ICMSF Cases concept

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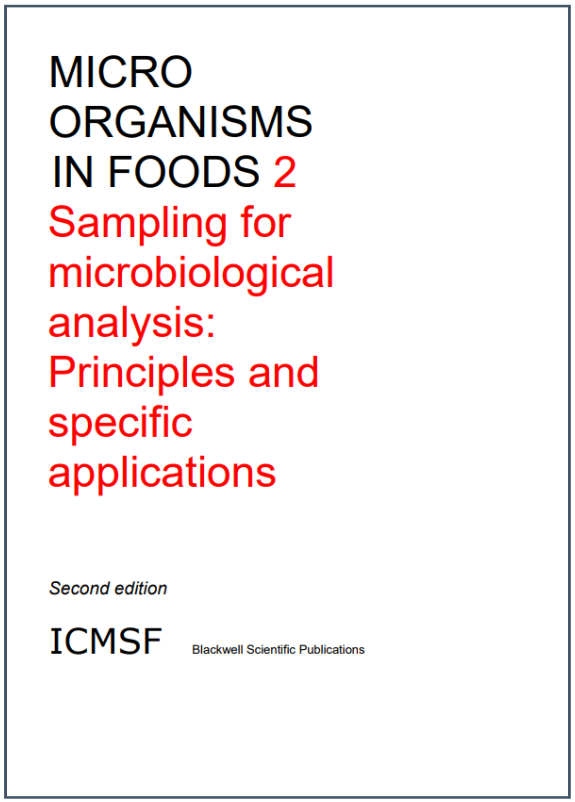
Introduction



1st Edition, 1974
2nd Edition, 1986

- Concept first published in ICMSF Book 2
- The concept recommends 15 Cases to manage safety and suitability of food in trade
- It follows a risk-based approach, using sampling plans for proportional stringency

ICMSF Cases

Rationale

The greater the risk, the more stringent the management of the hazard needs to be

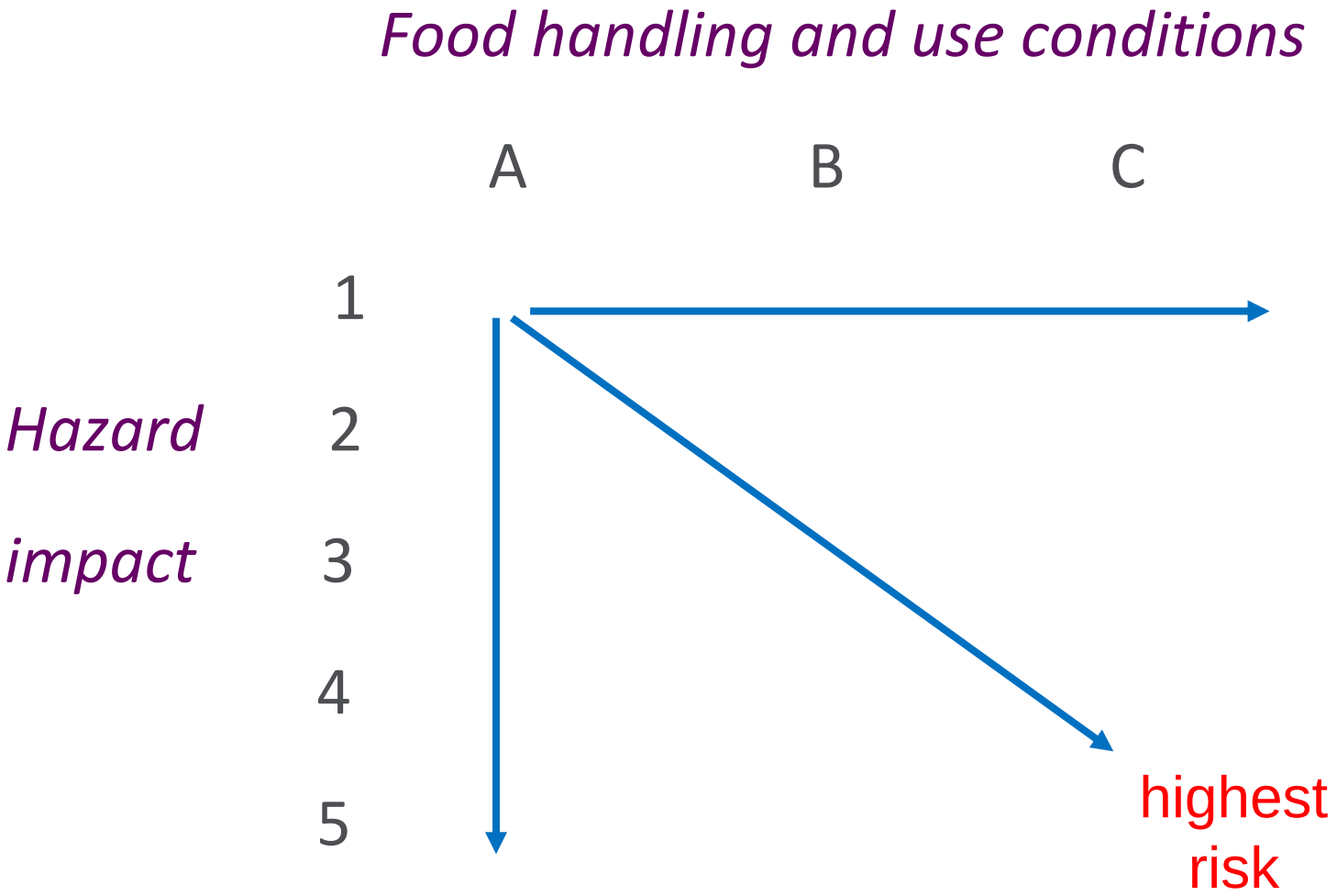
- A greater risk posed by a hazard is reflected by a higher Case number
- For increasingly higher Case numbers, sampling plans have been selected with proportionally higher performance

ICMSF Cases (cont.)

15 cases reflecting relative risk

- Considering:
  - Harmfulness and severity of the hazard
  - Intended consumer population
  - Conditions of food handling and use

Risk Categorization Matrix



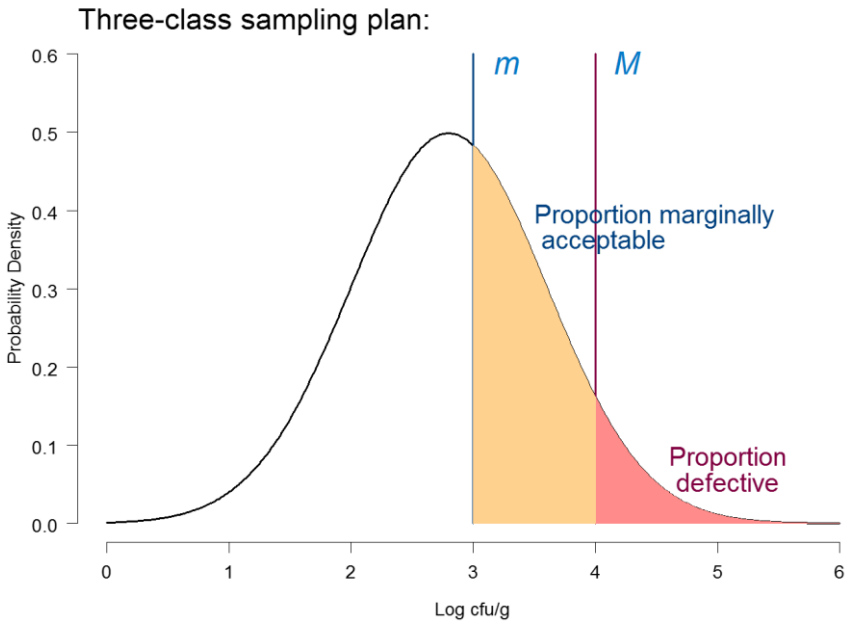
ICMSF Categories of Microorganisms

Utility	Spoilage, reduced shelf life, no health concern	*e.g.* total counts (TVC, etc.), yeast and mold
Indicator	Measure of GHP	*e.g.* Coliforms, Enterobacteriaceae.
Moderate hazard	Not life threatening, short duration, self limiting, no sequelae	*e.g. S. aureus, B. cereus, C. perfringens*, Norovirus.
Serious hazard	Incapacitating, usually not life threatening	*e.g.* Salmonellae, *Shigella flexneri*, *Yersinia enterocolitica*.
Severe hazard	Life threatening, chronic sequelae, *or* long duration *or* designed for sensitive sub-population	*e.g. E. coli* O157:H7, *C. botulinum* toxin or *Cronobacter* (infants).

Lot Acceptance

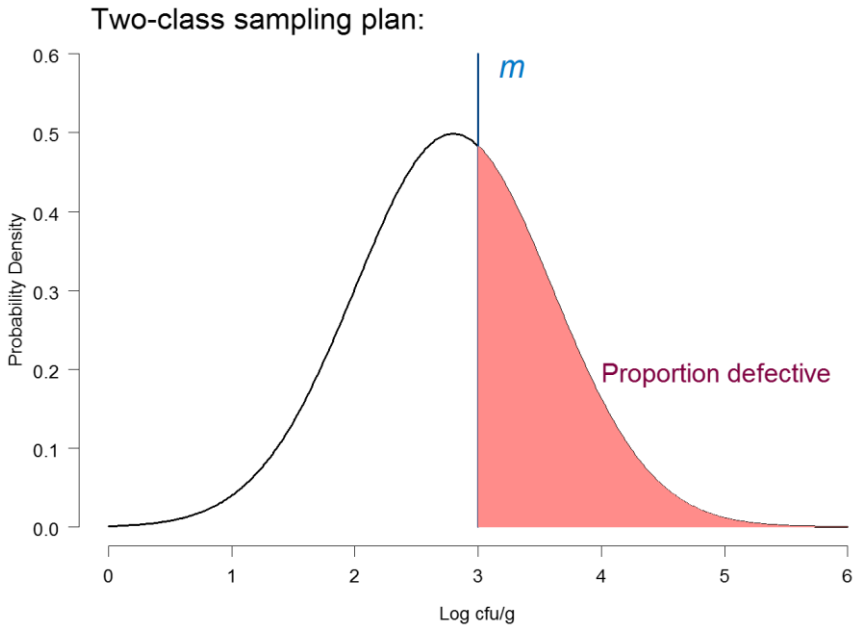
- Food lots represent units produced under uniform conditions
- Different microorganisms may be present in food lots at different levels
- Sampling plans with proportional performance are used to determine whether a lot of food is acceptable

Sampling plan types

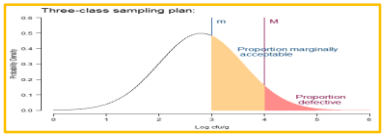
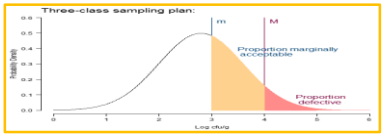
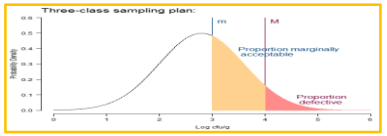
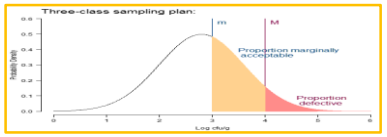
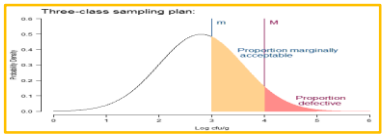
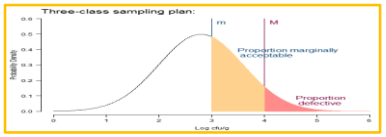
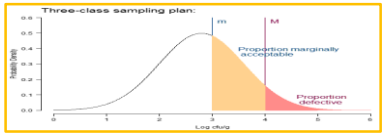
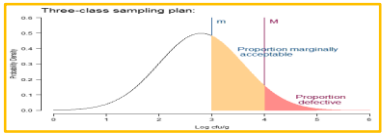
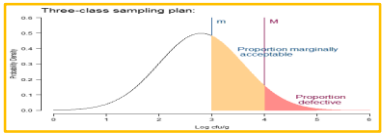
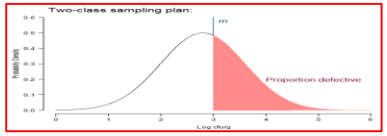
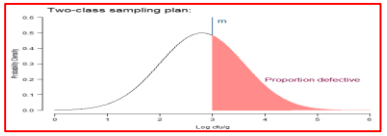
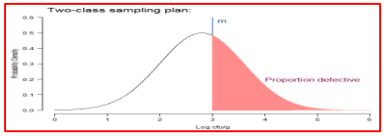
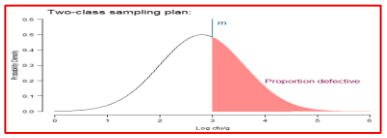
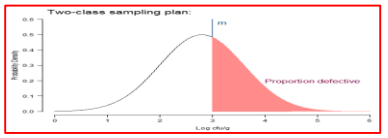
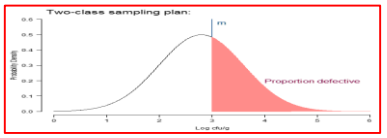


- *n* – number of sample units
- *m* – microbiological limit for good quality
- *M* – microbiological limit for unacceptable
- *c* – maximum number allowed between *m* and *M*

- *n* – number of sample units
- *m* – microbiological limit for unacceptable
- *c* – maximum number positive or over *m*



Sampling Plans for Lot Acceptance

	Category	Likely Change Before Consumption: Reduce	No Change	Increase
Enumeration (CFU/g)	Utility			
	Indicator			
	Moderate			
Analytical unit = 25g	Serious			
	Severe			

Sampling Plans for Lot Acceptance (cont.)

Category	Likely Change Before Consumption		
	Reduce	No Change	Increase
Utility	Case 1 n=5, c=3	Case 2 n=5, c=2	Case 3 n=5, c=1
Indicator	Case 4 n=5, c=3	Case 5 n=5, c=2	Case 6 n=5, c=1
Moderate	Case 7 n=5, c=2	Case 8 n=5, c=1	Case 9 n=10, c=1

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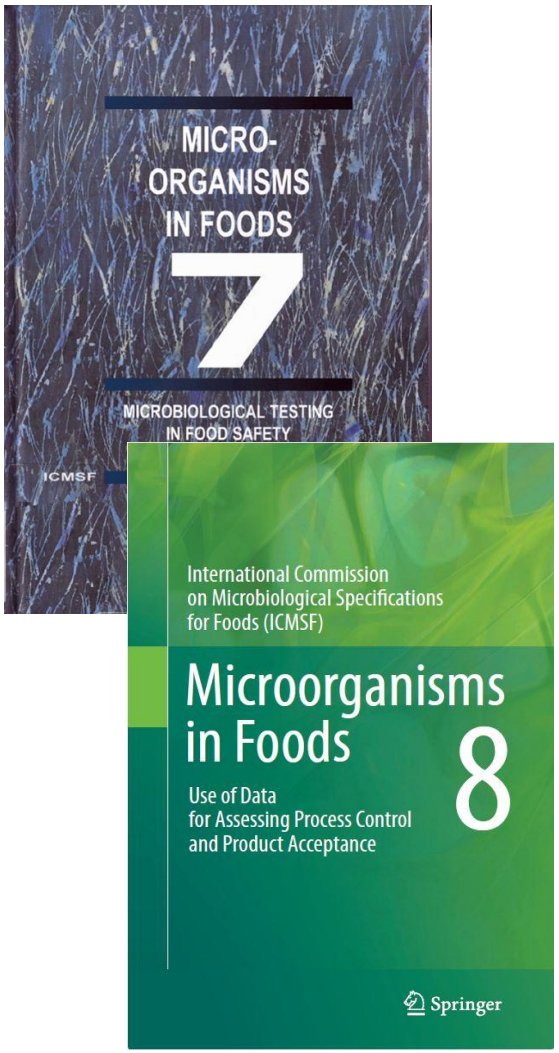
Moderate	Case 7 n=5, c=2	Case 8 n=5, c=1	Case 9 n=10, c=1
Serious	Case 10 n=5, c=0	Case 11 n=10, c=0	Case 12 n=20, c=0
Severe	Case 13 n=15, c=0	Case 14 n=30, c=0	Case 15 n=60, c=0

Analytical unit = 25g

Summary



- The ICMSF Cases concept provides a systematic and risk-based approach
- Greater consumer risk means more stringent sampling plan requirements
- Latest advice can be found in Books 7 and 8

For more information, see www.icmsf.org