

Roundtable Update on ICMSF

Leon G.M. Gorris

Unilever
United Kingdom



www.icmsf.org

Anaheim, CA, USA
Saturday
31 July 2010



Update Topics

- ▲ ICMSF background
- ▲ Book 8
- ▲ Sampling plan tools



International Commission on Microbiological Specifications for Foods



- ▲ Founded in 1962
- ▲ IUMS – scientific exchange to advance human health and welfare and the environment
- ▲ Main Commission and Sub-commissions in Latin-America, South-East Asia and China/North-East Asia
- ▲ ICMSF – advance scientific concepts for government and industry aiming to:
 - Reduce foodborne illness
 - Facilitate global food trade

International Union of Microbiological Societies

Division of Bacteriological & Applied Microbiology

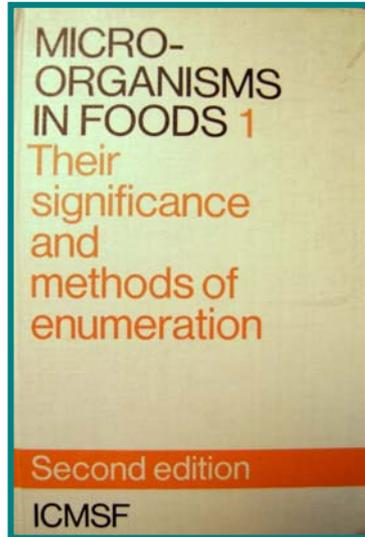
ICMSF

ICMSF Provides scientific and technical advice to food safety professionals

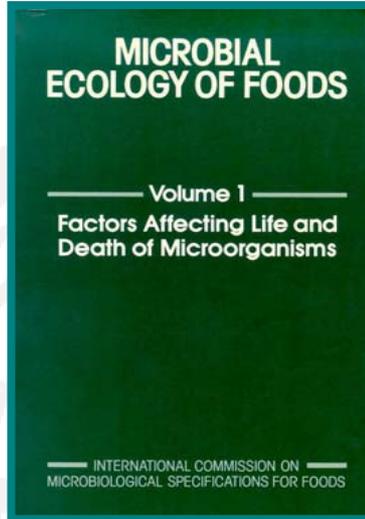
- ▲ ICMSF publishes (books, papers, opinions, lay-person guides) and presents (workshops, conferences) on food safety (management principles and practices)
- ▲ ICMSF advice has no formal status; official food safety recommendations and standards are the province of:
 - Governments for national standards and regulations
 - Intergovernmental agencies for international standards, e.g.
 - United Nations agencies WHO and FAO, through Codex Alimentarius

Past Projects

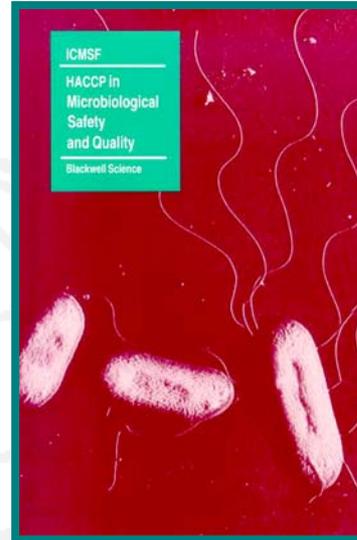
1978



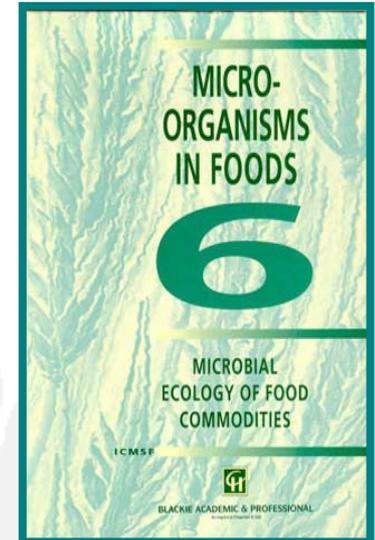
1980



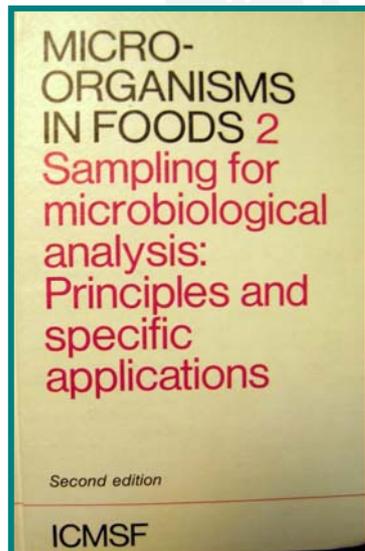
1988



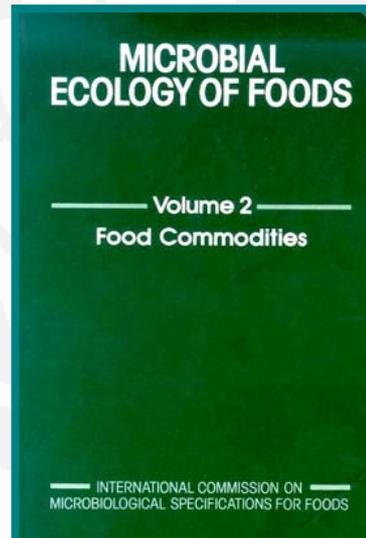
1998/2005



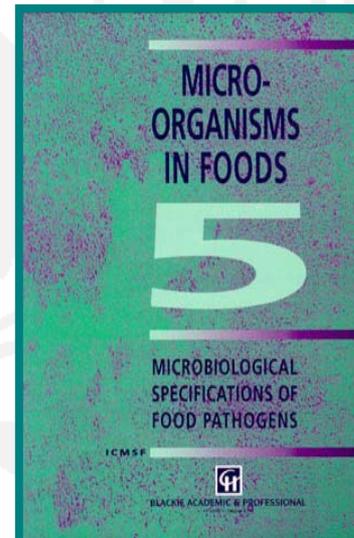
1974/'86



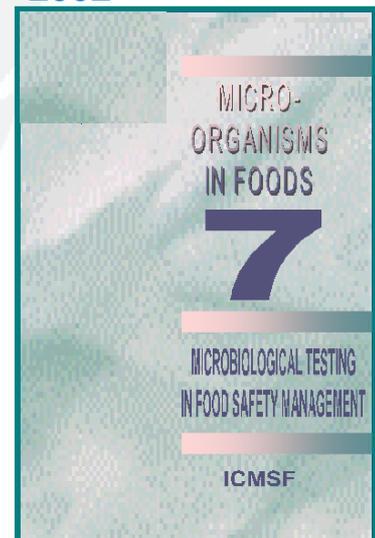
1980



1996



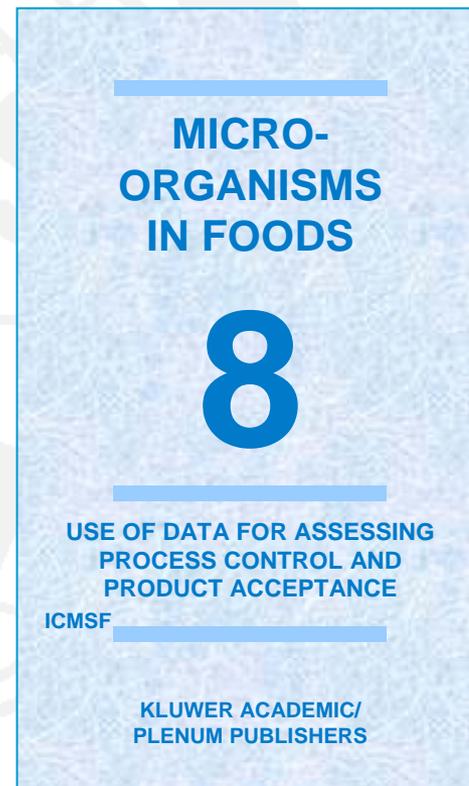
2002



Current Project – *Microorganisms in Foods 8: Use of Data for Assessing Process Control and Product Acceptance*

▲ Objectives

- Update previously recommended end-product testing criteria
- Recommend other useful tests and limits for specific commodities:
 - Primary production
 - Ingredients
 - In-process
 - Processing environment
 - Shelf life



Book 8 Contents

▲ Part 1-Principles

- Utility of microbial testing for safety & quality
- Validation of control measures
- Verification of process control
- Verification of environmental control
- Corrective action to re-establish control
- Microbial testing in customer-supplier relationships

▲ Part 2 – Commodities

- Meats
- Poultry
- Seafood
- Feed & pet food
- Vegetables
- Fruits
- Spices, dried soups, flavorings
- Cereals
- Nuts, oilseeds, dried legumes
- Cocoa and confectionery
- Oil based foods
- Sugar, syrups, honey
- Beverages
- Water
- Dairy products
- Eggs
- Shelf stable, heat treated foods
- Infants and young children
- Formulated foods

- Under external review

- Anticipated finalization: 2010



ELSEVIER

Contents lists available at ScienceDirect

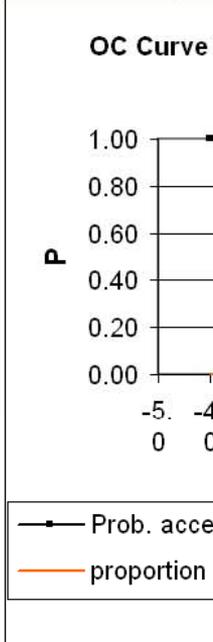
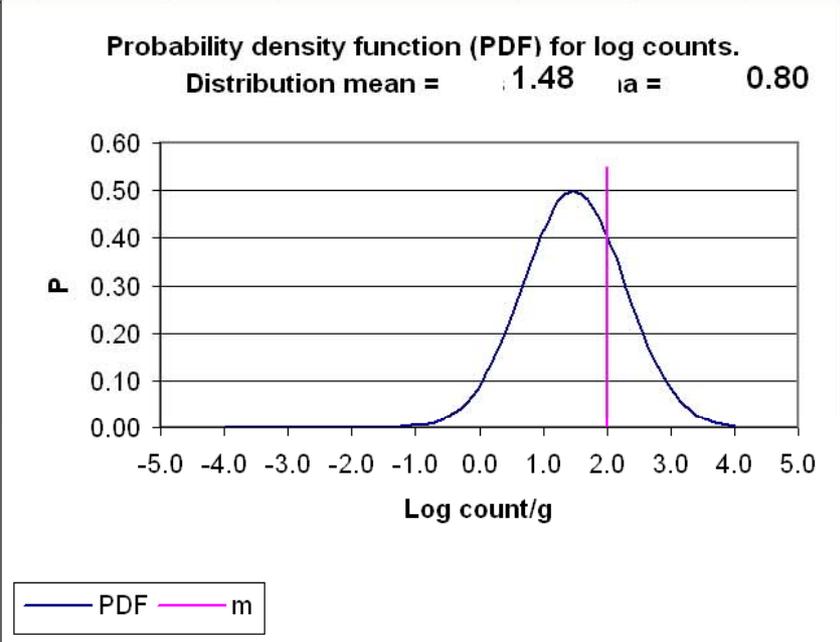
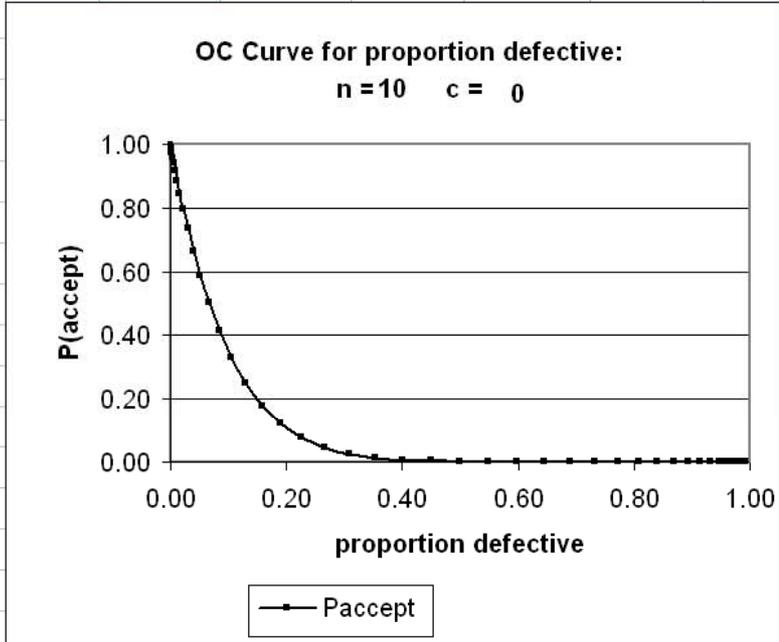
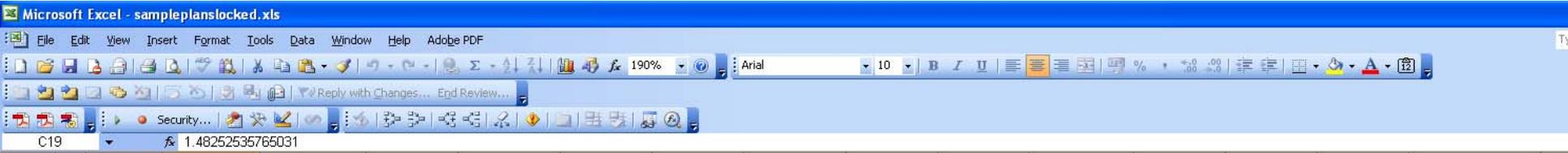
Food Control

journal homepage: www.elsevier.com/locate/foodcontrol

Relating microbiological criteria to food safety objectives and performance objectives

M. van Schothorst^a, M.H. Zwietering^{b,*}, T. Ross^c, R.L. Buchanan^d, M.B. Cole^e,
International Commission on Microbiological Specifications for Foods (ICMSF)

$$p(+) = \int_{-\infty}^{\infty} P_{\text{normal}}(\log C, \mu, \sigma) \cdot (1 - \exp(-C \cdot \text{sample size})) d \log C$$



Input data		P(accept)	Calculate performance criterion (mean count giving P(accept) = 0.05)	Test against ICMSF tables		Equivalent performance		
				Pd	P(accept)			
Mean	1.48	0.05				Mean	1.48	
sigma	0.80				0.1	0.35	sigma	0.80
m	2.00						m	-1.16
M	n/a						M	n/a
n	10						n	3
c	0		Alternate P(accept) for performance criterion			c	0	

Calculate n for Pa=0.05

Stochastic FSO/PO/PC tool of ICMSF

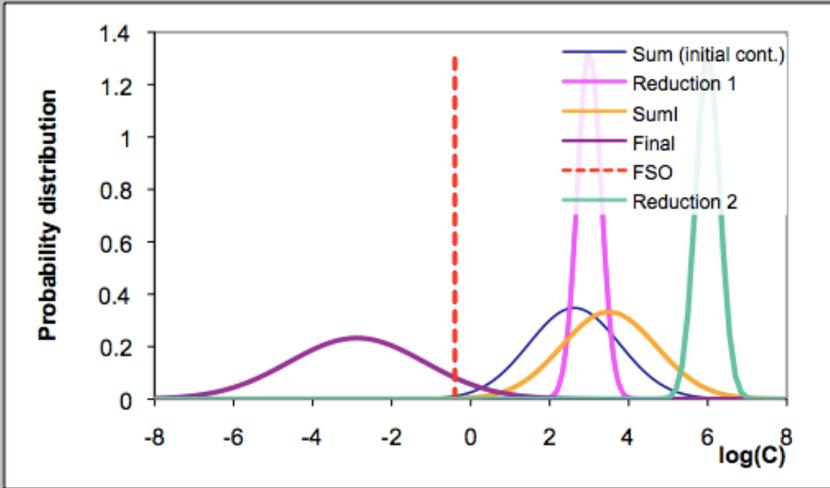
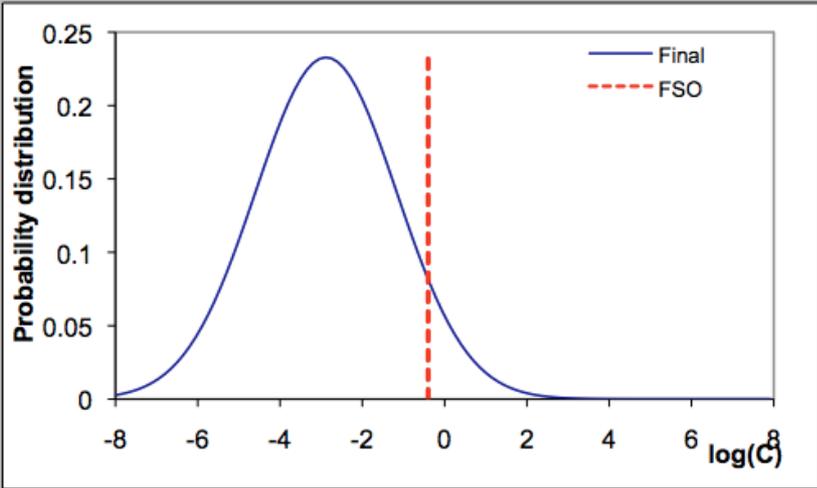
The overall parameters (mean and s.d.) of the lognormal distribution are determined based on the lognormal parameters (mean and s.d.) of the subsequent basic phenomena, H_0 (the initial contamination), ΣR (the sum of the reduction phenomena), and ΣI (the sum of all increases due to growth and recontamination)

	mean (\log_{10})	Standard Deviation
Ho (Ingredient 1)	2.5	1
Ho (Ingredient 2)	2	1
Reduction (Step 1)	3	0.3
Reduction (Step 2)	6	0.3
Sum Increases	3.5	1.2
Enter required FSO	-0.4	1.15
Prevalence (%)	20	

$$FSO = \Sigma H_0 + \Sigma R + \Sigma I$$

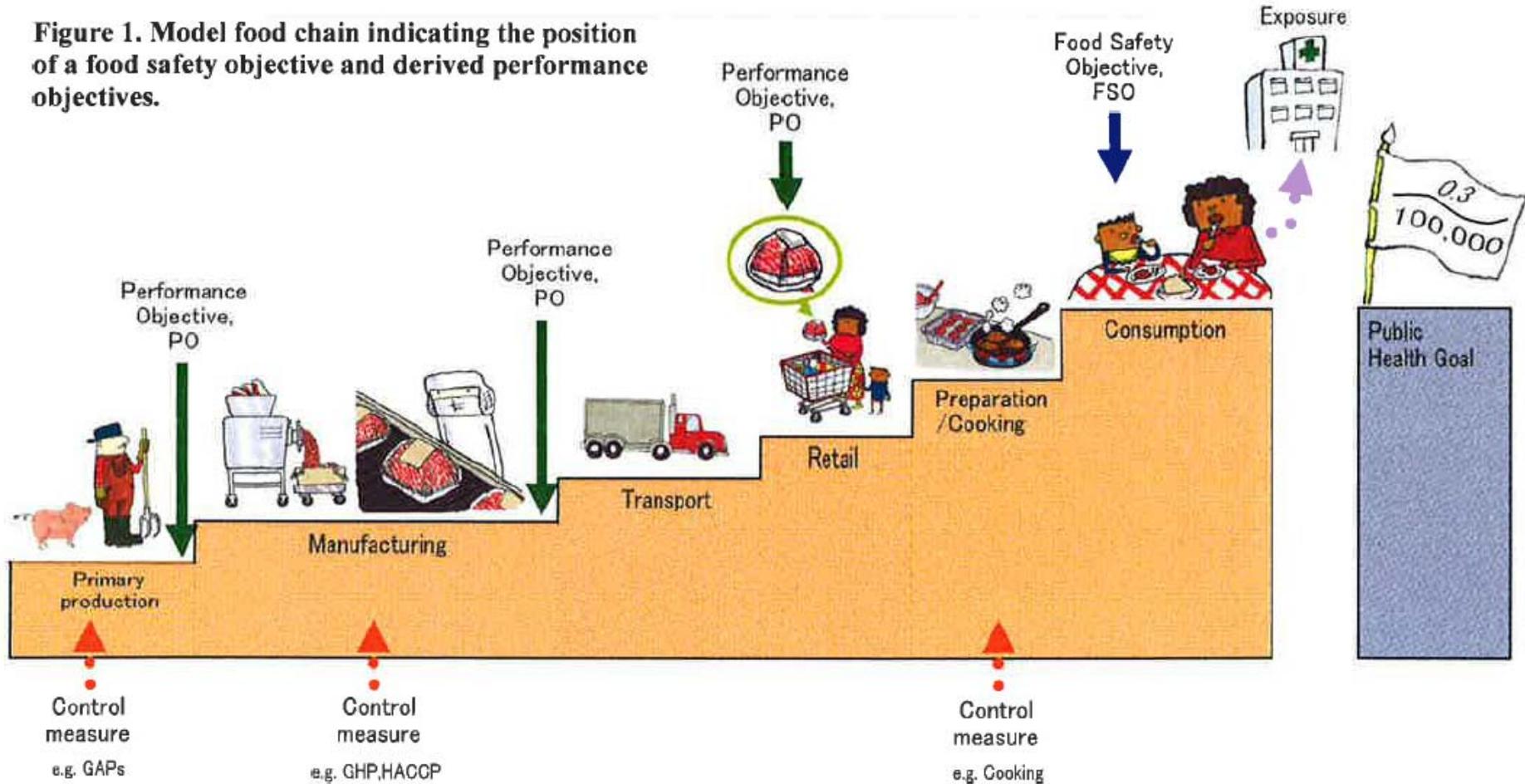
	mean(\log_{10})	Standard Deviation
Overall	-2.880668952	1.713542461

$P(x > FSO)$	%	$P(x < FSO)$	%
0.07	7.39	0.93	92.61
Allowing for prevalence		0.015	98.52



Illustrated lay-person's guide to FSO/PO/PC

Figure 1. Model food chain indicating the position of a food safety objective and derived performance objectives.





www.icmsf.org

International Commission on Microbiological Specifications for Foods (ICMSF)

MEMBER LOGIN

HOME ABOUT US



CALENDAR OF EVENTS THE NEWS MEMBERS PUBLICATIONS CONTACTS

PURPOSE

Our primary goal is to provide timely, science-based guidance to government and industry on appraising and controlling the microbiological safety of foods. The primary objectives of ICMSF include:

1. Provide the scientific basis for microbiological criteria and to promote principles for their establishment and application.

> NEWS AND EVENTS

["Relating Microbiological Criteria to Food Safety Objectives and Performance Objectives"](#) Published in Food Control.

ICMSF featured in September 2008 edition of [Food Science and Technology Ireland](#).

ICMSF Receives Prestigious [GMA Food Safety Award](#) at IAFP Annual Meeting

Need to [contact ICMSF](#)? Click here for updated information.

> DOWNLOADS

[Microbiological sampling plans](#) (link to file sampling plan): a tool to explore ICMSF recommendations [Download Standard Program](#) (English link to sampleplans1_02.xls, 1.28M) [Download German Program](#) (German link to sampleplansGerman1_02.xls, 666K)