Food and Agriculture Organization of the United Nations

World Health Organization

JOINT FAO/WHO ACTIVITIES ON RISK ASSESSMENT OF MICROBIOLOGICAL HAZARDS IN FOODS

JOINT FAO/WHO EXPERT MEETING ON RISK ASSESSMENT TOOLS FOR *VIBRIO PARAHAEMOLYTICUS* AND *VIBRIO VULNIFICUS* ASSOCIATED WITH SEAFOODS

CALL FOR DATA AND EXPERTS

Deadline: 30th April 2010

Introduction

Based on the FAO/WHO risk assessment on *Vibrio vulnificus* in oysters and *Vibrio parahaemolyticus* in seafoods, the Codex Committee for Food Hygiene (CCFH) has developed Guidelines on the Application of General Principles on Food Hygiene for the Control of Pathogenic *Vibrio* Species in Seafood, which have been forwarded for adoption by the 33rd session of the Codex Alimentarius Commission in July 2010. However, in doing so the 41st session of the CCFH recognised the need to provide countries with tools to assist them in the implementation of the guidelines under the various conditions that exist in different regions and countries. Such tools are envisioned to support countries in their efforts to use risk based approaches in the selection of control measures appropriate for their seafood species, primary production and post-harvest practices. Such a tool has already been developed for application in the United States of America. However, as it is based on the conditions and data of the USA, its broader application could not be recommended without a review of its validity when applied to non-USA scenarios. In light of this the CCFH requested FAO/WHO to convene an Expert Meeting with the following terms of reference:

- Conduct validation of the predictive risk models developed by the United States of America based on FAO/WHO risk assessments, with a view to constructing more applicable models for wide use among member countries, including adjustments for strain virulence variations and ecological factors;
- Review the available information on testing methodology and recommend microbiological methods for *Vibrio* spp. in order to monitor the levels of pathogenic *Vibrio* spp. in seafood and/or water; and
- Conduct validation of growth rates and doubling times for *V. parahaemolyticus* and *V. vulnificus* in *Crassostrea virginica* (eastern or American oyster) using strains isolated from different parts of the world and different bivalve molluscan species.

Scope of the Meeting:

The existing model developed by the USA for *V. parahaemolyticus* and *V. vulnificus* in the oyster species *Crassostrea virginica.* includes the following parameters (a) *V. parahaemolyticus* and *V. vulnificus* abundance during different months of the year, (b) proportion of the *V. parahaemolyticus* population that is pathogenic, (c) relationship between water temperature and abundance of these pathogens, (d) post-harvest handling practices of the USA oyster industry, (e) the relationship between air temperature and the growth of these pathogens, (f) oyster consumption habits in the USA, and (g) dose response relationship for *V. vulnificus* and for tdh^+ and/or trh^+

V. parahaemolyticus. In order to validate this model in terms of its application to other regions of the world and other bivalve mollusc species, data on all of these aspects are needed.

When the FAO/WHO risk assessment was under development, data on the attack rates of pandemic strains of *V. parahaemolyticus* were not available, but epidemiological studies in some regions suggest that virulence among *tdh*$^+$ and/or *trh*$^+$ strains vary and public health outcomes will depend on strain virulence and the ability of different strains to grow in various bivalve mollusc species. Therefore, validation of the model for global application needs to consider on data from different regions/countries and under various post-harvest and consumption practices. Apart from published studies, valuable data could be obtained from national agencies monitoring shellfish harvest and consumption, industry monitoring data, epidemiological studies, and other unpublished sources in countries/regions.

The proposed expert meeting (tentatively scheduled for 13-17 September, 2010) will consider data on these aspects from all available sources and try to develop models that are widely applicable in different regions/countries of the world. It will also consider methods used for estimating numbers of total and pathogenic *V. parahaemolyticus* and *V. vulnificus* in various studies, any national/regional attempts to validate the methods by inter-laboratory calibration or ring test and make an assessment of the methods used by various agencies in order to recommend widely applicable methods that accurately measure the hazard of concern.

CALL FOR DATA

Information on the following aspects is requested:

Data and information required to validate existing tools and/or develop additional tools to support the selection of risk based control measures for the control of V. parahaemolyticus and V. vulnificus in seafoods

(a) Prevalence and levels of total and pathogenic (*tdh*$^+$ and *trh*$^+$) *V. parahaemolyticus* and total viable cells of *V. vulnificus* in water and bivalve molluscan species harvested from different parts of the world;
(b) Presence and levels of pandemic strains of *V. parahaemolyticus* in water/bivalve molluscs;
(c) Temperature, salinity and other ecological factors (e.g. turbidity, ballast water discharge, climate anomalies, pH, nutrient content, copepods etc) in harvesting areas and correlation if any between these factors and levels of total and pathogenic (tdh$^+$ and trh$^+$) *V. parahaemolyticus* and *V. vulnificus*;
(d) Growth of different strains of pathogenic *Vibrio* spp. in various bivalve molluscs;
(e) Harvest, post-harvest and consumption practices (meal size, frequency, raw/cooked etc) for various bivalve molluscan species;
(f) Epidemiological data (illnesses associated with pathogenic *Vibrio* spp, number of cases, age, health status and any other related information about affected individuals, incriminated foods and other related information), levels of pathogenic *Vibrio* spp, strain virulence in incriminated bivalve molluscan species and any data to indicate attack rates;
(g) Risk profiles or risk assessment performed at national or regional level;
(h) Any other related information that may be helpful to this work

Data required to review the methodology for V. parahaemolyticus and V. vulnificus

(i) Sampling plans and methodology (both culture based and molecular) used for detection and enumeration of total and pathogenic *Vibrio* spp;
(j) Studies related to validation of methodology: inter-laboratory calibration, ring test etc;

Confidential and/or unpublished data:

FAO and WHO recognize that some of the information and relevant data which is now required may be unpublished or of a confidential nature. With regard to unpublished information and data, this remains the property of the author for subsequent publication by the owner as original material.

Unpublished confidential studies that are submitted will be safeguarded in so far as it is possible to do so without compromising the work of FAO and WHO. Specific issues relating to confidentiality should be discussed directly between the information and data owners and FAO/WHO. For these and other issues please contact FAO and WHO at the contacts provided below.

Deadline:
Please submit any relevant information (electronic and/or hard copies - electronic submissions are preferred, either via e-mail (if not too large) or on CD ROM.), in any official United Nations language (English, French, Spanish, Arabic, Chinese, Russian), and with title and short description of the content in English if possible, to either of the addresses below, by **30th April 2010**

CALL FOR EXPERTS

In addition FAO and WHO are currently in the process of identifying experts to participate in an expert meeting on detection methods and risk assessment tools for V*ibrio parahaemolyticus* and V*ibrio vulnificus* associated with seafoods (tentatively scheduled for 13 – 17 September 2010) and in future work in this area. In particular expertise is being sought in the following areas:

- Development or validation/inter-laboratory calibration of microbiological and molecular methods for detection and enumeration of pathogens in foods
- Quantitative risk assessment for microbial pathogens
- Microbial growth and inactivation in foods
- Post-harvest practices for bivalves in different regions
- Dose response estimation for microbial pathogens
- Predictive microbiology

In addition all applicants should meet the following general criteria

- Advanced University/College degree in microbiology, food technology, food science, fisheries, epidemiology, public health, statistical/mathematical sciences or related fields
- Experience in microbiological evaluation of food safety/risk analysis
- At least five years experience in relevant fields
- Scientific publications in peer-reviewed journals, in particular, relevant publications within the most recent ten years
- Good knowledge of the English language, both written and oral
- Leadership or invited participation in national or international scientific bodies, committees, and other expert advisory bodies pertinent to the scope of this work

Selection of experts:
FAO and WHO place great value on the technical quality and independence of the participating experts as well as on the transparency of its selection process. Both organizations have developed well-defined procedures for selecting experts that promote the excellence and independence of opinions provided.

Applicants' curriculum vitae will be reviewed on the basis of the criteria listed above by a selection panel consisting of three or more individuals including at least two independent, internationally recognized external experts appointed by FAO or WHO. The highly qualified individuals selected from the applicants will be listed in an expert roster that will be used by FAO and WHO to invite experts to the meeting.

In selecting experts FAO and WHO will consider, in addition to scientific and technical excellence, diversity and complementarities of scientific backgrounds, and balanced representation from

geographic regions, including developing and developed countries, as well as gender. Selected experts may be required to assist in the preparation of background papers.

Appointment of experts:
The experts will be invited to participate only in their individual scientific capacity. An expert will not represent the government of country of which he or she is a citizen, or the institution with which he or she is associated. The experts designated to participate in such meetings will not receive any remuneration, however, travel costs, subsistence allowance and other related expenses will be the exclusive responsibility of FAO and WHO.

Applications:
Interested applicants should submit their curriculum vitae including a description of their education, work experience and a list of peer reviewed publications relevant to the factors indicated above (please do not include reprints in your submission unless specifically requested at a later date). Applicants must have a good working knowledge of English as the Expert Meeting and correspondence will be in English only.

Before participating in the Expert Meeting, the selected experts will be required to declare any potential interests associated with the subjects and substances that will be evaluated through completion of a standard form developed by FAO or WHO. They will be asked to indicate in writing any interest (financial and intellectual) on their part or that of their spouse that may affect their scientific independence as experts including one or more of the following conditions: employment (past or present) by any commercial enterprise or private or civil sector association; a recipient of research or other study grants from such enterprises or associations; or shareholdings in commercial enterprises active in fields related to food safety. These declarations will be evaluated and retained by the Joint Secretariat. In addition, a confidentiality undertaking is also to be signed to ensure proper handling of dossiers and proprietary information.

Deadline:
Applications should be sent to FAO or WHO by **30th April 2010** to the addresses below, electronic applications are preferred. Applications received after that date will be evaluated only if additional expertise is required and the evaluation and selection will follow the same procedure as described.

Data submissions and applications in response to the calls for data and experts should be sent to:

Nutrition and Consumer Protection Division
Attention: **Dr. Sarah Cahill**
Food and Agriculture Organization of the United Nations
Viale delle Terme di Caracalla
00100 Rome, Italy
Telephone: + 39 06 5705 3614
Facsimile: + 39 06 5705 4593
Email: jemra@fao.org

and

Department of Food Safety and Zoonoses
Attention: **Dr. Kazuko Fukushima,**
World Health Organization
Avenue Appia 1211
Geneva 27
Switzerland
Telephone: +41 22 791 2920
Facsimile : +41 22 791 4807
Email: foodsafety@who.int