Risk-Ranking Model for Food Tracing: Results for Commodity-Hazard Pairs

September 2022

Table 1B provides the commodity-hazard pairs associated with each commodity on the Food Traceability List, including criteria scores for criterion 1 through criterion 7 (C1 through C7) and risk score for each commodity-hazard pair. For detailed information on how the criteria scores and the risk score for the commodity-hazard pair are determined, see the reference "Methodological Approach to Developing a Risk-Ranking Model for Food Tracing FSMA Section 204 (21 U.S. Code § 2223). September 2022."

Table 1B. Criteria scores and risk score for each of the commodity-hazard pairs associated with commodities on the Food Traceability List

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C5	C6	C7	Risk Score
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), fresh soft or soft unripened	Campylobacter spp.	0	3	1	1	1	9	0	150
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), fresh soft or soft unripened	Clostridium botulinum and toxin	0	9	1	0	1	9	0	200
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), fresh soft or soft unripened	Listeria monocytogenes	1	9	3	9	9	9	3	430
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), fresh soft or soft unripened	Mycotoxins - Aflatoxin M1	0	9	1	0	3	9	0	220
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), fresh soft or soft unripened	Salmonella spp.	1	9	1	1	1	9	1	230
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), fresh soft or soft unripened	Staphylococcus aureus and toxin	0	3	1	3	3	9	0	190
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	Bacillus cereus and toxin	0	1	1	3	1	9	0	150

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C 5	C6	С7	Risk Score
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	Listeria monocytogenes	1	9	9	9	3	9	9	490
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	Mycotoxins - Aflatoxin M1	0	9	1	0	3	9	0	220
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	Salmonella spp.	1	9	3	1	1	9	0	240
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	Scombroid toxin (Histamine)	0	1	3	1	3	9	0	170
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	Staphylococcus aureus and toxin	0	3	1	1	1	9	0	150
Dairy - Cheese and Cheese Products	Cheese (made from pasteurized milk), soft ripened or semi-soft	STEC O157	1	9	1	1	1	9	3	250
Dairy - Cheese and Cheese Products	Cheese (made from unpasteurized milk), other than hard cheese	Brucella spp.	1	9	1	1	9	1	0	220
Dairy - Cheese and Cheese Products	Cheese (made from unpasteurized milk), other than hard cheese	Listeria monocytogenes	1	9	9	3	9	1	9	410
Dairy - Cheese and Cheese Products	Cheese (made from unpasteurized milk), other than hard cheese	Salmonella spp.	1	9	1	1	3	1	1	170
Dairy - Cheese and Cheese Products	Cheese (made from unpasteurized milk), other than hard cheese	Staphylococcus aureus and toxin	0	3	9	3	9	1	0	250
Dairy - Cheese and Cheese Products	Cheese (made from unpasteurized milk), other than hard cheese	STEC 0157	1	9	1	1	3	1	1	170
Eggs	Shell Eggs	Norovirus	0	3	0	0	3	9	0	150
Eggs	Shell Eggs	Salmonella spp.	9	9	3	3	3	9	9	450

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C5	C6	C7	Risk Score
Nuts and Nut Products	Nut Butters	Listeria monocytogenes	0	9	1	0	1	9	0	200
Nuts and Nut Products	Nut Butters	Mycotoxins - Aflatoxins	1	9	1	0	3	9	0	230
Nuts and Nut Products	Nut Butters	Norovirus	0	3	1	0	1	9	0	140
Nuts and Nut Products	Nut Butters	Salmonella spp.	9	9	3	0	3	9	9	420
Nuts and Nut Products	Nut Butters	Staphylococcus aureus and toxin	0	3	1	0	1	9	1	150
Nuts and Nut Products	Nut Butters	STEC O157	1	9	1	0	1	9	3	240
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Bacillus cereus and toxin	0	1	3	3	1	9	0	170
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Campylobacter spp.	0	3	0	1	1	9	0	140
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Clostridium perfringens and toxin	0	3	1	1	1	9	0	150
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Cryptosporidium parvum or other spp.	0	9	1	0	1	9	0	200
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Cyclospora cayetanensis	0	1	1	0	1	9	0	120
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Hepatitis A virus	0	9	9	0	1	9	0	280

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C 5	C6	C7	Risk Score
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Listeria monocytogenes	1	9	9	3	1	9	1	330
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Norovirus	1	3	1	0	1	9	0	150
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Salmonella spp.	3	9	1	1	1	9	3	270
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Scombroid toxin (Histamine)	1	1	1	0	3	9	1	160
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Shigella spp.	0	9	1	3	1	9	0	230
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	Staphylococcus aureus and toxin	0	3	1	1	1	9	0	150
Prepared Food - Refrigerated and Ready-to-Eat Salads	Ready-to-eat Deli Salads	STEC 0157	0	9	1	3	1	9	0	230
Produce - Fresh Cut	Fruits (fresh-cut)	Campylobacter spp.	0	3	0	1	1	9	0	140
Produce - Fresh Cut	Fruits (fresh-cut)	Cyclospora cayetanensis	0	1	1	0	1	9	0	120
Produce - Fresh Cut	Fruits (fresh-cut)	Giardia spp.	0	3	3	0	1	9	0	160
Produce - Fresh Cut	Fruits (fresh-cut)	Hepatitis A virus	0	9	1	0	1	9	0	200
Produce - Fresh Cut	Fruits (fresh-cut)	Listeria monocytogenes	1	9	3	9	3	9	3	370
Produce - Fresh Cut	Fruits (fresh-cut)	Mycotoxins - Patulin	0	1	3	0	1	9	0	140
Produce - Fresh Cut	Fruits (fresh-cut)	Norovirus	0	3	1	0	1	9	0	140
Produce - Fresh Cut	Fruits (fresh-cut)	Salmonella spp.	1	9	1	3	3	9	3	290
Produce - Fresh Cut	Fruits (fresh-cut)	STEC non-O157	0	3	0	1	1	9	0	140

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C5	C6	C7	Risk Score
Produce - Fresh Cut	Fruits (fresh-cut)	STEC 0157	0	9	1	3	1	9	0	230
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Campylobacter spp.	0	3	1	1	1	9	0	150
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Cryptosporidium parvum or other spp.	0	9	9	0	1	9	0	280
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Cyclospora cayetanensis	1	1	9	0	1	9	9	300
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Giardia spp.	0	3	9	0	1	9	0	220
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Hepatitis A virus	0	9	1	0	1	9	0	200
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Listeria monocytogenes	1	9	3	9	3	9	3	370
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Norovirus	0	3	0	0	1	9	0	130
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Salmonella spp.	3	9	3	9	3	9	3	390
Produce - Fresh Cut	Leafy Greens (fresh-cut)	Shigella spp.	0	9	1	9	1	9	0	290
Produce - Fresh Cut	Leafy Greens (fresh-cut)	STEC non-O157	1	3	3	3	3	9	1	230
Produce - Fresh Cut	Leafy Greens (fresh-cut)	STEC 0157	3	9	1	3	3	9	3	310
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Cyclospora cayetanensis	1	1	1	0	1	9	3	160
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Giardia spp.	0	3	3	0	1	9	0	160
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Listeria monocytogenes	1	9	9	9	3	9	3	430
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Norovirus	0	3	1	0	1	9	0	140
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Salmonella spp.	3	9	1	3	1	9	9	350
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Shigella spp.	0	9	1	3	1	9	0	230
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	STEC O157	1	9	1	1	1	9	1	230
Produce - Fresh Cut	Vegetables other than leafy greens (fresh-cut)	Yersinia pseudotuberculosis	0	9	1	3	1	9	0	230

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C5	C6	C7	Risk Score
Produce - RAC	Cucumbers	Campylobacter spp.	0	3	1	1	1	3	0	90
Produce - RAC	Cucumbers	Listeria monocytogenes	0	9	9	3	3	3	0	270
Produce - RAC	Cucumbers	Norovirus	0	3	0	0	1	3	0	70
Produce - RAC	Cucumbers	Salmonella spp.	9	9	9	3	1	3	9	430
Produce - RAC	Cucumbers	STEC 0157	1	9	1	1	1	3	1	170
Produce - RAC	Herbs (fresh)	Cyclospora cayetanensis	9	1	1	0	3	1	9	240
Produce - RAC	Herbs (fresh)	E. coli, other pathogenic (ETEC)	0	1	3	3	1	1	0	90
Produce - RAC	Herbs (fresh)	Listeria monocytogenes	0	9	1	1	3	1	0	150
Produce - RAC	Herbs (fresh)	Norovirus	0	3	0	0	1	1	0	50
Produce - RAC	Herbs (fresh)	Salmonella spp.	1	9	3	3	3	1	3	230
Produce - RAC	Herbs (fresh)	Shigella spp.	0	9	1	3	1	1	0	150
Produce - RAC	Herbs (fresh)	STEC non-O157	1	3	9	1	1	1	3	190
Produce - RAC	Herbs (fresh)	STEC 0157	1	9	1	1	1	1	3	170
Produce - RAC	Leafy Greens	Campylobacter spp.	0	3	1	1	1	9	0	150
Produce - RAC	Leafy Greens	Clostridium perfringens and toxin	0	3	0	0	1	9	0	130
Produce - RAC	Leafy Greens	Cryptosporidium parvum or other spp.	0	9	3	0	1	9	0	220
Produce - RAC	Leafy Greens	Cyclospora cayetanensis	3	1	9	0	1	9	9	320
Produce - RAC	Leafy Greens	Giardia spp.	0	3	1	0	1	9	0	140
Produce - RAC	Leafy Greens	Hepatitis A virus	0	9	1	0	1	9	0	200
Produce - RAC	Leafy Greens	Listeria monocytogenes	0	9	3	9	3	9	0	330
Produce - RAC	Leafy Greens	Norovirus	0	3	9	0	1	9	0	220
Produce - RAC	Leafy Greens	Salmonella spp.	1	9	3	9	3	9	1	350
Produce - RAC	Leafy Greens	Shigella spp.	0	9	1	1	1	9	0	210
Produce - RAC	Leafy Greens	STEC non-O157	1	3	1	1	3	9	1	190
Produce - RAC	Leafy Greens	STEC 0157	9	9	1	3	3	9	9	430

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C 5	C6	С7	Risk Score
Produce - RAC	Melons	Campylobacter spp.	0	3	1	1	1	9	0	150
Produce - RAC	Melons	Listeria monocytogenes	1	9	3	9	3	9	9	430
Produce - RAC	Melons	Norovirus	0	3	1	0	1	9	0	140
Produce - RAC	Melons	Salmonella spp.	9	9	3	3	1	9	3	370
Produce - RAC	Melons	Shigella spp.	1	9	1	1	1	9	1	230
Produce - RAC	Melons	STEC 0157	0	9	1	1	1	9	0	210
Produce - RAC	Peppers	Listeria monocytogenes	0	9	1	9	3	3	0	250
Produce - RAC	Peppers	Salmonella enterica - Serovar paratyphi	1	9	1	3	1	3	3	210
Produce - RAC	Peppers	Salmonella spp.	9	9	3	3	1	3	9	370
Produce - RAC	Peppers	STEC non-O157	0	3	1	1	1	3	0	90
Produce - RAC	Sprouts	Listeria monocytogenes	1	9	3	3	3	0	3	220
Produce - RAC	Sprouts	Salmonella spp.	9	9	3	9	3	0	9	420
Produce - RAC	Sprouts	STEC non-O157	1	3	1	9	3	0	1	180
Produce - RAC	Sprouts	STEC 0157	1	9	1	9	3	0	3	260
Produce - RAC	Tomatoes	Campylobacter spp.	0	3	0	1	1	9	0	140
Produce - RAC	Tomatoes	Hepatitis A virus	0	9	1	0	1	9	0	200
Produce - RAC	Tomatoes	Listeria monocytogenes	0	9	1	1	3	9	0	230
Produce - RAC	Tomatoes	Norovirus	0	3	9	0	1	9	0	220
Produce - RAC	Tomatoes	Salmonella spp.	9	9	1	3	3	9	9	430
Produce - RAC	Tomatoes	Shigella spp.	0	9	1	1	1	9	0	210
Produce - RAC	Tropical Tree Fruits	Listeria monocytogenes	0	9	1	9	3	3	0	250
Produce - RAC	Tropical Tree Fruits	Salmonella enterica - Serovar typhi	0	9	1	1	1	3	0	150
Produce - RAC	Tropical Tree Fruits	Salmonella spp.	9	9	3	9	1	3	3	370
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Aeromonas spp.	0	3	9	9	1	9	0	310

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C 5	C6	С7	Risk Score
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Anisakis simplex	0	1	9	0	3	9	1	230
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Bacillus cereus and toxin	0	1	1	9	1	9	0	210
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Campylobacter spp.	0	3	0	1	1	9	0	140
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Cestodes	0	9	3	0	3	9	0	240
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Listeria monocytogenes	0	9	9	9	1	9	0	370
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Norovirus	0	3	0	0	1	9	0	130
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Plesiomonas shigelloides	0	1	9	1	1	9	0	210
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Rhabdomyolysis	1	3	3	0	3	9	0	190
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Salmonella spp.	1	9	9	1	3	9	1	330
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Shigella spp.	0	9	1	1	1	9	0	210
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Staphylococcus aureus and toxin	0	3	9	1	1	9	0	230
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	STEC 0157	0	9	0	1	1	9	0	200
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Tetrodotoxin	1	9	1	0	3	9	0	230
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Trematodes	0	3	9	0	1	9	0	220
Seafood - Finfish	Finfish, species not associated with histamine or ciguatoxin	Vibrio parahaemolyticus	1	9	9	3	3	9	0	340

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C5	C6	С7	Risk Score
Seafood - Finfish	Finfish, histamine-producing species	Aeromonas spp.	0	3	9	9	1	9	0	310
Seafood - Finfish	Finfish, histamine-producing species	Amnesic shellfish poisoning (ASP)	1	3	3	0	3	9	0	190
Seafood - Finfish	Finfish, histamine-producing species	Escolar toxin	1	1	3	0	9	9	0	230
Seafood - Finfish	Finfish, histamine-producing species	Hepatitis A virus	0	9	1	0	3	9	0	220
Seafood - Finfish	Finfish, histamine-producing species	Listeria monocytogenes	0	9	9	9	1	9	0	370
Seafood - Finfish	Finfish, histamine-producing species	Salmonella spp.	3	9	9	1	3	9	3	370
Seafood - Finfish	Finfish, histamine-producing species	Saxitoxin (PSP)	0	9	3	0	3	9	0	240
Seafood - Finfish	Finfish, histamine-producing species	Scombroid toxin (Histamine)	9	1	9	3	3	9	9	430
Seafood - Finfish	Finfish, species potentially contaminated with ciguatoxin	Ciguatoxin	9	3	9	0	3	0	9	330
Seafood - Finfish	Finfish, species potentially contaminated with ciguatoxin	Listeria monocytogenes	0	9	9	9	1	0	0	280
Seafood - Finfish	Finfish, species potentially contaminated with ciguatoxin	Salmonella spp.	0	9	9	1	3	0	0	220
Seafood - Finfish	Smoked Finfish	Listeria monocytogenes	0	9	9	9	9	0	0	360
Seafood - Finfish	Smoked Finfish	Norovirus	0	3	0	0	1	0	0	40
Seafood - Finfish	Smoked Finfish	Parasites	0	1	3	0	3	0	0	70
Seafood - Finfish	Smoked Finfish	Salmonella spp.	0	9	1	3	1	0	0	140
Seafood - Finfish	Smoked Finfish	Scombroid toxin (Histamine)	1	1	3	3	3	0	0	110
Seafood - Invertebrates	Crustaceans	Aeromonas spp.	0	3	9	9	1	9	0	310

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C 5	C6	С7	Risk Score
Seafood - Invertebrates	Crustaceans	Bacillus cereus and toxin	0	1	1	1	1	9	0	130
Seafood - Invertebrates	Crustaceans	E. coli, other pathogenic (EA)	0	3	9	1	1	9	0	230
Seafood - Invertebrates	Crustaceans	Hepatitis A virus	3	9	1	0	3	9	3	280
Seafood - Invertebrates	Crustaceans	Listeria monocytogenes	0	9	9	9	3	9	0	390
Seafood - Invertebrates	Crustaceans	Norovirus	0	3	1	0	3	9	0	160
Seafood - Invertebrates	Crustaceans	Paragonimus spp.	1	3	1	0	1	9	0	150
Seafood - Invertebrates	Crustaceans	Salmonella spp.	1	9	9	3	1	9	3	350
Seafood - Invertebrates	Crustaceans	Staphylococcus aureus and toxin	0	3	3	1	1	9	0	170
Seafood - Invertebrates	Crustaceans	Vibrio cholerae	1	9	9	1	1	9	0	300
Seafood - Invertebrates	Crustaceans	Vibrio parahaemolyticus	9	9	9	3	1	9	3	430
Seafood - Invertebrates	Crustaceans	Vibrio vulnificus	0	9	9	1	1	9	0	290
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Amnesic shellfish poisoning (ASP)	1	3	3	0	3	0	0	100
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Azaspiracid shellfish poisoning (AZP)	1	3	9	0	3	0	1	170
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Brevitoxins (NSP)	1	3	3	0	3	0	0	100
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Campylobacter spp.	1	3	3	1	1	0	3	120

Commodity Category	Commodity	Hazard	C1	C2	С3	C4	C 5	C6	С7	Risk Score
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Clostridium perfringens and toxin	0	3	1	1	1	0	0	60
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Hepatitis A virus	3	9	3	0	3	0	3	210
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Listeria monocytogenes	0	9	1	3	3	0	0	160
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Norovirus	9	3	9	0	3	0	0	240
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Okadaic acid (DSP)	1	9	9	0	3	0	1	230
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Plesiomonas shigelloides	1	1	9	3	1	0	1	160
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Salmonella enterica - Serovar typhi	1	9	9	1	1	0	0	210
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Salmonella spp.	0	9	9	3	1	0	0	220
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Saxitoxin (PSP)	1	9	1	0	3	0	1	150
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Shigella spp.	0	9	1	1	1	0	0	120
Seafood - Invertebrates	Molluscan Shellfish, bivalves	Vibrio cholerae	1	9	1	1	1	0	0	130
Seafood - Invertebrates	Molluscan shellfish, bivalves	Vibrio parahaemolyticus	9	9	9	1	1	0	9	380
Seafood - Invertebrates	Molluscan shellfish, bivalves	Vibrio vulnificus	1	9	9	3	1	0	3	260