>STREPTOGRAMINES</td>
<td>4</td>
<td>Virginiamycin</td>
</tr>
</tbody>
</table>

**NB:** Brand names are examples only and not endorsement or criticism of those not listed
# Drug Sensitivity Test Results for an 8,000 Layer Farm with Persistent Low Mortality

<table>
<thead>
<tr>
<th>Drug Name</th>
<th>Gram Negative Bacteria Rods</th>
<th>Escherichia Coli</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>22/2</td>
<td>22/3</td>
</tr>
<tr>
<td>Contrimixazole</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Colistin</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Doxycycline</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Enrofloxacin</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Flumequine</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Neomycin</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Norfloxacin</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Liver</td>
<td>Yolk</td>
</tr>
</tbody>
</table>

Sample Reference Numbers [+=Sensitive - =Resistant]
CHALLENGES IN ANTIBIOTIC USAGE

• LOW USAGE OF LABORATORY FACILITIES FOR DIAGNOSIS
• LOW BIOSECURITY AND FOOD SAFETY CONSCIOUSNESS
• HEAVY DISEASE CHALLENGE: ECONOMICS, CONVENIENCE AND LOW AWARENESS OF REGULATIONS WERE SEEN AS DRIVERS OF HEAVY ANTIBIOTIC USAGE
• ETHICS /CONFLICT OF INTEREST IN SELLING, PRESCRIBING & TREATING
• LOW ADHERENCE TO MANUFACTURERS’ INSTRUCTIONS
• LOW LINKAGE BETWEEN PRODUCERS/KNOWLEDGE CENTRES/VETERINARY PRACTITIONERS/REGULATORY AUTHORITIES/CONSUMERS
• POOR RECORD KEEPING
• ANTIBIOTIC RESISTANCE DEVELOPMENT
WAY FORWARD: STEPS TO TREATMENT

• STATE/COUNTY / PRIVATE VETERINARY INVOLVEMENT IN THE VALUE CHAIN & ENFORCEMENT/OVERSIGHT OF REGULATIONS
• PROBLEM IDENTIFICATION: HISTORY, ENVIRONMENTAL, CLINICAL & POST MORTEM ASSESSMENT
• CONSTRUCTION/CREATION PRACTICAL DIFFERENTIALS
• TENTATIVE DIAGNOSIS
• LABORATORIAL CONFIRMATIVE DIAGNOSIS
• INCREASED USE OF POINT OF CARE RAPID TESTING KITS
• ANTIBIOGRAM/SENSITIVITY TESTING IN LINE WITH LOCALLY AVAILABLE ANTIMICROBIALS
• ANTIBIOTIC SELECTION-AVAILABILITY, SAFETY & COST BENEFIT
• ADHERENCE TO MANUFACTURER’S RECOMMENDATIONS
• DOCUMENTATION OF ALL ABOVE IN A SIGNED REPORT
WAY FORWARD

• FEASIBLE TO SWITCH TO “NO ANTIBIOTICS” BECAUSE OF SHORT LIFE CYCLE OF POULTRY [5-82 WEEKS]

• DEVELOPMENT OF ALTERNATIVE THERAPIES TO OVERCOME RESISTANCE e.g. Herbs or MOLECULAR RESEARCH to inhibit resistance development directly

• REAL TIME AVAILABILITY OF VETERINARY PRODUCTS IN USE

• EDUCATION PROGRAMS ON CODES OF GOOD PRACTICES & FOOD QUALITY ASSURANCE SHOULD PROMOTE THE RESPONSIBLE AND PRUDENT USE OF ANTIBIOTICS
KNOW A NORMAL BIRD WELL
RECOGNIZE CLINICAL SIGNS EARLY
RECOGNIZE SYMPTOMS EARLY
POST MORTEM AND SAMPLE SELECTION
LABORATORY CONFIRMATION
LABORATORY CONFIRMATION
HERBAL TREATMENT
DANGER OF ANTIBIOTIC RESIDUES IN POULTRY PRODUCTS
WE ARE ALSO CONCERNED

THANKS FOR LISTENING ABOUT MY HUSTLES