

FFI Report

Supplemental Resource – Review of ISO Terms and Definitions Related to Food Fraud, Food Defense or Food Defence, Food Protection, and Food Integrity with Proposed Adapted Definitions (Working Paper)

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By John W Spink

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ABSTRACT

1 This paper presents a comprehensive review
2 of the International Standards Organization
3 (ISO) definitions related to food fraud, food
4 defense or food defence, food protection, and
5 food integrity. It explores the existing terms in
6 ISO standards and offers adapted definitions
7 based on these frameworks. Terms like "food
8 fraud" are not defined but have been well-
9 established in ISO standards. On the other
10 hand, the definitions of "food defense," "food
11 protection," and "food integrity" have not been
12 defined and have been less clearly
13 established.

14 The adapted definition of "food fraud" closely
15 aligns with previously established definitions.
16 This research highlights that the existing
17 definitions for "food defense" and "food

18 protection" fall short of industry practices. The
19 paper suggests that future ISO definitions
20 should reflect current industry applications.
21 Furthermore, the study discusses the need for
22 a more precise ISO definition of "food
23 integrity," offering two potential
24 interpretations – one focusing narrowly on the
25 food product and another encompassing
26 broader organizational responsibility.

27 The research concludes that while ISO-
28 derived definitions can serve as an
29 international, consensus-based foundation, it
30 is most efficient for them to be refined to
31 match the evolving needs of the food safety
32 and security sectors. This report proposed a
33 set of adapted definitions.

- 34 • **Food Fraud (Option 1, Adapted ISO** 57 • **Food Defense (Option 2 – defined by**
- 35 **definition):** *wrongful or criminal* 58 **GFSI):** “The process to ensure the security
- 36 *deception that utilizes food for financial or* 59 *of food, food ingredients, feed or food*
- 37 *personal gain [countermeasures are “food* 60 *packaging from all forms of intentional*
- 38 *fraud prevention”]* 61 *malicious attack including ideologically*
- 39 • **Food Fraud (Option 2, Defined by GFSI):** 62 *motivated attack leading to contamination*
- 40 “a collective term encompassing the 63 *or unsafe product.” (REF) (GFSI v2024)*
- 41 deliberate and intentional substitution, 64 • **Food Protection (Adapted ISO**
- 42 addition, tampering or misrepresentation 65 **definition):** *measures that safeguard and*
- 43 of food, food ingredients, feed, food 66 *enable an **organization** to reduce the*
- 44 packaging or labeling, product information 67 ***impact** of potential **disruption** of food;*
- 45 or false or misleading statement made 68 *Note: the scope is beyond public health*
- 46 about a product for economic gain that 69 *harms to any type of disruption.*
- 47 could impact consumer health.” [1] 70 • **Food Integrity (Option 1, Adapted ISO**
- 48 • **Food Fraud (Option 3, Scholarly** 71 **definition):** *the property of being*
- 49 **definition):** “intentional deception for 72 *complete and unaltered.*
- 50 economic gain using food.” [2] 73 • **Food Integrity (Option 2, Adapted ISO**
- 51 • **Food Defense (Adapted ISO definition –** 74 **definition):** *the degree to which a set of*
- 52 **extended version):** *measures that* 75 *inherent characteristics fulfills*
- 53 *safeguard and enable an **organization** to* 76 *requirements of being complete and*
- 54 *reduce the **impact** of a potential* 77 *unaltered as well as in terms of*
- 55 *disruption of one's food against some* 78 *characteristics and requirements.*
- 56 *injury attempted by another.[1]*

79

80 **Keywords:** “Food Fraud,” “Food Defense,” “Food Protection,” “Food Integrity,” “ISO Standards,”
 81 “International Standards Organization (ISO),” “Food Safety Management”

82

83

84 INTRODUCTION

85 This report is a comprehensive review of the International Standards Organization (ISO) formally
 86 published in the "Terms & Definitions" sections. This also introduces commentary on how the terms
 87 are mentioned or used in other sections, such as the introduction or the main body of the standards.
 88 The scope of work was to support food safety-related standards that protect products from any type
 89 of harm to humans, whether intentional or unintentional.

90 There is a need to review "food fraud" and "food defense" or "food defence" since both terms are
 91 being implemented in a wide range of ISO activities. Although there is always value in formalizing the
 92 definition, there is less of a need for an ISO definition of "food protection" or "food integrity."

93

94 BACKGROUND

95

96 The Role of ISO and Expert Contributions in Standardization

97 The International Organization for Standardization (ISO) is the world’s leading body responsible for
98 developing and publishing international standards across multiple industries. [3] These standards
99 ensure consistency in products, services, processes, and systems, supporting quality, safety, and
100 efficiency globally. However, ISO itself does not conduct certification; this is handled by accredited
101 third-party organizations.

102 ISO operates through a network of national standards bodies, bringing together experts from different
103 sectors to establish globally recognized benchmarks. For instance, in the United States, the
104 American National Standards Institute (ANSI) represents the country’s participation in international
105 standardization efforts. Established in 1918 by government agencies and technical societies, ANSI
106 plays a crucial role in shaping voluntary standards that impact industries nationwide.

107 ISO's standards development process relies heavily on the contributions of technical experts who
108 bring industry knowledge, scientific expertise, and practical experience to the table. These experts
109 participate in Technical Committees (TCs), Subcommittees (SCs), and Working Groups (WGs),
110 where they collaborate on drafting, revising, and refining standards.

111 Experts come from a wide range of backgrounds, including industry professionals, researchers,
112 government representatives, and consumer organizations. Their collective expertise ensures that
113 ISO standards are both technically sound and aligned with industry needs.

114

115

116 Ongoing Revisions to ISO 22000:2018 and ISO/DIS 22002-100 for 117 Enhanced Food Safety Management

118 As of February 2025, the International Organization for Standardization (ISO) is actively
119 revising its food safety management standards, particularly ISO 22000:2018 and the draft
120 ISO/DIS 22002-100. These revisions aim to enhance and formalize requirements related to
121 food fraud and food defense.¹

122 ISO 22000:2018, which outlines the criteria for a food safety management system, is
123 currently an “Approved Work Item” (AWI) undergoing revision. The project, designated as
124 ISO/AWI 22000, entered the preparatory stage (stage 20.00) in September 2024. The
125 subsequent step, “20.20 Working Draft (WD) Study Initiated,” is anticipated but has not yet
126 commenced. This revision is expected to introduce more comprehensive guidelines on
127 managing food fraud and food defense within food safety management systems. [4]

128 The draft standard ISO/DIS 22002-100, titled “Prerequisite Programmes on Food Safety—
129 Part 100: PRP Requirements Common for Food, Feed, and Packaging Supply Chain,” is also
130 under development. The “Draft International Standard” (DIS) is in the “enquiry” phase with ISO
131 members. This document aims to establish common requirements for prerequisite programs
132 (PRPs) across the food, feed, and packaging sectors to assist in controlling food safety
133 hazards. In food safety management, a “**prerequisite program**” is defined in ISO 22000 as
134 “basic conditions and activities that are necessary within the organization (3.31) and
135 throughout the food chain (3.20) to maintain food safety.” [5] The draft reached the enquiry
136 phase (stage 40.60) with the close of voting on June 28, 2024. Publication of the finalized ISO
137 22002 series, including Part 100, is anticipated by April or May 2025. [6] The ISO/DIS 22002-
138 100 compliance requirements for “food fraud” are provided in the Appendix. For here, in the
139 background section, it is important to note that the draft standard has compliance requirements,
140 however there is no formal or even informal definition of “food fraud.” It is not stated, but it is
141 assumed that terms that are not defined rely on everyday usage, an external reference glossary, or a
142 lexicon. The source of the definition is not defined and thus could be confusing depending on the
143 definition that a user may choose.

¹ The author is a work group voting member “Expert” for ISO TC 292 Work Group 1 on vocabulary (ISO 22300), Work Group 2 on product authentication (ISO 22380 series), and Work Group 3 on physical security (ISO 28000 and others). ISO 22300 and ISO 22380 includes the requirements and definition of “product fraud” and “authentic product”. He is also a voting member and expert for ISO/TC 34 Food Products / Sub-Committee 17 Management systems for food safety (ISO 22000). ISO 22000 includes the requirements and definition of “food fraud” and “food defense” or “food defence.” An ISO work group “expert” is an individual with specialized knowledge in a specific area who actively participates in the development of an ISO standard within a working group, contributing their expertise to draft and review documents, provide technical input, and work towards achieving consensus on the standard's content, representing their personal knowledge rather than a specific organization or country.

144 Published ISO “Terms & Definitions” Related to Food Fraud, Food 145 Defense, Food Protection, and Food Integrity

146 There are no "published" "Terms & Definitions" for these specific terms in publicly available
147 standards or draft international standards, though there are related terms and words that apply.
148 While these terms are mentioned in published standards, including required compliance. For
149 example, there are no formal definitions of "food fraud," "food defense," or "food defense," and there
150 are no formal definitions of "food protection," "food fraud," and "food integrity." Definitions for these
151 terms can be derived from the root terms.

152 Some terms can be derived from their root terms. Some standards are directly or indirectly
153 applicable standards, such as ISO 22000 for "food defense" and "food fraud" and ISO 22380 for
154 "product fraud." [7, 8] For example, "food defence" can be derived from the root terms are "food" and
155 "defense" or "security." Also, more directly, “food fraud” can be derived from adding the “food”
156 definition to “product fraud.” This research project was created to only consider ISO-published terms
157 and not any laws, regulations, standards, certifications, or common practices.

158 The term and definition of "food" have been published. To start the research, the definition of food is
159 provided. There were nine results of definitions of food with the key focus on Technical Committee
160 34 and specifically Work Group 34 in ISO 22000 Food Safety Management. [5] The broad term “food”
161 includes the ingredients such as “feed.”

- 162 • **"Food:** "substance (ingredient), whether processed, semi-processed or raw, which is
163 intended for consumption, and includes drink, chewing gum and any substance which has
164 been used in the manufacture, preparation or treatment of "food" but does not include
165 cosmetics or tobacco or substances (ingredients) used only as drugs; Note 1 to entry:
166 Distinctions are made in this document between the terms food (3.18), feed (3.16) and
167 animal food (3.19): food is intended for consumption by humans and animals, and includes
168 feed and animal food; feed is intended to be fed to food-producing animals; animal food is
169 intended to be fed to non-food-producing animals, such as pets." (SOURCE: CAC/GL
170 81-2013, modified — The word "human" has been deleted; ISO 22000:2018, 3.18)

171

172 Widely Adopted definitions of Food Fraud, Food Defense, and Related 173 Terms

174 While these terms are not clearly published in ISO standards, they have been in use for over ten years.
175 Research papers have reviewed the development of terms such as food fraud and also surveyed the
176 everyday use of the terms. [2, 9] Specifically, the food industry standards are based on the Global
177 Food Safety Initiative (GFSI), including FSSC 22000, BRC/ BRCGS, IFS, SQF, and others. [1] (GFSI)
178 Also, Codex Alimentarius – the "world food code" – has been creating a Discussion Paper on Food
179 Fraud that includes terms and definitions since at least 2014. [10] Other entities, such as the U.S.
180 Food and Drug Administration, the European Commission, the Food Authenticity Network, and
181 INTERPOL/ Europol, have created at least working definitions of the terms. [10-13] The various

182 definitions are very similar in scope. Still, there is confusion since, in some cases, they do not fully
183 agree.

184 The Global Food Safety Initiative (GFSI) is an especially important consideration regarding definitions
185 of key terms based on the widely adopted standards and certifications. [14] GFSI is the benchmark
186 for food safety standards such as BRC/BRCGS, FSSC 22000, IFS, SQF, and others. In 2018, the GFSI
187 required compliance for food fraud prevention. This is NOT optional in the nearly universally adopted
188 Food Safety Management System (FSMS) standards. Since 2014, GFSI has had a definition of “food
189 fraud” and “food defense” that has been the foundation for compliance. Thus, the world food trade
190 has already adopted and implemented systems based on this definition from GFSI version 2024:

- 191 ○ **Food Fraud (defined by GFSI):** “a collective term encompassing the deliberate and
192 intentional substitution, addition, tampering or misrepresentation of food, food ingredients,
193 feed, food packaging or labeling, product information or false or misleading statement made
194 about a product for economic gain that could impact consumer health.” [1]

195 GFSI also provides a list of the types of food fraud in the technical document titled “Tackling Food
196 Fraud Through Food Safety Management Systems.” [15] The types of food fraud were published in a
197 table with definitions and application examples and include: dilution, substitution, concealment,
198 unapproved enhancement, mislabeling or misbranding, gray market, theft or diversion, and
199 intellectual property rights infringement of counterfeiting (IP) (See the GFSI technical document for
200 more details). [15]

201 For reference and consideration, the widely-adopted practitioner usage definitions of these terms
202 are presented (TABLE): [1, 9, 16]

203

204 *Table 1: Review of General Adopted Definitions and Examples of Key Food Risk Terms Including GFSI definitions: [1, 9, 16]*

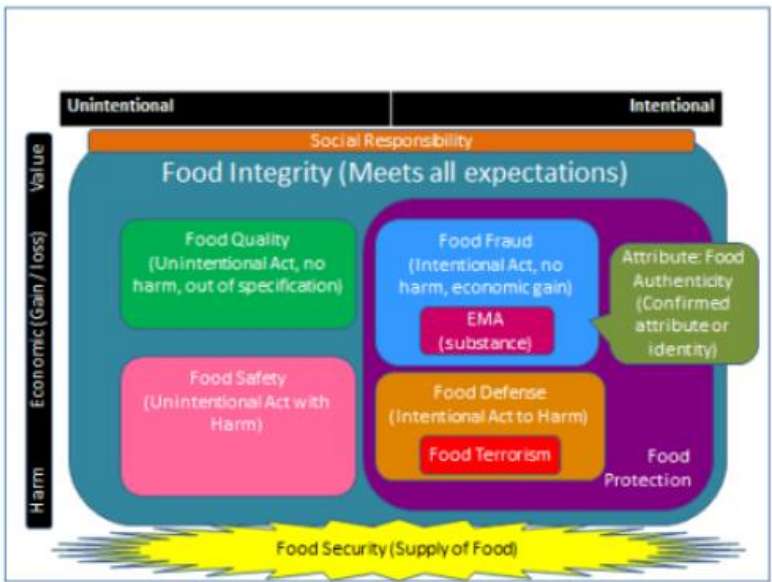
Term	Quoted Short Definition	Application/Example	GFSI Definition (Version 2024, with Page Number)
Food Fraud	“Intentional deception for economic gain using food” (Journal of Food Science, 2011, p.2706)	Melamine added to ground meat to deceive protein content tests	Deliberate substitution, tampering, and misrepresentation for economic gain impacting consumer health (p.6)
Food Authenticity	“Ensuring food is of expected nature, substance, and quality” (DEFRA, 2014, p.2707)	Verifying halal food for religious groups	NA
Food Integrity	“The product meets specified safety, authenticity, and quality” (EU Food Integrity Project, 2017, p.2707)	Ensuring European cheese authenticity	NA

Food Defense	“Protect against intentional acts of harm” (GFSI, 2017, p.2707)	Tampering with food by disgruntled employees	Ensuring the security of food from malicious contamination (p.6)
Food Protection	“Address food safety and defense for unintentional and deliberate contamination” (FDA, 2007, p.2707)	Integrating food safety practices	NA
Other Related Terms			
Economically Motivated Adulteration (EMA)	“Fraudulent” substitution or addition for economic gain with potential health risk” (FDA, 2009, p.2707)	Dilution of juice with water	NA
Food Safety	“Assurance food will not cause harm if consumed as intended (FAO, 2017, p.2707)	Monitoring food temperature in transport	Assurance food will not cause adverse health effects if used as intended (p.6)
Food Quality	“Attributes influencing product value, including spoilage and processing methods” (FAO, 2017, p.2707)	Checking expiration date accuracy	NA

205

206 The relationship between the terms is presented (Figure): [17]

207



208

209 Figure 1: Food Risk Matrix - Expanded to include Food Integrity, Food Protection, and Food Authenticity. [17]

210

211 Since there are no current published ISO terms, this project concluded with the development of
212 adapted, summary definitions of these key terms and definitions.

213

214

215 METHODS

216 Undefined terms can be researched by considering other terms that are already defined in other
217 publications. This applies to ISO terms and definitions. The process often involves conducting a
218 literature review and then proposing a new term that is harmonized with all the other uses.

219 The ISO.org website includes a keyword search function that allows searching their entire website for
220 terms (and their stem) in the "Terms & Definitions" section (formally published and defined) and also
221 in the "Standards." In some cases, the full published standards were searched to gain more insight
222 into the use of the term.

223 For example, a search of ISO standards found mentions of but not explicit definitions of "food
224 defense" or "food defence. The study started by considering root terms which are "food" and
225 "defense." The study also considers anywhere the terms were found in any part of a standard, a
226 guidance document, or anywhere on the ISO website. Next, the study sought other related terms,
227 and, in this case, they were "security," "protection," "integrity," "attack," "threat," or whatever else we
228 found.

229 This process was applied to each term, including food fraud, food defense or food defence, food
230 protection, and food integrity.

231

232 RESULTS and DISCUSSION

233

234 Simply changing keywords in existing definitions did not produce practical, real-world definitions.
235 With the exception of "food fraud"—which was adapted from the ISO 22380 definition of "product
236 fraud" combined with the general definition of "food"—most ISO-derived definitions did not correlate
237 with the practice. It is logical that the term "food fraud" works since the ISO definition of "product
238 fraud" played a key role in shaping the concept within the GFSI Food Fraud Think Tank's early
239 framework. [14]

240 On the other hand, "food defense" has well-established definitions in practice, but its ISO-based
241 derivations were less applicable. Combining the ISO definitions of "food" and "defense" did not align
242 with how the term is actually used. Similarly, "food protection" and "food integrity" have widely

243 accepted meanings that differ significantly from simply merging ISO-defined root words, making ISO-
244 derived definitions even more complex.

245 Before reviewing the results and discussion for each term, there are several formatting notes:

- 246 • Any mention of ISO refers to published standards, definitions, or documents from the
247 website.[18]
- 248 • The results and discussion will be presented by term, and then a summary will be given.
- 249 • Key standards are identified in bold underlining, specifically ISO 22000 and ISO 22300. Any
250 reference to ISO 22000 or ISO 22300, unless specified such as with a year, is a reference to
251 the entire family of standards such as ISO 22380 (ISO 22000 and ISO 22300 are the "parent"
252 document that has many more detailed standards in the "family.") [4, 7, 19]
- 253 • Any numbers in the definitions are a cross-reference to where the term is located in the
254 standard (E.g., "(3.1.193)" refers to 3 Terms & Definitions, Section 1 Risk Terms, and then this
255 is the 193rd term defined in this standard).
- 256 • The consideration of ISO/ DIS 22002-100 was intentionally limited. This is still in the draft
257 phase, and details could still be changed before the final standard is published. It was noted
258 that while there are sections that detail the expectations, there is currently no definition of
259 "food fraud" or "food defense."
- 260 • For the adjusted definitions that are derived, they use a base ISO definition, and then added
261 or adjusted words are noted with emphasis, such as "<food>" where the word "food" has
262 been inserted.

263

264 Part 1 – Food Fraud

265 This is the search for "food fraud."

- 266 • Search Terms & Definitions: "food fraud"; Results: no listing.
- 267 • Search Standards: "food fraud": Results: 14
 - 268 ○ Note: This is peculiar because there is no definition, but this term is found in other
269 discussions. It appears that the term definition is accepted as already existing.

270 Next, there was a broader search on "fraud."

- 271 • Search Terms & Definitions: "fraud": Results: 221
- 272 • Search Standards: "Fraud"; Results: 5

273 This led to a search for the "product fraud" term.

- 274 • Search Terms & Definitions: "product fraud": Results: 1
- 275 • Search Standards: "Product Fraud": Results: 9

276 The definition is provided here.

- 277 • **Product fraud** (ISO 22300, 3.2.192): "wrongful or criminal deception that utilizes material goods
278 (3.1.149) for financial or personal gain; Note 1 to entry: Fraud means wrongful or criminal

279 deception intended to result in financial or personal gain that creates social or economic harm;
280 Note 2 to entry: Products include electronic media carried on material goods; Note 3 to entry:
281 Fraud related to digitally transmitted electronic media shall be considered separately."

282 Combining the current ISO terms and definitions (quotes represent the text of a published standard,
283 “<” represents a clarification in the published quote, and “[“represents the edit for the new
284 definitions).

- 285 • **Food Fraud² (Adapted ISO definition):** “wrongful or criminal deception that utilizes food for
286 financial or personal gain [countermeasures are “food fraud prevention”].
- 287 • **Food Fraud (Option 2, Defined by GFSI):** “a collective term encompassing the deliberate and
288 intentional substitution, addition, tampering or misrepresentation of food, food ingredients,
289 feed, food packaging or labeling, product information or false or misleading statement made
290 about a product for economic gain that could impact consumer health.” [1]
- 291 • **Food Fraud (Option 3, Scholarly definition):** “intentional deception for economic gain using
292 food.” [2]

293 **Summary:** This definition of food fraud is nearly identical to the ideas presented in the most widely
294 adopted definitions. In part, this correlation should not be a surprise since the definition of product
295 fraud in ISO 22300 was fundamental to many of the early definitions of food fraud, such as Spink &
296 Moyer (2011) and the Global Food Safety Initiative (GFSI). [1, 2] To provide more clarity, it would be
297 helpful to include examples of the types of food fraud. Many standards or codes include types such
298 as in ISO 22380, GFSI, and the Codex Electronic Working Group draft guidance, among others.

299

300 Part 1 – Food Defense

301 This is a search for "food defense."

- 302 • Search Terms & Definitions: "Food defense" or "Food Defence"; Results: no listing.
- 303 • Search Standards: "Food defense" or "Food Defence"; Results: 7 and 9

304 Next, there was a more basic search for "defense/ defence."

- 305 • Search Terms & Definitions: "defense/ defence" – there were only four entries, and two were the
306 same.
- 307 • Search General: "defense" or "defence"; Result: 292

308 For reference, the most applicable definition is included here. The key terms in the definition are also
309 defined for a complex definition.

² Note: The most common general definition of “**food fraud**” is “intentional deception for economic gain using food.” The definition of “**food fraud**” that applies to the GFSI benchmarking document is “A collective term encompassing the deliberate and intentional substitution, addition, tampering or misrepresentation of food, food ingredients or food packaging, labelling, product information or false or misleading statements made about a product for economic gain that could impact consumer health.”

- 310 • **Self-defense:** "protection (3.1.193) of one's person or property against some injury attempted by
311 another" (SOURCE: **ISO 22300:2021**, 3.1.259; SOURCE: Black's Law Dictionary, ISO 18788:2015,
312 3.69)
- 313 ○ **Protection** (3.2.193): "measures that safeguard and enable an organization (3.1.165) to
314 reduce the impact (3.1.118) of a potential disruption (3.1.75)" (SOURCE: **ISO 22300:2021**)
- 315 ▪ **Organization** (3.1.165): "person or group of people that has its own functions with
316 responsibilities, authorities, and relationships to achieve its objectives (3.1.162);
317 Note 1 to entry: The concept of organization includes, but is not limited to, sole-
318 trader, company, corporation, firm, enterprise, authority, partnership (3.1.173),
319 charity or institution, or part or combination thereof, whether incorporated or not,
320 public or private." (SOURCE: **ISO 22300:2021**)
- 321 ▪ **Impact** (3.1.118): "outcome of a disruption (3.1.75) affecting objectives
322 (3.1.162)" (SOURCE: **ISO 22300:2021**)
- 323 ▪ **Disruption** (3.1.75): "incident (3.1.122), whether anticipated or unanticipated,
324 that causes an unplanned, negative deviation from the expected delivery of
325 products and services (3.1.192) according to an organization's (3.1.165)
326 objectives (3.1.162)" (SOURCE: **ISO 22300:2021**)

327 A key is the concept of injury, harm, or damage, but these definitions all apply to specific situations.

- 328 • **Injury:** "damage to a biological organism caused by physical harm" (ISO 19434:2017, 3.15)
- 329 • **Damage:** "unfavorable change or physical harm that impairs the value, usefulness, condition or
330 normal function or activities" (ISO 6707-4:2021, 3.8.3)
- 331 • **Harm:** "physical injury and/or damage to health or property" (SOURCE: ISO/IEC Guide 51:2014,
332 3.1; ISO 3864-2:2016, 3.5)

333 Combining the Iso definition of "defense" and "food," the combined definition would be (quotes
334 represent the text of a published standard, "<" represent a clarification in the published quote, and
335 "[<"represents the edit for the new definitions):

- 336 • **Food Defence (Option 1, Adapted ISO definition):** "protection (3.1.193) of one's [food] against
337 some injury attempted by another."
- 338 • **Food Defense (Option 1 – Alternate, Adapted ISO definition – extended version):** "<measures
339 that safeguard and enable an organization (3.1.165) to reduce the impact (3.1.118) of a potential
340 disruption> of one's [food] against some injury attempted by another."
- 341 • **Food Defense (Option 2 – defined by GFSI):** "The process to ensure the security of food, food
342 ingredients, feed or food packaging from all forms of intentional malicious attack including
343 ideologically motivated attack leading to contamination or unsafe product." (REF) (GFSI v2024)

345 **Summary:** This really does NOT seem to come close to the traditional food industry use of the food
346 defense term. A new ISO food defense definition should build upon the current terms but be a new
347 definition aligned with the current food industry and regulatory application.

348

349 Part 2 – Food Protection

350 This is a search for "food protection."

- 351 • Search Terms & Definitions: "food protection;" Results: no listing.
- 352 • Search Standards: "Food Protection": Results: zero – only the titles of journals in the references.

353 Next, the search was broadened to just "protection."

- 354 • Search Terms & Definitions: "protection" – there were only nine definitions, none from ISO 22000
355 Food Safety and one in ISO 22300 Product Fraud.
- 356 • Search Standards: "protection"; Results: 6000+

357 The most applicable definition is included here.

- 358 • **Protection:** "measures that safeguard and enable an organization (3.1.165) to reduce the impact
359 (3.1.118) of a potential disruption (3.1.75)" (SOURCE: **ISO 22300:2021**, 3.1.193)

360 The food defense and food protection concepts have been applied to public health hazards. So
361 related terms were searched to possibly narrow the scope.

- 362 • Search: "hazard;" Result: 155 terms but not in ISO 22000 or ISO 22300

363 The definition is provided here.

- 364 • **Hazard:** "potential source of harm" (SOURCE: ISO/TS 18683:2021, 3.1.11)
 - 365 ○ Note: any harm to public health or human illness.
 - 366 ○ ISO 30000 Ships and marine technology (and other building-related standards) identifies
367 a **hazard** as: "source or situation with a potential for harm in terms of human injury or ill
368 health (both short and long term), damage to property, damage to the environment, or a
369 combination of these" (SOURCE: ISO 30000:2009, 3.4)

370 To further explore hazards, here is a review of ISO 22000:

- 371 • **Food safety hazard (3.22):** "biological, chemical or physical agent in food (3.18) with the
372 potential to cause an **adverse health effect**; Note 1 to entry: The term "hazard" is not to be
373 confused with the term "risk" (3.39) which, in the context of food safety, means a function of the
374 probability of an adverse health effect (e.g. becoming diseased) and the severity of that effect
375 (e.g. death, hospitalization) when exposed to a specified hazard." (SOURCE: CAC/RCP 1-1969)
 - 376 ○ The "adverse health effect" is not defined.
 - 377 ○ This clearly states a difference between "hazard" and "risk."

378 Combining the current ISO terms and definitions (quotes represent the text of a published standard,
379 "<" represents a clarification in the published quote, and "[<" represents the edit for the new
380 definitions).

- 381 • **Food Protection (Adapted ISO definition):** "measures that safeguard and enable an
382 organization (3.1.165) to reduce the impact (3.1.118) of a potential disruption (3.1.75) [of food]."
383 ○ Note: the scope is beyond public health harms to any type of disruption.

384 **Summary:** This really does NOT come close to the traditional food industry's use of the food
385 protection term. Another term could possibly be added to narrow the focus to any unintentional or
386 intentional food safety hazard's root cause. This would exclude reducing the disruptions from food
387 quality incidents.

388

389 Part 4 – Food Integrity

390 Food integrity is included here since it has recently been used in the food safety related context.
391 Some issues that are outside ISO definitions that add complexity for companies are "product
392 integrity," "organizational integrity," "brand integrity," "brand protection," "management integrity," and
393 other corporate social responsibility attributes.ⁱ

394 There are different conclusions for the definition of "food integrity" based on the initial scope of
395 focus. One focus is narrowed down to the product's functional characteristics. Another focus is
396 broader, including the "organization reputation" or product-related "brand reputation."

397 This is the search for "food integrity."

- 398 • Search Terms & Definitions: "Food Integrity"; Results: no listing.
- 399 • Search Standards: "Food Integrity": Results: 1
 - 400 ○ Note: There was one mention in that text: "consumer trust, e.g., IBM Food Trust, Trace
 - 401 Alliance, and GS1 pilots. Food integrity assurance and fraud countermeasures IGP,
 - 402 protected marine species and other high-value products." [Note: the text of the ISO
 - 403 standard assumes a high level of reader expertise and familiarity with concepts and
 - 404 abbreviations such as IBM, Food Trust, Trace Alliance, and GS1.]

405 Next, to find more possible options, there was a search for "integrity."

- 406 • Search Terms & Definitions: "Integrity;" Results: 2000+
- 407 • Search Standards: "Integrity"; Results: 289

408 This term has more variations, so several of the base definitions are provided. However, they are only
409 applied to ISO standards related to security, not a holistic application.

- 410 • **Integrity:** "quality of being complete and unaltered" (SOURCE: ISO 13008:2012 Information and
411 documentation — Digital records, 3.11; ISO 11506:2017, 3.1 Document management
412 applications — Archiving of electronic data)
- 413 • **Integrity:** "property of accuracy and completeness" (SOURCE: ISO/IEC 27000:2018 Information
414 technology — Security techniques; ISO/IEC TR 27550:2019 Information technology — Security
415 techniques, 3.5)
- 416 • **Integrity:** "property that data has not been altered or destroyed in an unauthorized manner"
417 (SOURCE: ISO 7498-2 Information processing systems — Open Systems Interconnection; ISO
418 21091:2013 Health informatics — Directory services for healthcare providers, 3.20)

419

420 A broader search was conducted to find definitions that include more specific terms.

421 • Search Terms & Definitions: "Integrity" AND product, food, brand, or material goods; Results:
422 2000+

423 • Search Standards: "Integrity": 289

424

425 Several of the findings are included here.

426 • **Integrity:** "capability of a product to ensure that the state of its system and data are protected
427 from unauthorized modification or deletion either by malicious action or computer error."
428 (SOURCE: ISO/IEC 25010:2023 Information technology — Systems and software Quality, 3.6.2)

429 • **Integrity:** "property of safeguarding the accuracy and completeness of assets; Note 1 to entry:
430 Assets relate to material goods and their primary packaging; Note 2 to entry: Integrity also
431 concerns the associated data, information, or the elements and means for their processing."
432 (SOURCE: **ISO 22300:2018** Authenticity, integrity and trust for products and documents, 3.123;
433 ISO 22383:2020, 3.3)

434 In addition, there are other ways to explain the attributes.

435 • **Quality:** "the degree to which a set of inherent characteristics (3.10.1) of an object (3.6.1) fulfills
436 requirements (3.6.4)" (SOURCE: ISO 9000:2005, 3.1.1)

437 ○ **Characteristic (3.10.1):** "distinguishing feature; Note 3 to entry: There are various
438 classes of characteristics, such as the following: a) physical (e.g., mechanical, electrical,
439 chemical or biological characteristics); b) sensory (e.g., related to smell, touch, taste,
440 sight, hearing); c) behavioral (e.g. courtesy, honesty, veracity); d) temporal (e.g.
441 punctuality, reliability, availability, continuity); e) ergonomic (e.g. physiological
442 characteristic, or related to human safety); f) functional (e.g. maximum speed of an
443 aircraft)." (SOURCE: ISO 9000:2005, 3.1.1)

444 ○ **Object (3.6.1)/ entity/ item:** "anything perceivable or conceivable" (SOURCE: ISO
445 9000:2005, 3.1.1)

446 ○ **Requirement (3.6.4):** "need or expectation that is stated, generally implied or obligatory;
447 Note 1 to entry: "Generally implied" means that it is custom or common practice for the
448 organization (3.2.1) and interested parties (3.2.3) that the need or expectation under
449 consideration is implied; Note 2 to entry: A specified requirement is one that is stated, for
450 example in documented information (3.8.6)." (SOURCE: ISO 9000:2005, 3.1.1)

451 Combining the current ISO terms and definitions. A confusing point is the undefined word "quality"
452 in the definition of integrity, which differs from the defined term in ISO 9000. Two options are
453 provided. Option 1 is a narrower focus on the food product and insinuates to cover intentional acts
454 intended to reduce food quality or food safety. Option 2 is a broader focus that insinuates that the
455 product and all organizational activities are honorable (quotes represent the text of a published
456 standard, "<" represents a clarification in the published quote, and "[<" represents the edit for the new
457 definitions).

458 .

- 459 • **Food Integrity (Option 1, Adapted ISO definition):** “<the property of> of [the food] being
460 complete and unaltered.”
461 • **Food Integrity (Option 2, Adapted definition):** “the <degree to which a set of inherent
462 characteristics fulfills requirements> of [the food] being complete and unaltered <as well as in
463 terms of characteristics and requirements>.”

464 **Summary:** Both definitions of "food integrity" are practical for the two different scopes. A challenge
465 would be to pick one definition that applies universally.

466

467 Part 5 – Brand Protection

468

469 “Brand protection” is included since it is a related term but one that is not usually widely applied to
470 food products. The results were narrowly applied to a marketing term or to the processes to protect
471 against intellectual property rights infringement and counterfeiting. The term “brand” is widely
472 applied to marketing. “Brand protection” has no mentions or references outside the one anti-
473 counterfeit standard. It is worth noting that the overall vocabulary standard for the Technical
474 Committee that oversees the anti-counterfeit concept did not include the “brand protection” term in
475 the full vocabulary standard. “Brand protection” is a term that ISO applies very narrowly to just the
476 anti-counterfeit area.

477

478 This is the search for "Brand protection."

- 479 • Search Terms & Definitions: "Brand Protection"; Results: 1
480 • Search Standards: "Brand Protection": Results: 4

481 The results in the “Terms & Definitions are presented here:

- 482 • **Brand Protection:** “the process of either protecting brands against counterfeiting or other
483 infringement acts, or both” (ISO/TS 22386:2024(en), 3.1.2 -- Security and resilience —
484 Authenticity, integrity, and trust for products and documents — Guidelines for
485 **brand)protection** and enforcement procedures).
486

487 Also, two applications:

- 488 • **Brand Protection Manager:** “an individual who is responsible for strategizing, planning,
489 conducting and evaluating brand protection activities (3.1.3)” (ISO/TS 22386:2024(en), 3.2.1)
490 • **Brand protection activity:** “an event undertaken by a right owner (or on its behalf) for the
491 purpose of brand protection (3.1.2)” (ISO/TS 22386:2024(en), 3.1.3)

492 For consideration, the “Scope” to the standard includes:

- 493 • “This document provides guidelines for establishing and enforcing respective measures for
494 **brand protection**. It supports the development of a **brand protection** strategy and describes

495 a **brand protection** framework for the development, production, and distribution of products
496 and documents. / Applying these guidelines throughout the product lifecycle can facilitate
497 interaction between individuals and organizations involved in **brand protection** activities and
498 can make **brand protection** procedures more effective and efficient. / This document is
499 intended to support the brand owner’s business resilience, brand reputation, and brand value
500 by protecting products, documents, and associated services from counterfeiting and other
501 infringements.

502 A different application seems to have the same definition but a separate term:

- 503 • **Brand piracy:** “use of a brand (3.1) without the brand owner’s permission” (ISO
504 22384:2020(en), 3.2 -- Security and resilience — Authenticity, integrity, and trust for products
505 and documents — Guidelines to establish and monitor a protection plan and its
506 implementation)

507

508 **Brand**

509 Next, to find more possible options, there was a search for "brand."

- 510 • Search Terms & Definitions: “Brand;” Results: 3 (two did not apply: one was for tobacco product
511 and another for a mark on hides or skins)
- 512 • Search Standards: "Brand"; Results: 492

513 The results for this are here:

- 514 • **Brand:** intangible asset, including but not limited to names, terms, signs, symbols, logos, and
515 designs, or a combination of these, intended to identify goods, services, or entities, or a
516 combination of these, creating distinctive images and associations in the minds of
517 stakeholders (3.1.2), thereby generating economic benefit/values (ISO 20671-1:2021(en), 3.8
518 - Brand evaluation — Part 1: Principles and fundamentals)

519 An application includes:

- 520 • **Brand value:** worth of a brand as an asset for an entity (ISO 20671-1:2021(en), 3.8)
- 521 • **Brand activities:** non-monetary actions and activities associated with the brand that can
522 have a measurable effect on brand strength (ISO 20671-2:2023(en), 3.2)

523 The introduction of the standard provides insight into the application: (ISO 20671-1:2021(en), 3.8)

- 524 • *“Brands are one of the most valuable yet least understood assets.”*
- 525 • *“A brand identifies an entity’s goods, services or the entity itself as distinct from what is*
526 *offered by another entity. A brand can thus be connected to an entity, a product/service,*
527 *lines/portfolios of products, a city, a region, etc. The offering entity can be commercial or not-*
528 *for-profit. In all cases, however, the function of the brand is to establish a distinctive identity*
529 *for the entity in the market. In practice this has traditionally implied communicating the*
530 *unique benefit(s) of the entity’s goods or services as compared to other goods or services that*
531 *might otherwise be seen as similar. This benefit(s) can be functional as well as emotional or*

532 *social. Increasingly, brands also seek identification with experiences that are connected with*
533 *an entity through its actions, services or other operations. These experiences go beyond the*
534 *mere usage of the product or service and lead to a higher-level engagement with them.*
535 *Brands ultimately exist in the minds of stakeholders as the impressions, benefits, and*
536 *experiences that they associate with a good or service.”*

537 • *“Brands have value to both, the entities that have rights to the brand and to stakeholders who*
538 *value the functional/emotional/social benefits and experiences they associate with the*
539 *brand. The primary purposes of a brand are to increase the total business value of the brand-*
540 *using entity, reduce risk, and extend the sustainable existence of the brand-owning entity.*
541 *Even though brands vary markedly in terms of the benefits or experiences that define them, it*
542 *is undisputable that a strong brand can bring financial benefits. In practice, strong brands*
543 *attract customers and add revenue through increased price and/or volume premiums*
544 *including repeat purchase loyalty. More broadly it is also the case that brands can reduce*
545 *costs and create a competitive advantage in the minds of stakeholders. A brand thus has an*
546 *impact on revenue and profitability and can influence corporate value.”*

547 The ISO application in the brand standard is broadly applied to all value whereas “brand protection”
548 in the “Security & Resilience” standard only applies to intellectual property rights violations of
549 counterfeit infringement.

550

551 **Product Protection**

552 Although not defined or applied in more detail, some anti-counterfeiting standards referred to
553 “product protection” seemingly interchangeably with “brand protection.”

- 554 • Search Terms & Definitions: “Product protection:” Results: 1
- 555 • Search Standards: "Product protection"; Results: 20

556 Note that the term “product protection” had only one definition, and it did not apply to products such
557 as food.

- 558 • **Product protection** / environmental protection: protection of a product against climatic or
559 other adverse conditions during its use, transport, or storage; ISO/IEC Guide 2:2004(en), 2.7
560 -- Standardization and related activities — General vocabulary)

561 Also, other mentions in standards included one:

- 562 • ISO 22384:2020(en) - Security and resilience — Authenticity, integrity, and trust for products
563 and documents — Guidelines to establish and monitor a **protection plan** and its
564 implementation
- 565 • **Protection plan:** “a set of coordinated measures to treat risks to an asset or a set of assets.”
- 566 • 5.1 Establish project team
- 567 • “The organization should set up the work on developing **product protection** measures as a
568 project. The organization should select a project team that includes internal...”

569

570 **Summary:** The terms of “brand protection” or “product protection” do not apply to the food fraud,
571 food defense, or related food topics. Specifically, “brand protection” only applies to intellectual
572 property rights and counterfeit infringement.

573

574 CONCLUSION

575

576 When new concepts emerge, formal ISO-published "Terms & Definitions" are often unavailable.
577 However, definitions can be derived from existing ISO standards or foundational terms. To prevent
578 misunderstandings, it is essential to thoroughly analyze how these terms are used across various
579 laws, regulations, industry standards, certifications, and everyday language before finalizing an
580 official ISO definition.

581 For instance, if non-ISO references are not considered, then the term "food fraud" can be directly
582 adapted from the definition of "product fraud" by simply substituting "product" with "food." However,
583 future ISO definitions for food defense, food protection, and food integrity should be based on
584 established industry practices rather than solely relying on previously defined ISO terms or unrelated
585 standards. This approach ensures greater relevance and alignment with real-world applications.

586

587 ISO Committee Approaches for Defining Food Fraud

588 When developing definitions for key terms such as "food fraud" and “food defense,” an ISO
589 committee has several viable options to consider. Below, we explore the most common
590 methods for creating standardized definitions in ISO-based systems:

591 1. ISO-Based Definitions

592 One approach is to build a definition based on existing related ISO terms. For "food fraud,"
593 this would involve merging the ISO definition of "food" with that of "product fraud." This
594 ensures consistency across ISO standards and helps integrate food fraud into existing
595 standards frameworks.

596 2. Using Standard Definitions

597 Another effective strategy is to adopt a widely recognized definition from other established
598 standards. For example, several ISO definitions cite Black’s Law Dictionary or other outside
599 ISO references. For "**food fraud**," ISO could use the **definition of the Global Food Safety**
600 **Initiative (GFSI)**, which is commonly used and already used in industry-wide standards and
601 certifications. GFSI serves as the benchmark for most of the world's leading food safety
602 management systems, including FSSC 22000, BRC/BRCGS, IFS, SQF, and others. GFSI's

603 formal definition of food fraud has been published since 2017 and required for compliance
604 in 2018, along with compliance requirements for vulnerability assessment and prevention
605 strategies.

606 **3. Referencing Existing Standards or Codes**

607 A third approach is to reference definitions from established standards or codes that have
608 already been published. However, many widely adopted standards lack formal definitions
609 for key terms. For instance, the European Committee for Standardization (CEN) has a
610 "working definition," but it was developed solely for an internal working group. Similarly, the
611 U.S. Food and Drug Administration (FDA) provides a "working definition" for "economically
612 motivated adulteration" (EMA) rather than a formal definition of "food fraud." The FDA's EMA
613 definition, created to guide discussions at a 2009 public meeting, categorizes EMA as a
614 specific type of food fraud (adulterant-substance). Meanwhile, Codex Alimentarius
615 (CODEX)—the international food standards body led by the United Nations (UN/FAO) and
616 the World Health Organization (WHO)—has an Electronic Work Group (EWG) focused on
617 food fraud, though their official guidance has yet to be finalized. [10, 12, 13]

618 **4. Citing Published Scholarly Works**

619 Another option is to refer to a published scholarly work such as a journal article. Food fraud
620 was first the subject of a scholarly research project and publication in 2009. A 2024 WTO
621 publication stated: "At present, the most well-known and widely accepted definition of food
622 fraud is by Spink and Moyer (2011): "*Food fraud is a collective term used to encompass the
623 deliberate and intentional substitution, addition, tampering, or misrepresentation of food,
624 food ingredients, food packaging; or false or misleading statements.*" (WTO Illicit Trade in
625 Food referring to [2])

626 **5. Creating a Unique Definition**

627 In most cases, ISO standards may develop their own definitions for very specific
628 management systems or standards. While this is a valid approach, it is not typically
629 necessary in the context of food fraud, as existing definitions provide sufficient clarity.
630 Creating another definition could lead to confusion and inconsistency.

631 This definition has been widely adopted and continues to serve as a foundational reference
632 for food fraud research and policymaking.

633

634 **Appendix – Review of the term “Food Fraud” in ISO standards**

635

636 As of February 18, 2025, this is a list of ISO standards that include the “food fraud” term. It is often a
637 requirement. There is no formal definition of “food fraud” or “food fraud prevention.”

638
639 The ISO 22000 series – specifically ISO 22002-100 – directly addresses “food fraud” and “food fraud
640 prevention.” There is no formal entry in the “Terms & Definitions” section of any standard.

641
642 Other standards mention “food fraud” as an application, such as for blockchain traceability,
643 cannabis products, social responsibility, and molecular biomarker analysis.

644
645 Product fraud is directly addressed and defined in “Security & Resilience,” but the only “food fraud”
646 mention is in a bibliography citation:

647
648 [Legend: A year confirmed when the standard was published. “DIS” is a “draft international standard”
649 that is not finalized. “IWA” is an “international workshop agreement” that is the conclusion of the
650 attendees of that meeting. “TR” is a “technical report” that is created for guidance but is not a formal
651 standard and did not go through the overall ISO approval process.]

- 652
653 • ISO 22380:2018(en) -- Security and resilience — Authenticity, integrity, and trust for
654 products and documents — General principles for product fraud risk and countermeasures
 - 655 ○ Bibliography
 - 656 ▪ ...10 [14] Spink J. Moyer D.C. Defining the Public Health Threat of ***Food***
657 ***Fraud***. Journal of Food Science. 2011, 75 (9), pp. 57...
 - 658 ▪ Others:
 - 659 • [13] Spink J., Moyer D.C., Park H., Heinonen J., Defining the Types
660 of Counterfeiters, Counterfeiting, Offender Organizations. Crime
661 Science Journal. 2013, 2(8), pp. 1–10
 - 662 • [14] Spink J., Moyer D.C., Defining the Public Health Threat of
663 Food Fraud. Journal of Food Science. 2011, 75(9), pp. 57–63
 - 664 • [15] Spink J., Moyer D.C., Park H., Heinonen J., Defining the Types
665 of Counterfeiters, Counterfeiting, Offender Organizations. Crime
666 Science Journal. 2013, 2(8), pp. 1–10
 - 667 • [16] Spink J., Moyer D.C., Park H., Heinonen J., Development of a
668 Product Counterfeiting Clustering Tool (PCICT). Crime Science
669 Journal. 2014, 3(3), pp. 1–8

670
671 Food Safety/ ISO 22000 Series

- 672
673 • ISO/DIS 22002-100(en) -- Prerequisite programmes on food safety — Part 100: PRP
674 requirements common for food, feed, and packaging supply chain
 - 675 ○ [Note: “Food fraud” or “food defense” are not mentioned in the introduction, scope,
676 or terms and definitions. Bullet points are used to preserve the numbering system
677 used in the standard. There are examples of the type of acts for both food fraud and
678 food defense and no definitive or all-inclusive list for both or either term.]
 - 679 ○ **16 Food defense and food fraud**

- 680 ○ '16.1 General
- 681 ○ The organization shall implement and maintain measures to protect products from
- 682 intentional acts that may include, but are not limited to:
- 683 ○ 'a) sabotage and terrorism;
- 684 ○ 'b) mislabeling, counterfeiting and tampering;
- 685 ○ 'c) vandalism and theft.
- 686
- 687 ○ **'16.2 Food defense**
- 688 ○ The organization shall:
- 689 ○ 'a) determine or select the methodology to evaluate the significance of threats;
- 690 ○ 'b) conduct a threat assessment to identify and evaluate potential threats and
- 691 identify and select proportionate mitigation measures covering its processes and
- 692 products;
- 693 ○ 'c) document the threat assessment, mitigation measures, and verification
- 694 procedures in a food defense plan;
- 695 ○ 'd) implement the food defense plan, including effective training, communication,
- 696 and periodic review.
- 697 ○ NOTE: Mitigation measures include building and infrastructure design to prevent
- 698 unauthorized entry; reference checks for personnel; control of confidential
- 699 information; security of storage and production areas; transport and distribution;
- 700 supplier and external provider assurance, including requirements for food defense.
- 701 ○ Annex A contains examples of food Defense measures.
- 702
- 703 ○ **'16.3 Food fraud prevention**
- 704 ○ The organization shall:
- 705 ○ 'a) determine or select the methodology to evaluate the significance of
- 706 vulnerabilities;
- 707 ○ 'b) conduct a food fraud vulnerability assessment identifying potential
- 708 vulnerabilities and identify and select proportionate mitigation measures covering
- 709 its processes and products;
- 710 ○ 'c) document the vulnerability assessment, mitigation measures, and verification
- 711 procedures in a food fraud prevention plan;
- 712 ○ 'd) implement the food fraud prevention plan, including effective training,
- 713 communication, and periodic review.
- 714 ○ NOTE: Factors to consider when conducting a food fraud vulnerability assessment
- 715 include economic vulnerability, historical data, ease of detectability, access to raw
- 716 materials, packaging materials, and finished products in the supply chain;
- 717 relationship with the supplier; supplier and external provider assurance inclusive of
- 718 requirements for food fraud and complexity of the supply chain.
- 719 ○ Annex B contains examples of food fraud mitigation measures.
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- ISO 22000:2018(en) - Food safety management systems — Requirements for any organization in the food chain
 - 4.1 Understanding the organization and its context
 - ..., competitive, market, cultural, social and economic environments, cybersecurity and **food fraud**, food defence and intentional contamination, knowledge and performance of the...
 - ISO/DIS 22002-4(en) -- Prerequisite programmes on food safety — Part 4: Food packaging manufacturing
 - 16.3 **Food fraud**
 - ISO 22003-2:2022(en) -- Food safety — Part 2: Requirements for bodies providing evaluation and certification of products, processes, and services, including an audit of the food safety system
 - C.1 General
 - ..., but not limited to: X X — outsourced processes; — food defence; — **food fraud**.
13. Ability to apply food chain (sub)category practices and vocabulary in relation...
 - ISO 22003-1:2022(en) -- Food safety — Part 1: Requirements for bodies providing audit and certification of food safety management systems
 - C.1 General
 - ..., but not limited to: X X — outsourced processes; — food defence; — **food fraud**.
13. Ability to apply food chain (sub)category practices and vocabulary in relation...
 - ISO/DIS 22002-7(en) - Prerequisite programmes on food safety — Part 7: Retail
 - 16.3 **Food fraud**
 - ISO/DIS 22002-2(en)
 - Prerequisite programmes on food safety — Part 2: Catering
 - 16.3 **Food fraud**
 - ISO/DIS 22002-6(en) - Prerequisite programmes on food safety — Part 6: Feed and animal food production
 - 16.3 **Food fraud**
 - ISO/DIS 22002-1(en) - Prerequisite programmes on food safety — Part 1: Food manufacturing
 - 16.3 **Food fraud**
 - ISO/DIS 22002-5(en) - Prerequisite programmes on food safety — Part 5: Transport and storage
 - 16.3 **Food fraud**

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Other non-ISO 22000 entries:

- ISO/ IWA 37-3:2022(en) - Safety, security, and sustainability of cannabis facilities and operations — Part 3: Good production practices (GPP)
 - Annex B Guidance on applying GPP to cannabis edibles
 - ...retained. Guidance on traceability system design and implementation can be found in ISO 22005. **Food fraud** (—) The organization shall undertake a **food fraud...food fraud ...**

- ISO/TS 26030:2019(en) - Social responsibility and sustainable development — Guidance on using ISO 26000:2010 in the food chain
 - Issue 3: Identification of and demonstration of compliance with applicable legal requirements
 - ...applicable to its activity that covers: — food safety, food quality, food security, **food fraud**, and food defense; — health and safety at work; — management of human resources...

- ISO 17174:2024(en) - Molecular biomarker analysis — DNA barcoding of fish and fish products using defined mitochondrial cytochrome b and cytochrome c oxidase I gene segments
 - Introduction
 - ...authentication of fish products is necessary to ensure consumer protection and the detection of potential **food fraud**.

- ISO/TR 3242:2022(en) - Blockchain and distributed ledger technologies – Use cases
 - 6.3 Supply Chain Cases
 - ...and resilience within the supply chain. Keywords: Food Supply Chain, Agriculture produced **food fraud**, Made in Italy Protection, Italian Manufacturing Protection, Food companies, Food Service...

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ⁱ As a reference, Google AI provides a much broader definition of integrity and the application to products including food: **“Product integrity** is a product’s ability to meet or exceed customer expectations for quality, performance, and durability throughout its life. It can also refer to the wholeness or completeness of a product being produced. Product integrity can involve all aspects of a product’s existence, from production to retirement, and can affect anyone who comes into contact with it.”

As a reference, Google AI provides a related definition: **“Brand integrity** is a measure of how well a company’s values, actions, and communications align with what it promises consumers. It’s about being consistent across all touchpoints, so customers can expect a consistent experience that’s true to the brand’s values. Brands with high integrity are honest and create a replicable experience for customers.”

Harvard Business Review, **“Product integrity** is much broader than basic functionality or technical performance. Customers who have accumulated experience with a product expect new models to balance basic functions and economy with more subtle characteristics. Consumers expect new products to harmonize with their values and lifestyles. Industrial customers expect them to mesh with existing components in a work system or a production process. The extent to which a new product achieves this balance is a measure of its integrity.” / “Product integrity has both an internal and an external dimension. Internal integrity refers to the consistency between a product’s function and its structure: the parts fit smoothly, the components match and work well together, the layout maximizes the available space.” / “External integrity refers to the consistency between a product’s performance and customers’ expectations.” / (<https://hbr.org/1990/11/the-power-of-product-integrity>)

From a ChatGPT prompt developed and refined by the author, Professor Chris Elliott of Queen’s University Belfast offers a more detailed perspective, defining **food integrity** as ensuring that “the food we produce is safe; the food we produce is authentic; it is nutritious; the systems we use to produce our food are sustainable; our food is produced to the highest ethical standards, and we respect the environment and those who work in our food industry.”

The term “food integrity” lacks a single, universally accepted definition. Its interpretation varies among professionals, with some focusing on safety and authenticity, while others emphasize sustainability and ethics. This variability suggests that the definition is more informal and context-dependent, rather than a standardized formal definition.