RESIDUE MONITORING AND CONTROL PROGRAM

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Scope of Presentation

- Introduction
- Roles
- Residue control programmes (In General)
- Types of residue monitoring Activities
- Competent Authorities and Laws that govern food safety (Residues)
- National Residue Program: South Africa
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  - National Residue Monitoring Programme
- Residue Program Results
- Future Programs
Introduction

- An important aspect of food safety (animal derived food) is the control of residues.
- These residue that are present in foodstuffs can be:
  - intentionally added (i.e. food additives, or the illegal addition for adulterant purposes),
  - are present as residues from defined uses (e.g. pesticides and veterinary drugs)
  - or are contaminants (formed during production, processing, storage or stemming from the environment).

- Adverse effect on consumers due to these residues:
  - Chronic toxicological adverse effects;
  - Allergic reactions. (Acute pharmacological effects on consumers and on the microflora of the gastrointestinal tract of consumers)
  - Resistance problems
Roles

- Assurance of food safety is the responsibility of a number of entities:
  - Business operators/ commercial entities involved in the production, processing and marketing of food.-The RSA Acts identity these entities as the primary responsible person.
  - Competent Authorities that: (secondary auditing and verification)
    - are responsible for providing consumer assurances for foods
    - regulate the use of veterinary drugs,
    - verify that appropriate practices are applied and that effective measures are in place within the veterinary drug distribution and food production system to provide effective protection of consumers and facilitate trade,
    - regulate and control registration of animal medicines.
Residue control programmes

All Programmes for the control of residues in foods should:

Be based on risk using realistic risk profiles assessed as reasonably likely to be associated with food derived from the relevant productions system(s);

- Be prevention focussed based on the realistic risk profiles associated with the probable or known use of approved, non-approved and prohibited veterinary drugs in the production system;

- Include regulatory measures proportionate to the relative human health risk associated with these hazards compared with other food-associated hazards;
Residue control programmes

- Ensure all parties involved in the production, marketing and processing system of the animals and/or the food products derived from them are held accountable to ensure that unsafe animal products will not be sold as a result of their action or inaction;

- Recognise that pre-harvest controls and practices are the primary means for ensuring safe food;

- Recognise that the primary role of audits and sampling programmes is to verify the implementation and effectiveness of the pre-harvest controls and practices;

- Be cost effective and have the support of stakeholders.
Types of residue monitoring Activities

Activities carried out as part of a residue and contaminant control programme include monitoring, directed sampling, compliance testing, pre-market surveys, post-market surveys and all other data gathering activities.

- **Monitoring:**
  - a statistically-based, unbiased, random sampling, processing and analysis of samples to provide profile information on the occurrence and/or levels of chemical residues in pre-defined, normal sample populations.
  - Monitoring activities are particularly useful for discerning residue trends and identifying potential areas where directed sampling might be indicated.

- **Directed sampling**
  - focussed, directed at targeted sample populations (e.g. commodity types, or geographical areas) to investigate and verify any suspected problems of potential health risk suggested in the monitoring programme. Directed sampling is investigative in nature, and can trigger detention of product pending risk assessment and compliance action.
Types of residue monitoring Activities

- Compliance testing
  - is directed at specific samples suspected of not complying with specific regulations and guidelines governing the sale and distribution of food.
  - The product is detained until the test results are available to determine the appropriate disposition.
  - is a regulatory control measure to prevent the marketing, or to support the removal from the market of a product that poses a health risk to the consumer.

- Special or pilot surveys
  - are used to gather information about the occurrence of residues not meeting the requirement of other programme components (i.e. monitoring, compliance). For example, initial surveys or surveys for components outside of the health and safety criteria might be included here.
  - These are usually limited in scope and duration
Types of residue monitoring Activities

- **Targeted sampling or “blitzes”**
  - are used to obtain a **snapshot in time**.
  - The **scheduling of blitzes is unannounced**. For example, a blitz may allow for the sampling of every herd presented for slaughter for a specified, usually short, period of time not exceeding 2 to 6 weeks.

- **Legal sampling**
  - is undertaken for specific situations where legal action is the anticipated follow up action.
  - Certain additional criteria are demanded during the sampling submission and laboratory testing of these samples.
  - Adherence to all quality assurance measures is essential.
  - Legal advice should be sought prior to the initiation of such activities.
Competent Authorities and Laws that govern food safety (Residues/ Animal derived food)

  - This Act is administered by the Directorate: Veterinary Public Health in the Department of Agriculture Forestry and Fisheries and enforced by the Departments of Agriculture of the nine provinces. It addresses, amongst others, meat safety and hygiene standards and regulates the importation and exportation of unprocessed meat.

- **The Foodstuffs, Cosmetics and Disinfectants Act**, 1972 (Act No. 54 of 1972): DoH
  - This Act governs the manufacture, sale and importation of foodstuffs, cosmetics and disinfectants from a safety/public health point of view and is administered by the Directorate: Food Control of the Department of Health and enforced by local authorities in their areas of jurisdiction.

  - This Act is administered by the SABS and has compulsory specifications that address canned meat and fish products, as well as frozen seafood.
Competent Authorities and Laws that govern food safety
(Residues)

  - protects consumers from hazards to their well being and safety.
  - promotes and protects the economic interests of consumers
  - improves access to information necessary for consumers to make informed choices

- Those that regulate and control the availability of veterinary medicines also have an indirect responsibility to food safety (Maximum Residue Limit determination/Withdrawal periods determination)
  - **Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947** (Act 36 of 1947) and its regulations. Applicants should ensure that they are aware of their obligations under Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947) and other Acts.
National Residue Program: South Africa

Split system

- National Residue Control Program
- National Residue Monitoring Program

National Residue Monitoring Program

- Objective of the program
  - To ensure consumer confidence.
  - assess the effectiveness of South African controls and practices which ensure that the chemical residue status of foods of animal origin is safe, sound and wholesome and complies with the regulatory tolerances;
  - identify the illegal or non-compliant use of agricultural chemicals and veterinary products in animal production;
Residue Control Programme

- Export Residue Control program

- The Department of Agriculture, Forestry and Fisheries is mandated to give assurance to certain countries (EU and Middle Eastern Countries) that Animal and Animal Products produced in South Africa comply with rules/requirements laid down by the importing country.

- The importing country prescribes the Residue Control Programme that the exporting country should follow.

- Production/export statistics are used to determine the number of samples to be collected for the programme and also per export approved abattoir.

- All ostrich, Game and Crocodile abattoirs are subject to strict requirements and should be registered.
Residue Control Programme

- Currently seven Ostrich export abattoirs, four Game Processing plants and two Crocodile abattoirs are registered.

- Ostrich and Game farms are also subject to an inspection and registration

- Tissue samples are collected at these registered abattoirs and Serum and Feed samples on the registered farms

- Samples are collected monthly over a period of one year.
National Residue Monitoring Programme

- Focuses on National market and non-EU export market
  - High throughput Abattoirs and Abattoirs approved to export animal products to neighbouring countries in all provinces participate in the programme

- Guidelines set by the Codex Alimentarius Committee were used to compile the programme

- The programme makes provision for analysis of the following commodities:
  - Tissue samples of Poultry, Pork, Cattle and Sheep; collected at the abattoirs
  - Milk samples; collected, out of the bulk tank, on farms that supply export approve establishments or other Dairies that supply the local market
  - Egg samples; collected of the major table egg producers
  - Honey samples are collected at major apiaries in different Provinces
National Residue Monitoring Programme

Sample collection for the Residue Monitoring Programme
- **Abattoirs** – Meat inspectors (IMQAS) or Provincial Meat inspectors in charge of abattoirs in a certain area
- **Farms** (milk) – Animal Health Technicians in charge of an area in the different Provinces
- **Honey** Bottling stations – National officials
- **Egg** packing stations – National officials

Tissue and Serum samples collected also analysed for the following substances:
- **Veterinary Drug**
- **Hormones/Growth promoters**
- **Pesticides**
- **Heavy metals**
Coordinating Laboratories.

- Daff has appointed ARC-OVI as the National Residue Reference laboratory.
  - Coordinating function.

- The following laboratories take part in the programme:
  - National Horse Racing Club
  - South African Bureau of Standards
  - University of the Free State – Pharmacology Department
  - ARC – Institute of Soil Climate and Water
Residue Program Results

- **All non Compliant results** – Residue Control programme –
  - sent to the Provincial Director which will then ask the State Veterinarian in charge of the area to investigate
  - Corrective measures put in place
  - Farm might be taken of the Ostrich export list

- **All non compliant results for the Residue Monitoring Programme**
  - will also be sent to the Provincial Director to investigate
  - Corrective measures put in place

- The Department of Agriculture, Forestry and Fisheries has an agreement with the ARC-OVI residue laboratory to receive, register and distribute the samples to the different laboratories
## Residue Control Programme Results

<table>
<thead>
<tr>
<th>SPECIES/Sample</th>
<th>Number of Samples Tested</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008/9</td>
<td>2009/10</td>
</tr>
<tr>
<td>Ostrich</td>
<td>201</td>
<td>134</td>
</tr>
<tr>
<td>Game</td>
<td>120</td>
<td>116</td>
</tr>
<tr>
<td>Croc</td>
<td>105</td>
<td>25</td>
</tr>
<tr>
<td>Feed (Ostrich)</td>
<td>184</td>
<td>1620</td>
</tr>
<tr>
<td>Serum (Ostrich)</td>
<td>3985</td>
<td>3335</td>
</tr>
</tbody>
</table>

2 samples Mercury
1 sample Ivermectin
# National Residue Monitoring Programme Results

<table>
<thead>
<tr>
<th>Species/ Sample</th>
<th>Number of Samples Tested</th>
<th>2009/10 Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bovine</td>
<td>421</td>
<td>All Compliant</td>
</tr>
<tr>
<td>Ovine</td>
<td>174</td>
<td>All Compliant</td>
</tr>
<tr>
<td>Porcine</td>
<td>121</td>
<td>All Compliant</td>
</tr>
<tr>
<td>Poultry</td>
<td>225</td>
<td>5 samples Non-Compliant (Above National MRLs) (Doxycycline)</td>
</tr>
<tr>
<td>Milk</td>
<td>454</td>
<td>1 sample Non-Compliant (Above National MRLs) (Mycotoxin)</td>
</tr>
<tr>
<td>Eggs</td>
<td>24</td>
<td>All Compliant</td>
</tr>
<tr>
<td>Honey</td>
<td>22</td>
<td>All Compliant</td>
</tr>
</tbody>
</table>
The Department of Agriculture is advocating for the full implementation of residue monitoring/control program.

- This program is to ensure the quality and safety of foods of animal origin and other food commodities for public health safety.
- It is to address all areas around chemical residues in animal products
  - the national residue program
  - the import residue program (Sampling at the port-of-entry) and
  - export residue program

- The program will be designed using
  - the “Guidance for the Design And Implementation of National Regulatory Food Safety Assurance Programme Associated with the use of Veterinary Drugs in Food Producing Animals” adopted by CODEX.
  - EU residue monitoring programs
Questions?