Codex HACCP and ISO 22000:2005
Similarities and Differences
What is the difference between

- An auditable standard
- A guidelines

- **Auditable standard**
  A standard specification against which an independent audit can be conducted

- **Guidelines**
  Guidelines or best practices available for selection for achieving a certain objective
Correlation between various standards

Guidelines for Auditing - ISO 19011

ISO 22000:2005

CODEX HACCP (Basic hygiene & HACCP principles)

ISO 9001:2008

Co-relation between various standards

The ISO 22000 Family

**ISO 22001:2007**

**ISO 22003:2007**
Food safety management systems – Requirements for bodies providing audit and certification of food safety management systems

**ISO 22004:2006**
Guidance on Application of ISO 22000:2005

**ISO 22005:2007**
Guidance on Traceability & Transparency in food chain

**ISO/DIS 22006**

**ISO/WD 22008**
Food Irradiation – Good processing practices for irradiation of foods intended for human consumption
Codex HACCP vs ISO 22000

1. 5.5 & 7.3.2 Food safety team
2. 7.3.3 Product characteristics
3. 7.3.4 Intended use
4 & 5. 7.3.5.1 Flow diagrams
2 & 6. 7.3.5.2 Description of process steps and control measures
6. 7.4.2 Hazard identification and determination of acceptable levels
6. 7.4.3 Hazard assessment
6 & 7. Selection & assessment of control measures
7. 7.5 Establishing the Operational PRPs
7,8,9, 10 & 11. Establishing the HACCP plan
8.2 Validation of control measure combinations
7.8 Verification planning

4.2 & 7.7 Documentation requirements
7.2 PRPs

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ISO 22000 Preliminary Steps

7.3.2 Food Safety Team

7.3.3 Product Characteristics
   - Raw Material, Ingredients, In-process material
   - End Product
   - **Product contact surfaces**

7.3.4 Identify intended use

7.3.5 Flow diagrams, process steps and control measures including on site verification of flow diagram.
## Steps in Hazard Analysis

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Hazard Identification (Biological, Chemical &amp; Physical) and determination of acceptable levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>Conduct Hazard Assessment &amp; determine the method (Probability &amp; Severity)</td>
</tr>
<tr>
<td></td>
<td>Is elimination or reduction of hazard essential to the production of safe food</td>
</tr>
<tr>
<td></td>
<td>No control measure required</td>
</tr>
<tr>
<td>Step 3</td>
<td>Selection of appropriate combination of control mure</td>
</tr>
<tr>
<td></td>
<td>Validation of control measure combination</td>
</tr>
<tr>
<td>Step 4</td>
<td>Assessment of control measures using 7 parameters &amp; determine the methodology</td>
</tr>
<tr>
<td>Step 5</td>
<td>Categorization of control measures using methodology in OPRP or HACCP Plan (CCP)</td>
</tr>
</tbody>
</table>
ISO 22000 Assessment parameters

Hazard Assessment
- Probability
- Severity

Control Measure Assessment
- Probability of failure of control measure
- Severity in case of failure
- Feasibility of monitoring control measure
- Is there Successive control measure in food chain
- Synergetic effect of other control measures
- Impact on hazard control
- Is control measure specifically designed?
### Example of methodology of Hazard assessments

<table>
<thead>
<tr>
<th>Level</th>
<th>Marks</th>
<th>Probability of Occurrence of hazard</th>
<th>Severity of hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>3</td>
<td>Often occurrence Eg: Occurrence once in every month</td>
<td>High (life-threatening) Examples include illnesses caused by Clostridium botulinum, Salmonella typhi, Listeria monocytogenes, Escherichia coli 0157:H7, Vibrio cholerae, Vibrio vulnificus, paralytic shellfish poisoning, amnesic shellfish poisoning</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>2</td>
<td>Moderate Eg: Occurrence once in 4 to 6 months</td>
<td>Moderate (severe or chronic) Examples include illnesses caused by Brucella spp., Campylobacter spp. Salmonella spp., Shigella spp. Streptococcus type A, Yersinia entercolitica, hepatitis A virus, mycotoxins, ciguatera toxin</td>
</tr>
<tr>
<td>LOW</td>
<td>1</td>
<td>Marginal Eg: May occur once in a year</td>
<td>Low (moderate or mild) Examples include illnesses caused by Bacillus spp., Clostridium perfringens, Staphylococcus aureus, Norwalk virus, most parasites, histamine-like substances and most heavy metals that cause mild acute illnesses</td>
</tr>
</tbody>
</table>

Score: Probability x Severity greater than ...... will be significant.
### Example of control measure assessment methodology

<table>
<thead>
<tr>
<th>Probability of failure of CM(A)</th>
<th>High (3) Often: once in a month</th>
<th>Medium (2) Occasionally: once in 6 months</th>
<th>Low (1) Marginal: maybe once in a year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consequences in case of failure of CM (B)</td>
<td>High (3) Effect on end product</td>
<td>Medium (2) May effect on end product</td>
<td>Low (1) No effect on end product</td>
</tr>
<tr>
<td>Feasibility for Monitoring (C)</td>
<td>High (3) Continuous</td>
<td>Medium (2) Defined frequency</td>
<td>Low (1) Not feasible to monitor</td>
</tr>
<tr>
<td>Impact on hazard control (D)</td>
<td>High (3) Prevent</td>
<td>Medium (2) Reduce</td>
<td>Low (1) Eliminate</td>
</tr>
<tr>
<td>Is there successive control measure? (E)</td>
<td>Yes: 0</td>
<td>No: 3</td>
<td></td>
</tr>
<tr>
<td>Is control measure specifically designed? (F)</td>
<td>Yes: 3</td>
<td>No: 0</td>
<td></td>
</tr>
<tr>
<td>Is there synergistic effect with other CM? (G)</td>
<td>Yes: 0</td>
<td>No: 3</td>
<td></td>
</tr>
</tbody>
</table>

Low : 4+3+3+3 = 13  
Medium: 8+3+3+3 = 17 - OPRP  
High : 12+3+3+3 = 24 - CCP
Legal compliance and requirements of the standard

- Legal compliance involves compliance with the requirements of national and international legislation and regulations. Legal compliance is mandatory and basic requirement.

- Compliance with applicable Codex standards is recommended.

- Compliance with ISO standards is mandatory to the extent of fulfillment of certification requirements and is beyond meeting the legal requirements.
Other differences

- Emergency preparedness
- Verification of food safety system including internal audits
- Traceability, Withdrawal & recall
- Corrections & corrective actions
- Validation of control measure combinations
- Continual improvement
Thank You !!!

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