AUDITING FOOD PRODUCT TESTING REQUIREMENTS IN A SOUTH AFRICAN CONTEXT:

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ABSTRACT:

Food safety auditors in the South African arena are faced with a number of challenges and one of the areas that lead to the biggest debates is the effective auditing of product testing requirements & compliance in the absence of comprehensive legislation. Internationally, auditors are guided by detailed standards & regulations legislated by state departments and international associations. South Africa has very limited legislative requirements for contaminants in food, including microbiological requirements, limited information on chemical contaminants and physical contaminants. This creates an environment where the setting of compliance criteria is left to the private sector clients and criteria is found to vary greatly in the testing required and the standards set for compliance. This leaves the door open for the interpretation of compliance concerning product testing, for producers and auditors alike. This causes this area to be very subjective when audited. The purpose of my topic is to analyze the problem and provide guidance to auditors towards the effective interpretation of testing requirements and compliance during food safety auditing. Factors such as risk assessments, specific product knowledge (including international standards), frequencies & effectiveness of testing and lastly trending should be considered.

DISCUSSION POINTS:

1. International legislation & standards vs. South African legislation & standards
2. Types of audits (private standards) in South Africa that refer to product testing requirements & what these requirements are
3. How do auditors evaluate these requirements & compliance during auditing
4. What auditors should look for during the auditing process of product testing requirements
5. In summary, the legislators, guided by the experience of industry, should formalize product standards – currently on the go, but a slow & tedious process.

1. INTERNATIONAL VS. LOCAL STANDARDS & LEGISLATION

Herewith are highlighted some facts with regards to the extent of legislation & standards available guiding product testing requirements & compliance criteria of product specific requirements that illustrate the shortcomings of local legislative guidance:

- CODEX Alimentarius lists 214 different product specific standards providing guidance on product specific attributes that require evaluation and the compliance criteria. CODEX Alimentarius Official Standards List
- US FDA lists 186 different guidance documents relating to specific product criteria US FDA - Guidance Documents
- EU legislative list covers product specific criteria under chemical safety, biological safety & product contact requirements EUROPA - Food Safety: From the Farm to the Fork - Publications
- Australia & Canada regulate primary production products and its further processing. CODEX standards are used to regulate manufactured products.
- According to the WHO only 77 countries globally have legislation covering microbiological requirements for food products
- South African legislation (between the DoH & DAFF) consists of 66 current product specific regulations & regulations pertaining to contaminants permitted in food. DoH List of Regulations; Department of Agriculture, Forestry and Fisheries

South African legislation on heavy metals in food stuffs cover only 8 periodic elements and refers to only 18 food types, not covering nearly all the potential hazards, for example arsenic, for which no limit is indicated on vegetable crops, yet arsenic is one of the most common soil contaminants in agricultural areas situated in mining activity regions, due to acid mine drainage.

2. PRIVATE STANDARDS IN SOUTH AFRICA & THE REQUIREMENTS FOR PRODUCT TESTING

There are currently 5 different retail standards available in South Africa, each with auditable requirements for food product testing & compliance. In the food services sector there are also a number of specific private standards to which suppliers of this sector of the industry have to comply with. Furthermore, there are a number of independent private standards, which are also required by some local and international customers. These include:

- ISO22000
- HACCP
- BRC
- GLOBALGAP
- TNC
- LEAF
- AIB standards

Including the above along with some sector specific audit standards, there are a total of 21 different audit standards available in South Africa relating to food production.

Most private standards call for product compliance with regulated product requirements. Retailers in South Africa have formulated their own internal product compliance criteria, based on local legislation, international industry standards & guidelines and own in-house data, due to the lack of detail in legislation alone.

Internationally based food service industries set their criteria according to international requirements, which are often set by the holding company or head office, based internationally. These standards do not always take conditions unique to South Africa in consideration.

Independent audit standards call for a risk based approach & compliance to legislation in either the country of origin or the country of destination, due to the broad spectrum of products being covered under these standards; they are suitably vague in this area.

All of the above leads to a host of different requirements to which producers & manufacturers have to comply with, creating huge confusion.
EXAMPLE OF CONFLICTING COMPLIANCE CRITERIA

- Food processor X has a number of customers that source product M from them.
- Product M has specific inclination towards supporting growth of *Coliform* type bacteria.
- Food processor X undergoes 7 private standard audits annually where these requirements are assessed.

<table>
<thead>
<tr>
<th>Client</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retailer J</td>
<td>E. Coli &lt; 20cfu/g (coliforms test not required)</td>
</tr>
<tr>
<td>Retailer I</td>
<td>E. Coli &lt; 20cfu/g; Coliforms &lt; 5000cfu/g</td>
</tr>
<tr>
<td>Retailer K</td>
<td>E. Coli &lt;100cfu/g; Coliforms &lt; 100 000cfu/g</td>
</tr>
<tr>
<td>Retailer L</td>
<td>No fixed criteria, require testing in audit standard</td>
</tr>
<tr>
<td>Retailer M</td>
<td>No audit standard</td>
</tr>
<tr>
<td>Food Service Client R</td>
<td>E. Coli: Absent in 20g; Coliforms &lt; 100cfu/g</td>
</tr>
<tr>
<td>Food Service Client T</td>
<td>E. Coli &lt;10cfu/g; Coliforms test not required</td>
</tr>
</tbody>
</table>

3. **HOW DO AUDITORS EVALUATE THESE REQUIREMENTS & COMPLIANCE DURING AUDITING?**

Auditors are often faced with interpreting these varying product compliance criteria during audits. Auditors are trained to evaluate systems against standard specific requirements and scoring based on compliance to standard. Sometimes these requirements are vague or open ended to allow for interpretation based on specific food product, especially where a risk based approach is called for. Based on auditors’ scope of experience & preparation for audits, the intensity, with which these aspects of the standard are audited, differs greatly amongst auditors.

4. **THE RESULT OF THIS SITUATION...**

The current situation in SA is that a number of food producers are confused about their specific product compliance criteria. Producers don’t have sufficient in depth knowledge of the hazards they should be testing for on their products, as very little legislation or guidance documentation is available.

Often heard said about product testing & product compliance: “But the auditor said….” This scenario is created by the fact that producers & manufacturers aim to conform to customer requirements, which is normally exhibited as their audit scores. They will therefore present what they think a specific auditor will be looking for on the day and not necessarily presenting the actual data, fully interpreted and with corrective action reflected, which further complicates the reflection of the actual state of food safety in an organization.

Auditors’ tend to take a generalized approach towards product testing criteria and do not always consider specific standard requirements. They will base their decisions on their own background knowledge and not consider what is required by a specific standard, where they feel that the standard is lacking or too vague. Product risk is forgotten.

Quantity instead of quality is often a deciding factor as some auditors tend to look for evidence of frequent testing and often forget to look at the detail of what was tested for, was it the correct organisms or substance as identified in the risk matrix and does the product comply with the set requirements (which are determined by a number of sources as stated above).
5. THE DECISION TREE FOR AUDITORS

It is very important when auditing product compliance criteria and testing requirements to follow a logical approach when evaluating evidence and scoring. The following steps should be considered to simplify the process of auditing product testing requirements:

a) Firstly consider legislation – Mandatory always first!

b) Secondly consider customer specific requirements – What tests & numbers does the customer require?

c) Thirdly consider the risk of the product, the auditee’s understanding of the product’s risk and whether all risk aspects associated with the product has been addressed in the testing protocol.

d) What does the data say? Consider the body of data, results of testing and range of tests conducted.

e) Look at the trend! Trend analysis is very important and should always be present.

6. IN AN IDEAL WORLD...

In an ideal situation South African legislators have to call working groups to assess the plethora of product compliance criteria & testing requirements. They should follow the lead of the international councils for example WHO/FAO, who initiated JEMRA, the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA), who focuses on the following main areas of work: providing risk assessments for selected pathogens (Pathogen Commodity Combination Risk Assessments) to the Codex Alimentarius Commission and to Member States, developing Guidelines for Risk Assessment of Microbiological Hazards in Food and Water and providing expert advice on Risk Management.

Industry players must come forward and cooperate to harmonize product compliance criteria and testing requirements.

Testing facilities, laboratories & research institutes must act in an advisory role to assist with the practicality of testing requirements and developing accredited testing methods for a wider range of substances of concern, which are identified on a daily basis, both locally and internationally.

Alternatively South Africa as a member country of CODEX, must make a decision to adopt international standards set by CODEX and be guided on product specific requirements by the international food safety community.

7. IN THE MEANINGLESS...

Members of industry who offer guidance or requirements to producers & manufacturers of food (technical experts, consultants & trainers) must embed the importance of product testing with producers and must place focus on the following:

- Knowledge of products, raw materials, additives, final product characteristics & storage & usage criteria
- RISK ASSESSMENT!!
- How to conduct a proper sampling plan using a risk matrix to ensure that all applicable hazardous substances are covered in the most cost effective manner.
- How to interpret results & take effective corrective action.
- Trending closes the loop!

Auditors must research the product scope being audited & familiarize themselves with the products prior to auditing organizations. Follow a logical road map when assessing product testing criteria & compliance during audits. Lastly but by no means the least important for auditors: Be consistent!