Dubai International Food Safety Conference

Antimicrobials in Poultry Production

Ivone Delazari, Food Safety Consultant
Sadia S.A.

Feb. 23, 2010
Producer Responsibilities

As a food supply Company, we have the responsibility for the provision of safe and wholesome food for human consumption.

Laws, regulations, norms and standards are intrinsic elements of our organization.”

Guidelines from WHO, FAO, OIE and Brazilian Government legislation
Microorganisms in the Environment

- Prevalence of pathogens
- Primary production
- Bio-security
- Prevention-vaccination
- Antibiotics
The use of antimicrobials in poultry production

Antibiotics: merely ONE health management tool
The use of antimicrobials in poultry production

- Not all animals treated
- When treated:
  - Medicine
  - Levels
  - Withdrawal
- Residues not always present
- When present:
  - must be below tolerance level
Benefits from the use of antimicrobials

- Animal Health
- Prevention of Dissemination
- Animal Welfare
Concerns about the use of antimicrobials

1) Antimicrobial resistance:

“The use of antimicrobials in humans and in animals may lead to the development of bacterial or viral resistance”
Concerns about the use of antimicrobials

1) Antimicrobial resistance:

Influencing Factors

• Drug concentration
• Exposure

“Low-level, long-term exposure to antimicrobials may have a greater selective potential than short-term, full-dose therapeutic use”
Concerns about the use of antimicrobials

2) Drug residues
Amount of drugs or metabolites in edible tissues

- Meat
- Milk
- Eggs
- Honey
Concerns about the use of antimicrobials

2) Drug residues

Not always residues are bio-available
Not all residues present same toxic effect in humans as parent compounds.

- Parent drugs
- Metabolites
  - Free residues
  - Bound residues
Concerns about the use of antimicrobials

2) Drug residues

- National & international legislation
- Allowed Daily Intake = ADI
- Maximum Residue Levels = MRLs
Concerns about the use of antimicrobials

2) Drug residues

“JECFA has chosen to reduce the risk for the consumers to the absolute minimum by applying a worst case scenario.”

Residues within MRLs not harmful to human health.

Joint FAO/WHO Expert Committee on Food Additives - JECFA
The Nitrofuran Crisis

Nitrofurans widely used for animal husbandry worldwide.

1993: EU ban
The Nitrofuran Crisis

Nitrofurans still widely used as human health medicinal agents in many countries to treat:

- Skin burns
- Intestinal infections
- Urinary tract maladies
The Nitrofuran Crisis

End of 2001 / Early 2002:

EU detects chloramphenicol and nitrofurans in imported shrimp / chicken

Illegal use of drugs
The Nitrofuran Crisis

Exporters' official labs assayed

*Parent Drugs*

EU's official labs assayed

*Metabolites*

Importer technology NOT shared with exporting nations
The Nitrofuran Crisis

By 2002:
Exporters banned nitrofurans but
EU product rejection continued
due to alleged presence of
nitrofurazone metabolite residue

“SEM” = Semicarbazide
The Nitrofuran Crisis

By 2005:
European Food Safety Agency
points 5 probable sources of SEM:

- Nitrofurazone metabolite
- Azodicarbonamide (ADA) thermal degradation product (plastic sealant in metal lids of glass pots)
- Hypochlorite reaction in food additives
- Product of ADA decomposition used in bread making.
- Natural presence in yet unknown sources
Veterinary drug registration system in Brazil

Specific legislation: Registration & Use

Mercosur standards

Common Market of the South

CAMEVET

Committee of the Americas for Veterinary Medicines
Veterinary drug use in Brazil

Brazilian Ministry of Agriculture, Livestock and Food Supply – MAPA established:

Application of antimicrobial as preventive agent (growth promoters) is banned.
Veterinary drug usage in Brazil

MAPA

List of legal and banned antimicrobials

All operations of Brazilian animal production are subject to compliance with the National Program of Residue Control
Veterinary drug usage in Brazil

MAPA

Actions in cases of violation

• Levels > MRLs
• Banned drugs
Veterinary drug usage in Brazil

MAPA
Auditing programs
Non announced basis

- Poultry farms
- Plants: pre-mixes and vitamins
Sadia - veterinary drug control

Auditing programs
- Feed mills (GMP, HACCP)
  - Poultry farms

Monitoring programs
- Legal and banned drugs
- Food contaminants and pesticides
Sadia - veterinary drug control

International standards in all phases of animal farming.

Veterinarian support to farmers

- Reception of 1 day chick
- Transportation to the slaughterhouse
Thank you.