



CODEX ALIMENTARIUS



FAO/WHO Food Standards - Normes Alimentaires FAO/OMS - Normas Alimentarias FAO/OMS

International Agreement on Food Safety *And The Baseline for Audits*

AFDO 2007

San Antonio, TX



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International Standard

The Case for CODEX

P u r p o s e

To protect the health of consumers, and to ensure fair practices in world trade

N e u t r a l

United Nations (Food and Agriculture Organization / World Health Organization)

A g r e e m e n t

174 countries are signatories representing 98% of the world population

C r e d i b i l i t y

Regulatory bodies, academia, and food industry contribute the technical expertise

A u t h o r i t y

World Trade Organization gives “teeth” to Codex

RECOMMENDED INTERNATIONAL CODE OF PRACTICE GENERAL PRINCIPLES OF FOOD HYGIENE

CAC/RCP 1-1969, Rev. 4-2003

TABLE OF CONTENTS

INTRODUCTION.....	2
SECTION I - OBJECTIVES.....	2
THE CODEX GENERAL PRINCIPLES OF FOOD HYGIENE.....	2
SECTION II - SCOPE, USE AND DEFINITION.....	2
2.1 SCOPE.....	2
2.2 USE.....	2
2.3 DEFINITIONS.....	2
SECTION III - PRIMARY PRODUCTION.....	2
3.1 ENVIRONMENTAL HYGIENE.....	2
3.2 HYGIENIC PRODUCTION OF FOOD SOURCES.....	2
3.3 HANDLING, STORAGE AND TRANSPORT.....	2
3.4 CLEANING, MAINTENANCE AND PERSONNEL HYGIENE AT PRIMARY PRODUCTION.....	2
SECTION IV - ESTABLISHMENT: DESIGN AND FACILITIES.....	2
4.1 LOCATION.....	2
4.2 PREMISES AND ROOMS.....	2
4.3 EQUIPMENT.....	2
4.4 FACILITIES.....	2
SECTION V - CONTROL OF OPERATION.....	2
5.1 CONTROL OF FOOD HAZARDS.....	2
5.2 KEY ASPECTS OF HYGIENE CONTROL SYSTEMS.....	2
5.3 INCOMING MATERIAL REQUIREMENTS.....	2
5.4 PACKAGING.....	2
5.5 WATER.....	2
5.6 MANAGEMENT AND SUPERVISION.....	2
5.7 DOCUMENTATION AND RECORDS.....	2
5.8 RECALL PROCEDURES.....	2
SECTION VI - ESTABLISHMENT: MAINTENANCE AND SANITATION.....	2
6.1 MAINTENANCE AND CLEANING.....	2
6.2 CLEANING PROGRAMMES.....	2
6.3 PEST CONTROL SYSTEMS.....	2
6.4 WASTE MANAGEMENT.....	2
6.5 MONITORING EFFECTIVENESS.....	2
SECTION VII - ESTABLISHMENT: PERSONAL HYGIENE.....	2
7.1 HEALTH STATUS.....	2
7.2 ILLNESS AND INJURIES.....	2
7.3 PERSONAL CLEANLINESS.....	2
7.4 PERSONAL BEHAVIOUR.....	2
7.5 VISITORS.....	2

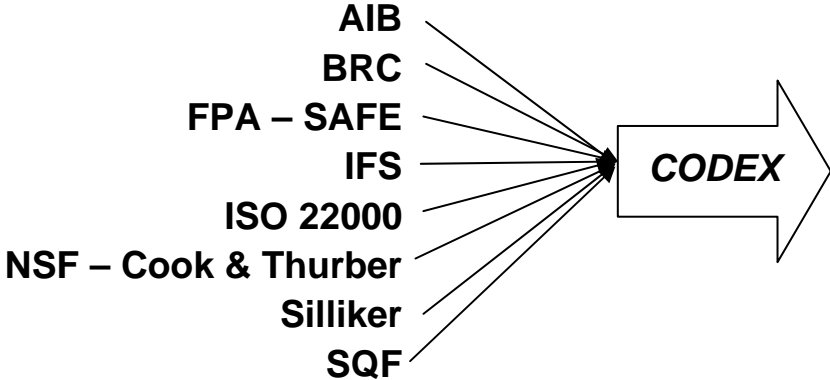
SECTION VIII - TRANSPORTATION.....	2
8.1 GENERAL.....	2
8.2 REQUIREMENTS.....	2
8.3 USE AND MAINTENANCE.....	2
SECTION IX - PRODUCT INFORMATION AND CONSUMER AWARENESS.....	2
9.1 LOT IDENTIFICATION.....	2
9.2 PRODUCT INFORMATION.....	2
9.3 LABELLING.....	2
9.4 CONSUMER EDUCATION.....	2
SECTION X - TRAINING.....	2
10.1 AWARENESS AND RESPONSIBILITIES.....	2
10.2 TRAINING PROGRAMMES.....	2
10.3 INSTRUCTION AND SUPERVISION.....	2
10.4 REFRESHER TRAINING.....	2
HAZARD ANALYSIS AND CRITICAL CONTROL POINT (HACCP) SYSTEM AND GUIDELINES FOR ITS APPLICATION.....	2
PREAMBLE.....	2
DEFINITIONS.....	2
PRINCIPLES OF THE HACCP SYSTEM.....	2
GUIDELINES FOR THE APPLICATION OF THE HACCP SYSTEM.....	2
INTRODUCTION.....	2
APPLICATION.....	2
TRAINING.....	2

Codex is our best tool to:

- ✓ Commoditize audits
- ✓ Unite & speak with authority
- ✓ Pressure nationalistic tendencies
- ✓ Resist audit proliferation

Codex compared to others food safety standards

AUDITS COMPARED:



Codex compared to others food safety standards

Codex parsed in to 37 criteria: Prerequisite Programs (PRP) + HACCP

#	Type	Keywords	Codex general principles of FSQ systems	Codex general principles of food hygiene (Rev. 4-2003) Title	Sealife FPA Safe Version 11	Sealife BRC Version	Sealife IFS Version	ISO 22000:2018	SOP 2008 Issue 1	BIF Consolidated standards for Food Safety	SCHOKER GMP and Food safety system 2	BSF work and Shaker Food safety Quality Food safe
9	1	Physical and Chemical Product Contamination Risk	3.3	HANDLING, STORAGE AND TRANSPORT	2.2.3 - 2.4 - 3.5	3.7	5.4	7.2	4.3.1	III.A.1.1	I.C.4, III.F.3, VIII.D	D.
10	1	Fabrication-Raw Material Handling Preparation, Processing, Packaging	3.2	PREMISES AND ROOMS	2.1.1 - 2.7.1	3.2.2	4.8.4	6.3-6.4-7.2	4.3.1	III.A.1	III.D, VI.A	C.3, I.
11	1	Floors	3.2	PREMISES AND ROOMS	2.1	3.2.2.2	4.8.4.3	6.3-6.4-7.2	4.3.1	IV.D.5	III.D	C.2
12	1	Internal Environment standards	3.2	PREMISES AND ROOMS	2.1	3.2	4.8	6.3-6.4-7.2	4.3.1	IV.D	III.D	C.3
13	1	ceilings	3.2	PREMISES AND ROOMS	2.1	3.1.1	4.8	6.3-6.4-7.2	4.3.1	IV.A	III.D	C.2
14	1	Staff Facilities	3.2	PREMISES AND ROOMS	2.1.7	3.5	3.3	7.2	4.3.1	III.D.2, III.D.3	V.	C.5
15	1	Walls	3.2	PREMISES AND ROOMS	2.1	3.2.2.1	4.8.4.2	6.3-6.4-7.2	4.3.1	IV.D.5	III.D	C.2
16	1	Windows, glass	3.2	PREMISES AND ROOMS	3.5.3	3.2.2.4	4.8.4.5	6.3-6.4-7.2	4.3.1	I.E	I.C.5	C.2
17	1	Layout, Product Flow, Segregation and Traffic control	3.2	PREMISES AND ROOMS	2.15	3.2.1	4.8.3	6.3-6.4-7.2	4.3.1	III.A.1, III.D.5, III.	I.D.1	C.2
18	1	Ceilings/Overheads	3.2	PREMISES AND ROOMS	2.1	3.2.2.3	4.8.4.4	6.3-6.4-7.2	4.3.1	IV.D.5	III.D	C.2
19	1	Air conditioning/Ventilation	3.2	FACILITIES	2.1.3	3.2.2.7	4.8.4.8	6.3-6.4-7.2	4.3.1	III.A.1, IV.D.8	III.D	C.2
20	1	Lighting	3.2	FACILITIES	2.1	3.2.2.6	4.8.4.7	6.3-6.4-7.2	4.3.1	I.E, IV.D.7	III.D	C.2
21	1	Waste/Water Disposal	3.2	FACILITIES	4.8	3.3	4.18	7.2	4.3.1	III.D.7	III.A	E.2
22	1	HACCP	3.1	CONTROL OF FOOD HAZARDS	3.1	1.	3.2	7.1, 7.10, 8.3, 8.5	4.3.1	I.7	I.A	D.
23	1	Preventive Cleaning	3.2	KEY ASPECTS OF HYGIENE CONTROL SYSTEM	2.5	6.4	3.2.1	7.2	4.3.1	III.F.	V.	D.7
24	1	Hand Disinfection / Fingert Body Disinfection	3.2	KEY ASPECTS OF HYGIENE CONTROL SYSTEM	3.5	4.3	5.5	7.2	4.3.1	III.D.4, III.D.1	VIII.D	G.4
25	1	Product Packaging	3.4	PACKAGING	2.18	4.4	4.5	7.2	4.3.1	III.A.1	III.A	H.1
26	1	Sprayers, water, leak flow	3.5	WATER	2.4.5, 2.4.6	3.3	4.8.4.3	6.3-6.4-7.2	4.3.1	IV.D	III.D, VIII.A	F, C.1
27	1	Equipment, cleaning	3.1	MAINTENANCE AND CLEANING	2.4.4 - 2.2.2 - 2.11	3.4	4.15	7.2, 8.2	4.3.1	I.E, I.F, III.C.4, IV.	I.E, II.C, III.C, VII	C.7, D
28	1	Maintenance, sanitation, cleaning and hygiene	3.2	CLEANING PROGRAMMES	2.2.1 - 2.2.4 - 2.2.5 - 2.	3.8	4.3	7.2	4.3.1	I.C, I.E, III.C.4, III	III.A.5, II.D, VII.A	C.2, D
29	1	Internal Environment standards	3.3	PEST CONTROL SYSTEMS	2.1.2	3.1	4.8.2	6.3-6.4-7.2	4.3.1	IV.D.1	III.A	E.2
30	1	Pest Control	3.3	PEST CONTROL SYSTEMS	2.3	3.10	4.11	7.2	4.3.1	III.A, III.D	III.C, IV	E.
31	1	Deer	3.3	PEST CONTROL SYSTEMS	2.1	3.2.2.5	4.8.4.6	6.3-6.4-7.2	4.3.1	IV.D.10	III.D	C.2
32	1	Premler and grounds	3.3	PEST CONTROL SYSTEMS	2.1	3.1.2	4.8.1	6.3-6.4-7.2	4.3.1	IV.A	III.A	C.2
33	1	Personnel hygiene, Hand Handlers and Others/Working In or Visiting Food	3.2	ESTABLISHMENT: PERSONAL HYGIENE	2.5	6.	3.2	7.2	4.3.1	III.F	I.D.2, I.D.3, V.	D.7
34	1	Medical Screening	2.1	HEALTH STATUS	2.5.6	6.3	3.2.3	7.2	4.3.1	III.F.3	-	-
35	1	Transport	3.8	TRANSPORTATION	2.7.3 - 2.7.4 - 2.7.5	3.11	4.13	7.2	4.3.1	III.A.1, III.D.3, III.	VI.A	F.1, F.5, I.4
36	1	Allergens	3.8	PRODUCT INFORMATION AND CONSUMER AW	3.4	4.2	4.28	7.3-7.4	4.3.1	III.D.7	I.D	G.6
37	2	Quality Policy Statement	2.1	Role of Government, industry, and consumers	1.1.1	2.2	2.2	4.1, 5.2	4.1	I.D.3	-	-
38	2	Process Control	4.3	EQUIPMENT	2.7.2	5.	5.2	8.5.1	4.3.1, 4.4.1	IV.C.7	VIII.D	G.1
39	2	Control of Operations (process and equipment)	3.8	CONTROL OF OPERATION	3.2 - 3.3	5.1	5.7	8.4, 7.8	4.3.1	IV.C.7	VI.A, VI.D	G.3
40	2	Specifications	3.3	INCOMING MATERIAL REQUIREMENTS	4.1	2.11.2	4.4-4.2	7.3	4.2, 4.2.3	I.H	III.A.2	F.2
41	2	Management Commitment	3.6	MANAGEMENT AND SUPERVISION	2.45 - 5.2	2.5, 2.6	2.2	5.1, 5.6.1, 8.5.1	4.1	I.D.4	I, II, III	A.3
42	2	Documentation Control	3.7	DOCUMENTATION AND RECORDS	4.6	2.11.1	1.6	4.2	4.3.1	I.P.2	III.A.1	A.8
43	2	Record Keeping	3.7	DOCUMENTATION AND RECORDS	4.6	2.11.4	1.6	4.2	4.3.1	I.C, I.I, I.P.1	III.A.1	A.6
44	2	Management of Incidents, Product Withdrawal and product Recall	3.8	RECALL PROCEDURES	2.12.4 - 2.12.5 - 2.13	2.14	2.3	5.7, 7.10.4	4.3.1	I.H	III.1, III.2	A.4, A.10
45	2	Traceability	3.1	LOT IDENTIFICATION	2.12.1 - 2.12.2 - 2.12.3	2.15	4.18	7.3	4.3.1, 4.6.2	I.H	III.E.4, III.3	I.6
46	2	Training: good manufacturing practices - Raw material Handling, Prep	3.8	TRAINING	2.6	6.1	3.2.4	6.2	4.1.4	I.F, I.K, III.D.1, III.	III.D	A.3, D.7

Codex compared to others food safety standards

Codex: 37 criteria: PRP + HACCP

How well are these criteria incorporated in the following audits?

FPA-SAFE	BRC	IFS	ISO 22000	SQF 2000	AIB	Silliker	NSF
37	37	37	37	37	37	36	36

Audit Comparison

Which Audits, What Criteria

AUDITS COMPARED:

FPA – SAFE
BRC
IFS
ISO 22000
SQF
AIB
Silliker
NSF – Cook & Thurber

COMPARE EACH ON:

Industry/Region

Industries

Regions

Strengths

?

Weakness

?

Other Programs

? (e.g., Quality Mgmt System)

General

Days / Cost

Scoring

Audit Comparison

FPA – SAFE : Supplier Audits for food excellence

Industry/Region

- Food
- US-based mostly
- Can be used in other countries that export to US market

Strengths

- Thorough look at compliance against requirements (more than 600 questions)
- Formulated based on industry professional experience

Weakness

- Text intensive
- Overkill for small operators (4 days audit)

Other Programs beyond Codex-HACCP

- Legislation
- Food defense
- Quality management system based on ISO9000

General

- Non-scoring
- No audit frequency requested
- Cost \$1000 + \$1000 per day

Supplier Audits for Food Excellence

Food Safety Audit Checklist



The FPA-SAFE Program tests knowledge of principles of food safety and quality systems auditing, but does not assess or assure the competency or performance of auditors or constitute the endorsement, approval, or referral of any particular company or Auditee.

Date of Issue	Supersedes Date	Version	Approval	Page Number
08/17/06	06/06/06	4	KPW	1 of 54

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Organization

- Management Responsibility
- Fundamentals
- Food safety & HACCP systems
- Manufacturing quality systems
- Regulatory considerations

Audit Comparison

BRC : Food

Industry/Region

- Food
- Suppliers of British Retailers

Strengths

- Good food safety section in the program
- Auditor qualified per food sectors
- Continuously improvement

Weakness

- Not accepted by retailers from other countries

Other Programs beyond Codex-HACCP

- Quality management system based on ISO9000
- Legislation

General

- 1 to 2 days audit
- Cost per day: \$ 2,500
- Grading system: A to D
- Audit frequency: 12 months



Organization

- HACCP system
- Quality management systems
- Factory environment standards
- Production control
- Process control
- Personnel

Audit Comparison

IFS : Standard for auditing retailer branded food products

Industry/Region

- Food
- European retailers suppliers

Strengths

- Auditor qualified per food sectors
- Continuously improvement

Weakness

- Not accepted by UK retailers

Other Programs beyond Codex-HACCP

- Quality management system based on ISO9000
- Legislation

General

- 1 to 2 days audit. Cost per day: \$2500
- Scoring and grading system: high and basic level
- Audit frequency: 12 to 18 months, score dependant



IFS International Food Standard

Standard for auditing retailer (and wholesaler) branded food products



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1

Organization

- Management of quality system
- Management responsibility
- Resource management
- Product realization
- Measurements, analyses, improvements

Audit Comparison

ISO 22000

Industry/Region

- Food
- International

Strengths

- International

Weakness

- Auditor not food sector specific
- PRP food list is limited
- Changed very slowly

Other Programs beyond Codex-HACCP

- Quality management system based on ISO9000
- Legislation

General

- No scoring
- Audit frequency: 12months

INTERNATIONAL
STANDARD

ISO
22000

First edition
2005-05-01

Food safety management systems —
Requirements for any organization in the
food chain

Systèmes de management de la sécurité des denrées alimentaires —
Exigences pour tout organisme appartenant à la chaîne alimentaire



Reference number
ISO 22000:2005(E)

© ISO 2005

Organization

- Scope
- Normative references
- Terms and definitions
- Food safety management system
- Management Responsibility
- Resource Management
- Planning and realization of safe products
- Validation, verification & improvement of food safety management systems

Audit Comparison

SQF 2000 : general food processing

Industry/Region

- Food
- US based (mostly)

Strengths

- Prerequisite programs deeply detailed
- 3 levels (level 1 - food safety fundamental; level 3 - food safety and quality management)
- Auditor qualified per food sectors

Weakness

- Level 1 does not include HACCP

Other Programs beyond Codex-HACCP

- Quality management system based on ISO9000 on level 3
- Legislation
- Food defense

General

- \$1500 to \$3000 for 1 day audit
- No scoring
- Audit frequency: 12 months



Organization

- Introduction
- Basics of SQF system
- Definitions
- Premises & equipment, construction & design
- Food safety fundamentals, PRP's
- Food safety plan, HACCP plans
- Food quality plan, risk analysis for quality
- Documenting PRP's & SOP's

Audit Comparison

AIB : consolidated standards for Food safety

Industry/Region

- Initial focus Baking Industry - now branching into other categories
- US-based mostly
- Can be used in other countries that export to US market

Strengths

- Strong on pre-requisite program

Weakness

- AIB auditors certified by AIB

Other Programs beyond Codex-HACCP

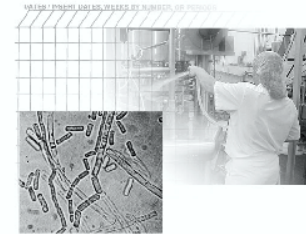
- Legislation
- Quality management system based on ISO9000
- R&D for bakery

General

- \$800 - \$1200
- Scoring system

AIB Consolidated
Standards for

FOOD SAFETY



Organization

- Adequacy of food safety program
- Pest control
- Operational methods & personnel practices
- Maintenance for food safety
- Cleaning practices

Audit Comparison

Silliker : GMP and Food Safety audit

Industry/Region

- Food
- US based (mostly)

Strengths

- Robust food defense questionnaire

Weakness

- Food legality is not covered

Other Programs beyond Codex-HACCP

- Food defense
- Covers most of the Quality management system based on ISO9000

General

- \$1500 to \$3000 for 1 day audit
- Scoring system



AUDIT REPORT

Good Manufacturing Practices and Food Safety Systems Audit

Organization

1. Food safety systems
2. Quality systems
3. Grounds, building, & equipment
4. Pest control
5. Employee practices
6. Receiving, storage, & shipping
7. Plant sanitation
8. Processing
9. Food defense

Audit Comparison

NSF – Cook & Thurber : Food safety quality and food defense

Industry/Region

- Food - mainly poultry and eggs
- US-based (mostly)

Strengths

- Robust food defense program

Weakness

- Auditors are retired individuals that have worked in the food industry

Other Programs beyond Codex-HACCP

- Food defense
- Quality management system based on ISO9000
- Legislation

General

- \$1500 to \$3000 for 1 day audit
- Scoring system



Food Safety, Quality and Food Defense

Expectations and Criteria
for
Food Processing Facilities

Organization

- Administration & regulatory compliance
- HACCP management
- Facilities & equipment
- Sanitation, housekeeping & hygiene
- Rodent & pest control
- Receiving & inventory control
- Process & product evaluation
- Packaging & labeling
- Storage & shipping
- Laboratory support
- Food defense
- Definitions

Different food safety standards comparison matrix

68 criteria: Food Safety + Regulation + Quality Management

I	Type	Keywords	Codes general principles of food hygiene	Codes general principles of food hygiene (Rev. 4-2003) Title	Swedish FPA Safe Version 11	Swedish BRC Version	Swedish IFS Version	ISO 22000:2018	SQF 2000 level	AIB Certified standards for Food Safety	SEIHCER GMP and Food safety system 2	BSF work and standards Food Safety Quality Food doc
1	1	Physical and Chemical Product Contamination Risk	3.2	HANDLING, STORAGE AND TRANSPORT	2.2.3 - 2.4 - 3.5	3.7	5.4	7.2	4.3.1	III.A.1.1	I.C.4, II.F.3, VIII.D	D
18	1	Fabrication-Raw Material Handling Preparation, Processing, Packaging	4.2	PREMISES AND ROOMS	2.1.1-2.7.1	3.2	4.4	4.3	4.3.1	III.A.1	III.D, VI.A	C.1, I
11	1	Floors	4.2	PREMISES AND ROOMS	2.1	3.2.2.2	4.4.3	4.3	4.3.1	IV.D.5	III.D	C.2
12	1	Internal Environment standards	4.2	PREMISES AND ROOMS	2.1	3.2	4.8	4.3	4.3.1	IV.D	III.D	C.3
13	1	Landings	4.2	PREMISES AND ROOMS	2.1	3.1.1	4.8	4.3	4.3.1	IV.A	III.D	C.2
14	1	Self Facilities	4.2	PREMISES AND ROOMS	2.4.7	3.6	3.3	7.2	4.3.1	III.D.2, III.D.3	V	C.5
15	1	Walls	4.2	PREMISES AND ROOMS	2.1	3.2.2.1	4.4.2	4.3	4.3.1	IV.D.5	III.D	C.2
16	1	Windows, glass	4.2	PREMISES AND ROOMS	3.5.3	3.2.2.4	4.4.5	4.3	4.3.1	1.R	I.C.5	C.2
17	1	Legal, Product Flow, Segregation and Traffic control	4.2	PREMISES AND ROOMS	2.16	3.2.1	4.8.3	4.3	4.3.1	III.A.1, III.D.5, III	I.D.1	C.2
19	1	Ceilings/Overheads	4.2	PREMISES AND ROOMS	2.1	3.2.2.3	4.4.4	4.3	4.3.1	IV.D.5	III.D	C.2
20	1	Air conditioning/Ventilation	4.4	FACILITIES	2.1.3	3.2.2.7	4.4.8	4.3	4.3.1	III.A.1, IV.D.8	III.D	C.2
21	1	Lighting	4.4	FACILITIES	2.1	3.2.2.6	4.4.7	4.3	4.3.1	1.R, IV.D.7	III.D	C.2
22	1	Waste/Water Disposal	4.4	FACILITIES	4.8	3.3	4.18	7.2	4.3.1	III.D.7	III.A	E.2
23	1	HACCP	5.1	CONTROL OF FOOD HAZARDS	3.1	1.1	1.2	7.3, 7.18, 8.5, 8.6	4.3.1	1.1	1.A	D
24	1	Prevalence Control	5.2	KEY ASPECTS OF HYGIENE CONTROL SYSTEM	2.5	6.4	7.2	4.3	4.3.1	III.F	V	D.7
25	1	Metal detection / Foreign Body Detection	5.2	KEY ASPECTS OF HYGIENE CONTROL SYSTEM	3.5	4.3	5.5	7.2	4.3.1	III.D.4, III.D.1	VIII.D	G.4
26	1	Product Packaging	5.4	PACKAGING	2.18	4.4	4.5	7.2	4.3.1	III.A.1	III.A	H.1
27	1	Sprayers, water, tank flow	5.5	WATER	2.1.5, 2.1.6	3.3	4.4.3	4.3	4.3.1	IV.D	III.D, VIII.A	F, C.1
28	1	Equipment, cleaning	5.1	MAINTENANCE AND CLEANING	2.1.4 - 2.2.2 - 2.11	3.4	4.15	4.3	4.3.1	1.E, 1.F, III.C.1, IV	I.E, II.G, III.C, VII	C.7, D
29	1	Housekeeping, sanitation, cleaning and hygiene	5.2	CLEANING PROGRAMMES	2.2.1 - 2.2.4 - 2.2.5 - 2.3	3.8	4.3	7.2	4.3.1	1.C, 1.E, III.C.1, III	III.A.5, II.D, VII.A	C.2, D
30	1	External Environment standards	5.3	PEST CONTROL SYSTEMS	2.1.2	3.1	4.2	4.3	4.3.1	IV.D.1	III.A	E.2
31	1	Pest Control	5.3	PEST CONTROL SYSTEMS	2.3	3.18	4.11	7.2	4.3.1	III.B, II.D	III.C, IV	E
32	1	Dusts	5.3	PEST CONTROL SYSTEMS	2.1	3.2.2.5	4.4.6	4.3	4.3.1	IV.D.18	III.D	C.2
33	1	Perimeter and grounds	5.3	PEST CONTROL SYSTEMS	2.1	3.1.2	4.4.1	4.3	4.3.1	IV.A	III.A	C.1
34	1	Personal hygiene, Food Handlers and Others Working in or Visiting Food	2.8	ESTABLISHMENT: PERSONAL HYGIENE	2.5	3.2	3.2	4.3	4.3.1	III.F	I.D.2, I.D.3, V	D.7
35	1	Medical Screening	2.8	HEALTH STATUS	2.5.6	3.3	3.2.3	7.2	4.3.1	III.F.3	-	-
36	1	Transport	3.1	TRANSPORTATION	2.7.3 - 2.7.4 - 2.7.5	3.11	4.13	7.2	4.3.1	III.A.1, III.D.3, III	VI.A	F.1, F.5, I.4
37	1	Illnesses	3.1	PRODUCT INFORMATION AND CONSUMER WA	3.4	4.2	4.28	4.3	4.3.1	III.D.2	1.B	G.6
38	2	Quality Policy Statement	2.1	Role of Government, industry, and consumers	1.1.1	2.2	2.2	4.1, 5.2	4.1	1.B.3	-	-
39	2	Process Control	4.3	EQUIPMENT	2.7.2	5	5.2	8.5.1, 4.4.1	4.3.1	IV.C.7	VIII.D	G.1
40	2	Control of Operations (process and equipment)	5.8	CONTROL OF OPERATION	3.2 - 3.3	5.1	5.7	8.4, 7.8	4.4.5	IV.C.7	VI.A, VII.D	F.2
41	2	Specifications	5.3	INCOMING MATERIAL REQUIREMENTS	4.1	2.11.2	4.1-4.2	7.3	4.2, 4.2.3	1.H	III.A.2	G.3
42	2	Management Commitment	5.6	MANAGEMENT AND SUPERVISION	2.15 - 5.2	2.5, 2.6	2.2	5.1, 5.5.1, 8.5.1	4.1	1.P.4	I, II, III	A.3
43	2	Documentation Control	5.7	DOCUMENTATION AND RECORDS	4.6	2.11.1	1.6	4.2	4.5.1	III.A.1	I, I.P.1	A.8
44	2	Record Keeping	5.7	DOCUMENTATION AND RECORDS	4.6	2.11.4	1.6	4.2	4.5.2	I.C, I.1, I.P.1	III.A.1	A.6
45	2	Management of incidents, Product Withdrawal and product Recall	5.8	RECALL PROCEDURES	2.12.4 - 2.12.5 - 2.19	2.14	5.3	5.7, 7.18.4	4.3	1.H	II.1.1, II.1.2	A.4, A.18
46	2	Traceability	5.1	LOT IDENTIFICATION	2.12.1 - 2.12.2 - 2.12.3	2.13	4.18	7.3	4.5.1, 4.5.2	1.H	III.E, III.1.3	1.6
47	2	Training: good manufacturing practices - Raw material Handling, Preparation	4.8	TRAINING	2.6	5.1	3.2.4	6.2	4.1	1.F, 1.K, III.D.1, III	1.E, II.D	A.3, D.7
48	2	Resource Management	-	-	1.1	2.8	3.1	6.1	4.1	IV.A, IV.D, IV.C, IV	I, II, III	A.9, C, D
49	2	Complaint Handling	-	-	4.3.1	2.15	3.8	8.5.1	4.4	1.L	III.1.4	A.11
50	2	Control of Non-conforming Product	-	-	2.7.8 - 4.4 - 4.7	4.8	5.18	7.18.3, 7.18.1, 8.4	4.3.3	1.H, III.A.1	I.C	G.7
51	2	Customer Returns	-	-	4.4	2.12	5.11	7.2, 7.18.2, 8.4.3	4.3.2	I.C, I.P.3	I.P.3	D.3
52	2	Food Legislation, regulation	-	-	4.3	2.6	2.4	5.1, 5.6	-	1.P.4	-	A.11
53	2	General Documentation Requirements	-	-	5.2	2.5	2.3	7.4.2.3	4.3.4	1.A	-	A.5
54	2	GMP	-	-	-	2.11	1.5	4.2	4.5.1	1.P.2	III.A	A.2, A.6
55	2	Internal Audit	-	-	-	4.18	4.9	7.8	4.3	-	-	-
56	2	Internal communication	-	-	4.1	2.4.3	2.4, 3.2.4	5.1, 5.2	4.1	1.P.4	-	A.1, D.3
57	2	Maintenance, preventive plan maintenance	-	-	2.47	3.5	4.14	8.2	4.3	1.D, 1.5, IV.C	III.G	C.3
58	2	Management of regulatory inspection process	-	-	5.3	-	-	-	-	1.O	-	-
59	2	Management system	-	-	1.4.4 - 4.8	2.7	2.8	5.8, 8.4, 8.5.1	4.3	1.P.3	-	-
60	2	Organizational Structure, Responsibility and Management authority, job d	-	-	1.1.3	2.4	2.1	5.4, 5.5	4.3	1.A, 1.P.1	III.A.1	A.1
61	2	Procedure	-	-	2.2.3	2.11.3	1.4	4.2	4.3.2	1.P.1	III.A.1	A.2, A.6
62	2	Product Control, good laboratory practices	-	-	2.3 - 4.3	4	5.7	8.5.1	4.3.1, 4.4.1, 4.4	III.A.1	III.H	J
63	2	Product design / Development	-	-	-	4.1	4.3	5.4.1	-	1.A	III.A	D
64	2	Product Inspection and Analysis	-	-	3.2 - 3.3 - 4.5	4.5	5.7	7.8	4.3.1	1.G.1, 1.G.2, 1.G.3	III.E.2, III.E.3	F.2
65	2	Product Release	-	-	-	4.7	5.6	7.18.3	4.4	III.A.1.a	III.A.3	F.3, I.5
66	2	Purchasing	-	-	2.8	2.18	4.4	6.2.2	4.3	1.O	III.E	F.2
67	2	Quality Management System: General requirements	-	-	3.2 - 3.3	2	1.1	4.1, 5.3, 8.5	4.1	1	III.A.1	A.2
68	2	Quality Manual	-	-	1.1.2	2.3	1.3	4.2	4.3.2	1.P.2	III.A	A.2
69	2	Quality Control	-	-	4.2	5.2	5.3	8.4	-	-	-	III.2
70	2	Shelf Stability	-	-	2.7.5 - 2.7.7	4.6	4.12	7.2	4.3.1	III.A.1	VII.D	1.1
71	2	Supplier approval and performance monitoring	-	-	2.8	2.18.1	4.6	8.4	4.2.2	1.O	III.E	D.1
72	2	Calibration and Control of Measuring and Monitoring Devices	-	-	2.14	5.3	4.17	8.2	4.3.1, 4.4.1	IV.C.7	III.F.2	F.3
73	2	Handling Requirements For Specific Materials	-	-	2.3.3	4.2	4.7	7.2	4.3.1	1.G.5, III.A.1.6	I.C, I.D	C.1
74	4	Biosecurity regulation, Food Defense	-	-	2.14	-	-	-	4.3.1	-	1.P.1, IX.A	K
75	4	Change management	-	-	2.15	-	-	-	-	-	-	A.7

Audits Comparison

68 criteria: food safety + regulation + quality management.

How much overlap is there among the audit programs?

FPA-SAFE	BRC	IFS	ISO 22000	SQF 2000	AIB	Silliker	NSF
94%	93%	94%	96%	91%	94%	84%	91%

Food Safety Audit

Calculating Total Cost

$$\begin{array}{l} \text{Hard Costs} \\ \text{Avg fee/brand owner} \\ + (\text{Avg cost auditor/day} \times \text{\# days}) \\ \text{Avg hard costs} \end{array} + \begin{array}{l} \text{Soft Costs} \\ \text{Avg cost 2 staff day} \\ + \text{Avg cost 2 days prep} \\ \text{Avg soft costs} \end{array} = \begin{array}{l} \text{Avg Cost} \\ \text{Per Audit} \\ \text{Per Plant} \end{array}$$

←

$$\begin{array}{l} \text{Avg Cost} \\ \text{Each Audit} \\ \text{Per Plant} \end{array} \times \begin{array}{l} \text{Avg} \\ \text{\# Audits} \\ \text{Per Plant} \end{array} = \begin{array}{l} \text{Avg Cost} \\ \text{All Audits} \\ \text{Per Plant} \end{array}$$

←

$$\begin{array}{l} \text{Avg Cost} \\ \text{All Audits} \\ \text{Per Plant} \end{array} \times \begin{array}{l} \text{\# Plants} \\ \text{Company} \end{array} = \begin{array}{l} \text{TOTAL AUDIT COST} \\ \text{PER COMPANY} \end{array}$$

←

$$\begin{array}{l} \text{Avg Cost} \\ \text{All Audits} \\ \text{Per Company} \end{array} \times \begin{array}{l} \text{\# Plants} \\ \text{Industry} \end{array} = \begin{array}{l} \text{TOTAL AUDIT COST} \\ \text{INDUSTRY (US or GLOBAL)} \end{array}$$

Food Safety Audit

Cost Estimates*

*Using Cargill's avg costs and avg # of audits (3) per plant:

\$7,684 per audit per plant

x 3 audits avg per plant

\$23,052 per plant all audits total*

Current Industry Audit Expense (3 audit avg/plant)

<u>Food Processors</u>	<u>Plants</u>	<u>Total Cost</u>
US	30k	\$700myn
Global (w/US)	126k	\$3byn

→ **\$5 byn/yr
is more realistic**

Industry Expense If If We Agree On An Acceptable Audit

<u>Food Processors</u>	<u>Plants</u>	<u>Total Cost</u>
US	30k	\$250myn
Global (w/US)	126k	\$1byn

Savings BY ELIMINATING

<u>Food Processors</u>	<u>Plants</u>
US	30k
Global (w/US)	126k

<u>Total Cost</u>
\$450myn
\$2byn

Savings

→ ***\$4 byn/yr
is more realistic***



(*Cargill's 850 plants are "lower risk" commodities; your company avg totals may be higher)

Food Safety Audits

Impact of Multiple Audits

- **Increased Cost**
 - ✓ **Minimum estimated “non-value” spend by supply chain \$2 Byn annually**
- **Decreased focus and misallocated resources**
 - ✓ **This puts consumers (and therefore us) at risk**
- **Does it make us safer?**
 - ✓ **You can buy (or be sold) multiple insurance policies on the same assets, but you can only collect once...so do multiple policies make you safer?**
- **Must defuse polarization of the supply chain into camps of audit advocates seeking to “harmonize” everybody else to their audit**

THANKS FOR YOUR ATTENTION