Risk assessment of Vibrio vulnificus in raw oysters

INTERPRETATIVE SUMMARY
AND TECHNICAL REPORT







8

Risk assessment of Vibrio vulnificus in raw oysters

INTERPRETATIVE SUMMARY
AND TECHNICAL REPORT

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization nor of the Food and Agriculture Organization of the United Nations concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views expressed herein are those of the authors and do not necessarily represent those of the World Health Organization nor of the Food and Agriculture Organization of the United Nations nor of their affiliated organization(s).

The World Health Organization and the Food and Agriculture Organization of the United Nations do not warrant that the information contained in this publication is complete and shall not be liable for any damage incurred as a result of its use.

WHO Library Cataloguing-in-Publication Data

Risk assessment of Vibrio vulnificus in raw oysters: interpretative summary and technical report.

Published jointly with the Food and Agriculture Organization of the United Nations (FAO).

(Microbiological risk assessment series No. 8)

1. Vibrio vulnificus – growth & development 2. Vibrio vulnificus – pathogenicity 3. Oysters – microbiology 4. Oysters – pathogenicity. 5. Risk assessment 6. Food contamination I. Food and Agriculture Organization of the United Nations II. World Health Organization III. Title IV. Series.

ISBN 92 4 156310 9 (WHO) (NLM classification: QW 141) ISBN 92 5 105423 1 (FAO) ISSN 1726-5274

All rights reserved. Requests for permission to reproduce or translate the material contained in this publication – whether for sale or for non-commercial distribution – should be addressed to the Chief, Publishing Management Service, Information Division, Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, 00100 Rome, Italy (fax: +39 06 57052256; e-mail: copyright@fao.org) or to WHO Press, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (fax: +41 22 7914806; e-mail: permissions@who.int).

CONTENTS

Acknowledgements	VII	
Risk Assessment Drafting Group		
Reviewers	xi	
Foreword	xiii	
Background	XV	
Abbreviations	xvii	
INTERPRETATIVE SUMMARY		
Introduction	3	
Hazard Identification	3	
Exposure assessment	4	
Hazard characterization	6	
Risk characterization	8	
Conclusions	9	
References	10	
TECHNICAL REPORT		
1. Introduction	15	
1.1. Scope	15	
2. HAZARD IDENTIFICATION	17	
3. Exposure assessment	19	
3.1. Microbial ecology	19	
3.2. Growth and survival characteristics	20	
3.3. Consumption of oysters	20	
3.4. Modelling exposure to <i>V. vulnificus</i>	21	
3.4.1. Harvest	21	
3.4.2. Post-harvest	31	
3.5. Simulation results	37	

3.6. Model validation	40
4. HAZARD CHARACTERIZATION	43
4.1. Description of the factors that influence the disease outcome	43
4.1.1. Characteristics of the pathogen	43
4.1.2. Characteristics of the host	43
4.1.3. Characteristics of the food matrix	45
4.2. Public health outcomes	46
4.2.1. Manifestations of disease	46
4.2.2. Rational for the biological end points modelled	46
4.3. Dose-response relationship	47
4.3.1. Summary of available data	47
4.3.2. Sources of data used	47
4.3.3. Assumptions	50
4.3.4. Goodness of fit	50
4.3.5. Uncertainty and variability	51
5. RISK CHARACTERIZATION	53
5.1. Moderate salinity	53
5.2. Effects of interventions	56
5.3. High salinity	58
6. Data gaps	61
7. Conclusions	65
7.1. Key findings	65
7.2. Limitations and caveats	65
7.3. Conclusion	66
8. References	69
APPENDIX A. MODEL IMPLEMENTATION	77
APPENDIX B. ESTIMATED MODEL PARAMETERS IN THE EXPOSURE ASSESSMENT	85

APPENDIX C. I	OOSE-RESPONSE ASSESSMENT	91
	Comparative results of assessment based on alternative date the setween V . $VULNIFICUS/G$ and water temperature at	CA 101

APPENDIX E. FACSIMILE OF FDA MEMORANDUM.

109

ACKNOWLEDGEMENTS

The Food and Agriculture Organization of the United Nations and the World Health Organization would like to express their appreciation to all those who contributed to the preparation of this report. Special appreciation is extended to the risk assessment drafting group on *Vibrio* spp. in seafood, and in particular the core group on risk assessment of *Vibrio vulnificus* in raw oysters, for the time and effort that they freely dedicated to the elaboration of this assessment. Many people provided their time and expertise by reviewing the report and providing their comments, additional data and other relevant information. Both the risk assessment drafting group and the reviewers are listed in the following pages.

Appreciation is also extended to all those who responded to the calls for data that were issued by FAO and WHO and brought to our attention data not readily available in the mainstream literature and official documentation.

The risk assessment work was coordinated by the Secretariat of the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA). This included Sarah Cahill, Maria de Lourdes Costarrica and Jean-Louis Jouve (2001-2004) in FAO, and Peter Karim Ben Embarek, Jocelyne Rocourt (2001- 2004), Hajime Toyofuku (1999-2004) and Jørgen Schlundt in WHO. During the development of the risk assessment, additional support and feedback were provided by Lahsen Ababouch, Henri Loreal and Hector Lupin, Fishery Industries Division in FAO, and Jeronimas Maskeliunas, Codex Secretariat. Sarah Cahill coordinated the finalisation and publication of the report. Thorgeir Lawrence was responsible for editing the report for language and preparation for printing.

The preparatory work and the publication of this report was supported and funded by the FAO Food Quality and Standards Service, the FAO Fishery Industries Division and the WHO Department of Food Safety, Zoonoses and Foodborne Disease.

预览已结束,完整报告链接和二维码如下:

