

Risk from *Listeria monocytogenes* in ready to eat smoked fish: Appendices

Appendix 1

Table A1.1 - Data used to provide the variables used for the ComBase modelling included in section 4.2.1.3

Product	Packaging	NaCl (%)	Shelf life (days)	aw	pH	Notes	Reference
Cold smoked salmon	Vacuum packed	>3.5*	16	-	-	UK major multiplier	Peck <i>et al</i> , 2006
Cold smoked salmon	Vacuum packed or modified atmospheric packed	3	7 - 42*	-	-	International (range)	Peck <i>et al</i> , 2006
Cold smoked salmon side	Vacuum packed	2.2	>14*	-	-	UK sold on eBay	Peck <i>et al</i> , 2006
Dry cured, cold smoked salmon	Vacuum packed	-	-	0.931	6.07	raw material sourced from Norway (frozen before manufacture)	Kang <i>et al</i> , 2012
Hand-salted smoked organic Atlantic salmon	-	-	15	0.97	6	Ireland sample collected immediately post manufacture	Eicher <i>et al</i> , 2020
Norwegian smoked salmon (high concentration of sodium lactate)	-	-	16	0.95	6	Norway: sample collected immediately post manufacture	Eicher <i>et al</i> , 2020
Norwegian smoked salmon (low concentration of sodium lactate)	-	-	16	0.96	6	Norway: sample collected immediately post manufacture	Eicher <i>et al</i> , 2020
Smoked salmon	-	2.16	-	0.883	5.91	Bulgaria: at retail	Zhelyazkov and Stratev, 2018
Smoked salmon (brand a)	-	3.37	-	0.95	6.3	Spain: at retail	Fuentes <i>et al</i> , 2010
Smoked salmon (brand b)	-	2.97	-	0.961	6.28	Spain: at retail	Fuentes <i>et al</i> , 2010
Wet cured, cold smoked salmon	Vacuum packed	-	-	0.962	6.14	Raw material sourced from Norway (frozen before manufacture)	Kang <i>et al</i> , 2012
Median	-	2.97	16 ^a	0.9555 ^a	6.04 ^a	-	-

Figure A1.1: The results of modelling all four conditions, C1/L1 final concentration of *L. monocytogenes* was 3.03 log CFU/g; C1/L10 final concentration of *L. monocytogenes* was 4.02 log CFU/g; C2/L1 final concentration of *L. monocytogenes* was 3.47 log CFU/g; and C2/L10 final concentration of *L. monocytogenes* was 4.46 log CFU/g.

Appendix 2

This risk characterisation section of this risk assessment followed guidelines produced by the Advisory Committee on the Microbiological Safety of Food (ACMSF, 2020), where the frequency of occurrence and the severity of detriment are considered separately. The tables demonstrating the different levels of risk and uncertainty considered when concluding the risk characterisation are included below.

Table A2.1- A qualitative scale for the frequency of occurrence of foodborne risks.

Frequency category	Interpretation
Negligible	So rare that it does not merit to be considered
Very Low	Very rare but cannot be excluded
Low	Rare but does occur
Medium	Occurs regularly
High	Occurs very often
Very High	Events occur almost certainly

Table A2.2 - A qualitative scale for the severity of detriment of foodborne risks.

Severity category	Interpretation
Negligible	No effects, or so mild they do not merit to be considered.
Low	Mild illness: not usually life-threatening, usually no sequelae, normally of short duration, symptoms are self-limiting (for example transient diarrhoea)

Severity category	Interpretation
Medium	Moderate illness: incapacitating but not usually life-threatening, sequelae rare, moderate duration (for example diarrhoea requiring hospitalisation)
High	Severe illness: causing life-threatening or substantial sequelae or illness of long duration (for example chronic hepatitis)

Table A2.3 - A qualitative scale for the level of uncertainty in food risk assessment.

Uncertainty category	Interpretation
Low	There are solid and complete data available; strong evidence is provided in multiple references; authors report similar conclusions
Medium	There are some but no complete data available; evidence is provided in small number of references; authors report conclusions that vary from one another
High	There are scarce or no data; evidence is not provided in references but rather in unpublished reports or based on observations, or personal communication; authors report conclusions that vary considerably between them.