The Spanish Food Safety and Nutrition Agency (AESAN)

10 Diciembre 2018, Rome

Risk assessment & scientific cooperation with EFSA:

EuroCigua: Risk Characterization of Ciguatera Food Poisoning
Mission

Promotion of food safety

Information for consumers & stakeholders

Develop strategies and actions for health promotion in the field of nutrition
POLITICAL ORGANIZATION OF SPAIN: THE STATE OF AUTONOMIES

State
- General State Administration

Regional

Autonomous Communities

Local
- Local Authorities
COMPETENT AUTHORITIES DISTRIBUTION ON FOOD SAFETY

FOOD SAFETY SECTORIAL ORGANIZATION

- General State Administration
- Ministry of Agriculture, Fisheries and Food
- AESAN
- Ministry of Health, consumer affairs and social welfare

FOOD SAFETY TERRITORIAL ORGANIZATION

- Autonomous Communities
- Regional Ministry of Agriculture
- Regional Ministry of Health
Risk Assessment

Risk Management

Risk Communication

Risk Assessment

Risk Analysis
The Spanish Food Safety and Nutrition Agency (AESAN)

Risk Assessment
- Scientific committee
- Expert groups
- Data bases
- Food consumption
- Food composition

Risk Management
- Legislation
- Food register
- Codex secretariat
- RASFF/SCIRI
- Official control & coordination

Risk Communication
- Webpage
- Press office
- Publications
- Communication strategies

EFSA FOCAL POINT
RASFF FOCAL POINT
INFOSAN
Risk Assessment

**Scientific Committee (SC)**

**Experts & areas**

1. Food Toxicology
2. Microbiology, Virology, Parasitology or Food Zoonoses
3. Human and Animal Epidemiology
4. Biotechnology and Genetic Modification
5. Immunology and allergology
6. Human Nutrition
7. Pharmacology
8. Food Technology Processes
9. Analysis and Instrumentation
10. Epidemiology and Public Health from the point of view of Nutrition
11. Animal feeding

- **No funding**

There is no financial compensation. Reimbursement of travel expenses

- Meetings by electronic media

**4 plenary sessions/year**

- February
- May
- September
- November

**Hello**

I am... an expert
Risk Assessment

Scientific Committee (SC)

External experts

25% of the reports

• 77 Universities
  ✓ 56 publics
  ✓ 21 privates

• Research institutions

Databases of experts
In food safety and nutrition
Risk Assessment

Scientific Committee (SC)

Reports

- Dossiers: 17%
- Lines: 7%
- Evaluation: 76%

Chemical: 33%
Biological: 21%
Nutritional: 20%
Tech: 24%
Others: 2%

Dossiers
Lines
Evaluation
Chemical
Biological
Nutritional
Tech
Others
Risk Assessment

Scientific Committee (SC)

Reports

No. Reports approved/Year 96

- Novel foods
- Technological adjuvants

Requests to the Scientific Committee

Organizations

- Professional sectors
- Public administrations
- AESAN
### Reports used for risk Management

<table>
<thead>
<tr>
<th>Informe</th>
<th>Acción</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evisceration of lagomorphs</strong></td>
<td>Royal Decree Evisceration</td>
</tr>
<tr>
<td><strong>Anisakis</strong></td>
<td>Royal Decree fish treatment</td>
</tr>
<tr>
<td><strong>Nitrates</strong></td>
<td>Chard consumption recommendation for children</td>
</tr>
<tr>
<td><strong>Aflatoxins</strong></td>
<td>Maintained at the national regulation</td>
</tr>
<tr>
<td><strong>Trichinella</strong></td>
<td>Changes in EU control regulations are proposed</td>
</tr>
<tr>
<td><strong>Food Complements</strong></td>
<td>Royal Decree authorization</td>
</tr>
<tr>
<td><strong>Pregnant microbiological risks</strong></td>
<td>Consumption recommendations (brochure ...)</td>
</tr>
</tbody>
</table>

**Trichinella**

Artículo 3 Derogaciones

1. By way of derogation from Article 2(1), meat of domestic swine that has undergone a freezing treatment in accordance with Annex II under the supervision of the competent authority shall be exempt from Trichinella examination.

2. By way of derogation from Article 2(1), carcasses and meat of not weaned domestic swine less than five weeks of age shall be exempt from Trichinella examination.

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7.2 Disponibilidad de las medidas de control

17. Las medidas de control posterior al sacrificio y las acciones de seguimiento de la carne de cerdo también son una consumición. Las medidas de control deben ser implementadas, según corresponda, los cerdos no cesáreos y sacrificados a una edad inferior a las 8 semanas pueden quedar exentos de las medidas de control posteriores al sacrificio. Cuando exista información relevante que pueda ser verificada por la autoridad competente.

18. La inactivación de Trichinella spp., a través del proceso de curado debe seguir las recomendaciones de la ICT."

7.2.1 Análisis de laboratorio y acciones de seguimiento:

19. Cuando se realizan pruebas de laboratorio en canales individuales, los métodos analíticos seleccionados deberán estar de acuerdo con las técnicas de diagnóstico recomendadas en el capítulo 2.1.16. Trichinosis, del Manual de pruebas de diagnóstico y vacunas para los animales terrestres ("Método de digestión") de la OIE, así como las recomendaciones para el aseguramiento de la calidad en los programas de análisis de digestión para Trichinella de la ICT y las normas ISO/CEN.

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Spain: Scientific Cooperation with EFSA

- University of Cordoba
- University of Santiago de Compostela
- National Institute for the Agricultural and Food Research and Technology (INIA)
- Ministry of Agriculture, Food and Environment (MAGRAMA)
- Polytechnic University of Valencia

Organisations with representatives in Scientific Networks but not being an Article 36 list organisation:

AF: Advisory Forum member
FP: Focal Point member
AFWG: Focal Point member

Number of Scientific Networks representatives from a certain organisation:

- 1

Organisations on Article 36 list:

org
AECOSAN: Focal Point of EFSA

- Advisory Forum representative
- Focal Point representative

SCIENTIFIC NETWORKS

- 5 Spanish Agency for Consumer Affairs, Food Safety and Nutrition (AECOSAN)
- 3 Ministry of Agriculture, Fisheries and Food (MAPA).
- 2 AECOSAN + MAPA
- 1 Superior Council for Scientific Research (CSIC)
- 1 Technical University of Valencia
- 1 University of Zaragoza
- 1 University of Santiago de Compostela
- 1 University of Córdoba
- 2 National Institute for Agrifood Research and Technology (INIA)

LIST OF COLLABORATING ORGANIZATIONS (ARTICLE 36 REG. 178/2002)

- 36 Spanish organizations

EXPERT PANNELS

- 20 experts
- 7 Panels with Spanish representation
COLLABORATING ORGANIZATIONS

- Networks organisations (only)
- Art.36 AND Networks organisations (both)
- Art.36 organisations (only)

Total number of organisations
Spanish participation

- 109 applicants
- 53 Shortlisted (11% of total shortlisted).
- 20 Designed: Spain is the second country in number of experts in EFSA panels
RISK CHARACTERIZATION OF CIGUATERA FOOD POISONING IN EUROPE
GP/EFSA/AFESCO/2015/03

- EuroCigua co-funded by the European Food Safety Authority (EFSA)
- **Framework Partnership Agreement** (FPA).
- EuroCigua started on June 1\(^{st}\) 2016 and has a foreseen length of four years.
- Long-term cooperation between EFSA and 14 partners from six Member States with the **common general objective** of characterizing the risk of ciguatera food poisoning in Europe.
What is the Ciguatera?

- Ciguatoxins are produced by microalgae, or dinoflagellates, called *Gambierdiscus spp*. The toxins climb up the food chain until the contaminated fish are caught and served to people.

- These toxins cause Ciguatera Fish Poisoning (CFP). It is a complex syndrome: gastrointestinal, neurological and cardiovascular effects.

- CFP is primarily associated with the consumption of large predator fish that have accumulated the toxins by feeding on smaller contaminated coral reef fish.

- At present, CFP is the most common type of marine biotoxins food poisoning worldwide with an estimated number of 10,000 to 50,000 people suffering from the disease annually.
Worldwide distribution of ciguatera

2004 → *Gambierdiscus* spp., responsible for ciguatera in the waters of the Canary Islands and Madeira microalgae, was detected.

2008 → autochthonous ciguatera outbreaks in Spain (Canary Islands) and in Portugal (Madeira).

Between 2008 and 2018 → 17 outbreaks recorded in Canary Islands → 111 cases.

Fish genus *Seriola* was involved in many of the outbreaks.

These new findings suggest the microorganism is becoming an increasing risk for European countries.
# Alerts and information about the ciguatera in Europe

<table>
<thead>
<tr>
<th>Classification</th>
<th>Date of case</th>
<th>Reference</th>
<th>Notifying country</th>
<th>Subject</th>
<th>Product Category</th>
<th>Type</th>
<th>Risk decision</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. information for attention</td>
<td>27/07/2017</td>
<td>2017.1112</td>
<td>France</td>
<td>ciguatoxins in frozen red snapper fillets (Lutjanus spp) from India</td>
<td>fish and fish products</td>
<td>food</td>
<td>serious</td>
<td>Details</td>
</tr>
<tr>
<td>2. alert</td>
<td>17/03/2017</td>
<td>2017.0345</td>
<td>Germany</td>
<td>ciguatera poisoning suspected to be caused by frozen red snapper fillets (Lutjanus bohar) from Vietnam, via Denmark</td>
<td>fish and food products</td>
<td>food</td>
<td>serious</td>
<td>Details</td>
</tr>
<tr>
<td>3. information for</td>
<td>22/08/2016</td>
<td>2016.1155</td>
<td>France</td>
<td>ciguatoxins in chilled kingfish (Caranx spp) from India</td>
<td>fish and food products</td>
<td>food</td>
<td>serious</td>
<td>Details</td>
</tr>
<tr>
<td>attention</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7. information for</td>
<td>27/01/2015</td>
<td>2015.0088</td>
<td>France</td>
<td>ciguatoxins in wild-caught fish (Caranx spp and others) from Sri Lanka</td>
<td>fish and food products</td>
<td>food</td>
<td>serious</td>
<td>Details</td>
</tr>
<tr>
<td>attention</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>8. alert</td>
<td>16/11/2012</td>
<td>2012.1602</td>
<td>Germany</td>
<td>ciguatera poisoning suspected to be caused by fresh red snapper fillets (Lutjanus spp) from India</td>
<td>fish and food products</td>
<td>food</td>
<td>serious</td>
<td>Details</td>
</tr>
</tbody>
</table>

**Lutjanus spp**
The project

Coordinator and Partners

<table>
<thead>
<tr>
<th>Coordinator</th>
<th>OrganisationnewlineAgencia Española de Consumo, Seguridad Alimentaria y Nutrición</th>
<th>Acronym</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner 1</td>
<td>Instituto de Salud Carlos III</td>
<td>ISGIII</td>
</tr>
<tr>
<td>Partner 2</td>
<td>Institut de Recerca i Tecnologia Agroalimentaries</td>
<td>IRTA</td>
</tr>
<tr>
<td>Partner 3</td>
<td>Universidad de Vigo</td>
<td>UVigo</td>
</tr>
<tr>
<td>Partner 4</td>
<td>Portuguese Authority for Food and Economic Safety</td>
<td>ASAE</td>
</tr>
<tr>
<td>Partner 5</td>
<td>Instituto Nacional de Saúde Doutor Ricardo Jorge, I.P.</td>
<td></td>
</tr>
<tr>
<td>Partner 6</td>
<td>University of Thessaly</td>
<td></td>
</tr>
<tr>
<td>Partner 7</td>
<td>Federal Institute for Risk Assessment</td>
<td>BfR</td>
</tr>
<tr>
<td>Partner 8</td>
<td>Canary Health Service (Servicio Canario de la Salud)</td>
<td>SCS</td>
</tr>
<tr>
<td>Partner 9</td>
<td>Universidad de Las Palmas de Gran Canaria</td>
<td>ULPGC</td>
</tr>
<tr>
<td>Partner 10</td>
<td>Instituto Português do Mar e da Atmosfera</td>
<td>IPMA</td>
</tr>
<tr>
<td>Partner 11</td>
<td>State General Laboratory (SGL) / Ministry of Health</td>
<td>SGL</td>
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<tr>
<td>Partner 12</td>
<td>French Research Institute for Exploitation of the Sea</td>
<td>IFREMER</td>
</tr>
<tr>
<td>Partner 13</td>
<td>Aristotle University of Thessaloniki</td>
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</tr>
<tr>
<td>Collaborators</td>
<td>Ministry of health, Cyprus</td>
<td></td>
</tr>
<tr>
<td>---------------</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Regional Ministry of Agriculture, Livestock, Fisheries and Water the Canary Islands Government</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Instituto das Florestas e Conservação da Natureza, IP-RAM/ Governo Regional da Madeira, Secretaria Regional do Ambiente e Recursos Naturais</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direção de Serviços de Investigação e Desenvolvimento da Pesca, Direção Regional de Pescas, Secretaria Regional de Agricultura e Pesca</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agence nationale de sécurité sanitaire de l’alimentation, de l’environnement et du travail (ANSES)</td>
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</tr>
<tr>
<td>Advisory Board</td>
<td>Dr. Robert Dickey - University of Texas Marine Science Institute</td>
<td></td>
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<tr>
<td></td>
<td>Dr. Ronald Manger - Fred Hutchinson Cancer Research Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dr. Takeshi Yasumoto - Japan Food Research Laboratories (JFRL)</td>
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<td></td>
<td>European Food Safety Authority - EFSA</td>
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<td></td>
<td>European Centre for Disease Prevention and Control - ECDC</td>
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<td></td>
<td>European Commission (EC)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Joint Research Center (JRC)</td>
<td></td>
</tr>
</tbody>
</table>
• It is composed of four independently managed subprojects named Specific Agreements (SA no. 1 - SA no. 4).

• Main task of **AECOSAN (SA1)** → Scientific cooperation and coordination of data integration

**AECOSAN** facilitate the cooperation and Scientific advancement of the Project. The team of this SA integrate the different results of each part of the project, in order to ensure the Scientific coherence and data integration among the different SAs.

**The University of Vigo** is responsible for the characterization of the risk associated of the Ciguatera poisoning, by developing an efficient analytical methodology to identify the toxins, as well as developing standards and reference material to be used for this evaluation and characterization.

Due to the ciguatera cases and outbreaks have been reported in Europe since 2008, to determine the incidence and epidemiological characteristic of ciguatera cases and outbreaks in Europe is the main objective of **ISC III.**

The main objectives of **IRTA** are to evaluate the presence of these toxins in fish and the presence of the potential toxin-producing microalgae *Gambierdiscus* in the environment. This team must to identify fish species which represent a risk for human consumption as well as obtaining primary reference materials containing CTXs.
**MANAGEMENT AND SCIENTIFIC COORDINATION**

**Main Goal:** To provide the mechanisms in order to assure that the objectives of the FPA are accomplished in a global manner according to the main tasks reflected in Annex 1 of the FPA.

**Main tasks of the SA1**
- Scientific cooperation and scientific advancement
- Interchange of information among members of EuroCigua (partners, GB & AB)
- Data integration
- Integrate the results
Meetings

- Coordination meetings & audioconferences: 8
- Meetings with EFSA: 5
- Meetings among SAs: 3
- Annual Plenary Meetings: 2
- Other meetings

Foreign Health: JECFA, RASFF
Case definition

List of possible data sources for ciguatera cases and outbreaks from each EU MS

Surveillance protocol for ciguatera cases and outbreaks

Database for collecting cases and outbreaks

Standarization of the cell-based assay (CBA)

Extraction procedures for CTX

Description of the protocol literature search and data collection model

Sampling strategy Gambierdiscus spp. and fish

Development, optimization and validation of LC-MS/MS and HRMS for identification and confirmation of CTX

Development and optimization of LC-MS/MS and LC-HRMS

Validation of LC-MS/MS
Progress of EuroCigua

**Jun 2016**
- Kick off

**Aug – Dec 2016**
- Deliverables SA2

**Jul 2016**
- Deliverables SA3

**May-Jun 2017**
- Annual Scientific Reports

**Aug 2017**
- Annual Scientific Reports

**Sept 2017**
- 2nd Meeting

**May 2018**
- 3rd Meeting

**March 2019**
- 4th Meeting

**May 2018**
- Submission of the remaining Deliverables

**Sept 2020**
- End of the Project

**2 years remaining**
- Submission of annual scientific reports

**Apr 2020**
- Workshop
Main Results from Epidemiological area

Epidemiological data of ciguatera outbreaks reported in Europe since 2012 until 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Reporting country</th>
<th>No. of Cases</th>
<th>No. Hospitalized</th>
<th>Type of fish</th>
<th>Origin of fish</th>
<th>CTX detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Germany</td>
<td>23</td>
<td>4</td>
<td><em>Lutjanus bohar</em> L. argentimaculatus</td>
<td>India</td>
<td>Yes</td>
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<tr>
<td>2012</td>
<td>Portugal</td>
<td>12</td>
<td>12</td>
<td><em>Seriola sp. Lachnolaimus maximus</em></td>
<td>Selvagem Island</td>
<td>Unknown</td>
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<tr>
<td>2012</td>
<td>Spain</td>
<td>10</td>
<td>0</td>
<td><em>Seriola sp.</em></td>
<td>Canary Islands</td>
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<td>Spain</td>
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<td>Spain</td>
<td>4</td>
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<td>No</td>
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<tr>
<td>2012</td>
<td>Spain</td>
<td>12</td>
<td>0</td>
<td><em>Epinephelus sp.</em></td>
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<td>2013</td>
<td>Spain</td>
<td>16</td>
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<td><em>Epinephelus sp.</em></td>
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<tr>
<td>2014</td>
<td>Germany</td>
<td>6</td>
<td>1</td>
<td><em>Lutjanus bohar L. argentimaculatus</em> L. erythrophus <em>Pinjalo pinjalo</em></td>
<td>Indonesia</td>
<td>Yes</td>
</tr>
<tr>
<td>2015</td>
<td>Portugal</td>
<td>7</td>
<td>4</td>
<td><em>Epinephelus marginatus</em></td>
<td>Selvagens Island</td>
<td>Unknown</td>
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<tr>
<td>2015</td>
<td>Spain</td>
<td>3</td>
<td>0</td>
<td><em>Myctoperca fusca</em></td>
<td>Canary Islands</td>
<td>No</td>
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<tr>
<td>2015</td>
<td>Spain</td>
<td>2</td>
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<td><em>Pomatomus saltatrix</em></td>
<td>Canary Islands</td>
<td>Yes</td>
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<td>Spain</td>
<td>3</td>
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<td><em>Myctoperca fusca</em></td>
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<tr>
<td>2015</td>
<td>Germany</td>
<td>16</td>
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<tr>
<td>2016</td>
<td>Spain</td>
<td>2</td>
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<td><em>Epinephelus sp.</em></td>
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<tr>
<td>2016</td>
<td>Spain</td>
<td>3</td>
<td>0</td>
<td><em>Seriola sp.</em></td>
<td>Canary Islands</td>
<td>Yes</td>
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<tr>
<td>2016</td>
<td>Spain</td>
<td>2</td>
<td>0</td>
<td><em>Pagrus pagrus</em></td>
<td>Selvagens Island</td>
<td>Yes</td>
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<tr>
<td>2016</td>
<td>Germany</td>
<td>4</td>
<td>2</td>
<td><em>Lutjanus sp</em></td>
<td>India</td>
<td>Yes</td>
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<tr>
<td>2017</td>
<td>Spain</td>
<td>2</td>
<td>0</td>
<td><em>Epinephelus sp.</em></td>
<td>Canary Islands</td>
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<td>2017</td>
<td>Germany</td>
<td>15</td>
<td>2</td>
<td><em>Lutjanus bohar</em></td>
<td>Vietnam</td>
<td>Yes</td>
</tr>
</tbody>
</table>

From 2012 to 2017, a total of **151 cases** from **19 ciguatera outbreaks** have been notified in Spain, Portugal and Germany. The collection of epidemiological data from other European countries is still ongoing.
Gambierdiscus and/or Fukuyoa species have been identified in Macaronesian Islands. Also in Greece and Cyprus.

**Gambierdiscus** was also identified in Balearic Island for the first time.

**Figure 2.** Gambierdiscus australis from Menorca, Balearic Island
The **N2a Assay** was standardized and implemented on fish samples. Among 349 fish samples from the Canary Islands, **9.7% were CTX-like positive**.

<table>
<thead>
<tr>
<th>Species</th>
<th>Latin name</th>
<th>No. Samples</th>
<th>Weight (Kg)</th>
<th>CTX-like toxicity (level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amberjack</td>
<td><em>Seriola</em> spp.</td>
<td>10</td>
<td>21.00 - 70.00</td>
<td>Low / Medium-Low / Medium / High</td>
</tr>
<tr>
<td>Black moray</td>
<td><em>Muraena augusti</em></td>
<td>4</td>
<td>0.40 - 1.03</td>
<td>Medium-Low / Low</td>
</tr>
<tr>
<td>Brown moray</td>
<td><em>Gymnothorax unicolor</em></td>
<td>1</td>
<td>2.72</td>
<td>High</td>
</tr>
<tr>
<td>Common two-banded seabream</td>
<td><em>Diplodus vulgaris</em></td>
<td>1</td>
<td>0.32</td>
<td>Medium</td>
</tr>
<tr>
<td>Dusky grouper</td>
<td><em>Epinephelus marginatus</em> spp.</td>
<td>3</td>
<td>6.00 - 29.00</td>
<td>Medium-low / High</td>
</tr>
<tr>
<td>Fangtooth moray</td>
<td><em>Enchelycore anatina</em></td>
<td>1</td>
<td>1.44</td>
<td>Medium</td>
</tr>
<tr>
<td>Island-grouper</td>
<td><em>Mycteroperca fusca</em></td>
<td>4</td>
<td>2.50 - 8.00</td>
<td>Low / High</td>
</tr>
<tr>
<td>Macaronesian sharpnose-puffers</td>
<td><em>Canthigaster capistratas</em></td>
<td>1</td>
<td>0.02 - 0.03</td>
<td>High</td>
</tr>
<tr>
<td>Mediterranean moray</td>
<td><em>Muraena helena</em></td>
<td>1</td>
<td>0.82</td>
<td>Medium-low</td>
</tr>
<tr>
<td>Parrotfish</td>
<td><em>Sparisoma cretense</em></td>
<td>4</td>
<td>0.37 - 0.48</td>
<td>Low / Medium / High</td>
</tr>
<tr>
<td>Redporgy</td>
<td><em>Pagrus pagrus</em></td>
<td>1</td>
<td>4.00</td>
<td>High</td>
</tr>
<tr>
<td>Wahoo</td>
<td><em>Acanthocybium solandri</em></td>
<td>1</td>
<td>14.00</td>
<td>Low</td>
</tr>
<tr>
<td>White trevally</td>
<td><em>Pseudocaranx dentex</em></td>
<td>1</td>
<td>0.23</td>
<td>Low</td>
</tr>
<tr>
<td>Zebra seabream</td>
<td><em>Diplodus cervinus cervinus</em></td>
<td>1</td>
<td>0.68</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Positive CTX samples from the Canary Islands (May, 2016 - July, 2018).
Optimization of LC-MS/MS method for the confirmation of the CTX toxicity was performed.

C-CTX1 is the main responsible for the CTX contamination of fish from Canary Islands and Madeira.
Main Results

- European case definition, comparison with FDA pervious one.
- An epidemiological surveillance protocol for ciguatera in the EU. Included two questionnaires.
- From 2012 to 2017, 151 cases from 19 ciguatera outbreaks have been notified in Spain, Portugal and Germany.
- *Gambierdiscus* and/or *Fukuyoa* species have been identified in Macaronesian Islands. *Gambierdiscus* was also identified in Balearic Island for the first time.
- The N2a Assay was standardized and implemented on fish samples. Among 349 fish samples from the Canary Islands, 9.7% were CTX-like positive.
- Optimization of LC-MS/MS method for the confirmation of the CTX toxicity was performed.
- C-CTX1 is the main responsible for the CTX contamination of fish from Canary Islands and Madeira.
**External Communication Plan**

**Leaflet**

EuroCigua is a project co-funded by the European Food Safety Authority (EFSA) and 14 European organizations. The project focuses on the characterization of the risk of ciguatera food poisoning (CFP) in Europe and aims to:

- Respond to the scarcity of standards and reference materials;
- Establish reliable methods to identify and quantify ciguatoxins in fish and microalgae;
- Understand the temporal and spatial distribution of Gambierdiscus spp. in EU waters;
- Evaluate the toxicity of CFP-type populations of Gambierdiscus spp.;
- To assess the possible presence of CFP in fish, in EU waters;
- Determine the incidence and epidemiological characteristics of ciguatera cases in Europe.

**Build Up Awareness**

- **English**
- **Portuguese**
- **Spanish**
- **German**
- **French**
- **Italian**

**EuroCigua website**

**Factsheet**

Ciguatera food poisoning (CFP) is a type of food poisoning associated with the consumption of seafood with an estimated number of 29,000–50,000 poisonings per year worldwide. Ciguatera is endemic in tropical and subtropical regions of the world. Isolated outbreaks have occurred sporadically but with an increasing frequency in temperate areas such as Europe.

This seafood-borne illness is typically caused by the consumption of fish that have accumulated ciguatoxins in their flesh. Ciguatoxins are produced by benthic dinoflagellates from the genus Gambierdiscus spp that represents a key aspect in studies of harmful algae in recent years due to its danger to human health.
Ciguatoxins and CODEX

Río de Janeiro, Brazil – 3-7 April 2017

CCCF: Ciguatera is a natural occurring toxin in fish and CCCF will be the relevant subsidiary body of CAC to recommend measures to reduce contamination to safe levels to ensure public health and facilitate trade.

37. The EU informed the Committee of a four-year project co-funded by EFSA and coordinated by Spanish food safety agency (AECOSAN) to determine incidence in Europe of ciguatera fish poisoning and epidemiological incidence cases, assess presence of ciguatoxins in food and environment in Europe, and validate the methods for detection, quantification and confirmation that could contribute to future work on ciguatoxins.

Conclusion

38. The Committee:

- agreed to request scientific advice from FAO/WHO to allow the Committee to develop appropriate risk management options;
- noted that the in-session working group on the priority list of contaminants and naturally occurring toxicants for evaluation by JECFA would consider this matter further (see Agenda Item 14).

Ciguatera Working Group - FAO
Characterization of the risk of ciguatera worldwide

Experts from EUROCIGUA together with other experts including the CODEX experts responsible for the request of risk assessment.

Developing a document that it will include epidemiological and toxicological information, analytical methods, ecology and phytoplankton. EuroCigua project is mentioned as a reference project for the characterization of ciguatera risk in Europe.

Completed Document ➔ Spring of 2019
PRELIMINARY RESULTS OF RISK CHARACTERIZATION OF CIGUATERA FOOD POISONING IN EPOXIC <br> GP/EFSA/AFSCO/2015/03

RISK CHARACTERIZATION OF CIGUATERA FOOD POISONING IN EPOXIC <br> GP/EFSA/AFSCO/2015/03

Ciguatera food poisoning is one of the most common food-borne illnesses related to seafood consumption worldwide, mainly in tropical and subtropical areas. However, its distribution is not well known. Therefore, this project was undertaken to evaluate the risk associated with ciguatera food poisoning in Europe.

WHAT IS EUROCIQUA?

EuroCigu is a project funded by the European Food Safety Authority (EFSA) and implemented through a Framework Partnership Agreement (FPAA). It is a joint project of the Food Safety Authority, National Authorities, and relevant stakeholders. The main objective of the project is to provide a harmonized risk characterization of ciguatera food poisoning in Europe. It is a network of four independently managed subprojects. Each subproject has a specific focus on a particular aspect of ciguatera food poisoning in Europe.

Specific Agreement no. 1: "Management and Scientific Coordination," within the scope of the project, is to provide a harmonized risk characterization of ciguatera food poisoning in Europe. This includes the establishment of a ciguatera case definition, the identification of data sources for aquatic and terrestrial food, and the development of a risk-assessment model. The project was initiated on June 1st, 2015, and is expected to last for two years.

Specific Agreement no. 2: "Epidemiology," within the scope of the project, is to provide a harmonized risk characterization of ciguatera food poisoning in Europe. This includes the establishment of a ciguatera case definition, the identification of data sources for aquatic and terrestrial food, and the development of a risk-assessment model. The project was initiated on June 1st, 2015, and is expected to last for two years.

Specific Agreement no. 3: "Preparation of ciguatera in fish and environment," within the scope of the project, is to provide a harmonized risk characterization of ciguatera food poisoning in Europe. This includes the establishment of a ciguatera case definition, the identification of data sources for aquatic and terrestrial food, and the development of a risk-assessment model. The project was initiated on June 1st, 2015, and is expected to last for two years.

Specific Agreement no. 4: "Characterization of ciguatera," within the scope of the project, is to provide a harmonized risk characterization of ciguatera food poisoning in Europe. This includes the establishment of a ciguatera case definition, the identification of data sources for aquatic and terrestrial food, and the development of a risk-assessment model. The project was initiated on June 1st, 2015, and is expected to last for two years.

THE TEAM

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Publications
“Canary Islands (NE Atlantic) as a biodiversity ‘hotspot’ of Gambierdiscus: Implications for future trends of ciguatera in the area”

Francisco Rodríguez, Santiago Fraga, Isabel Ramilo, Pilar Rial, Rosa Isabel Figueiroa, Pilar Ribó, Isabel Bravo

“Ciguatera fish poisoning outbreaks from 2012 to 2017 in Germany caused by snappers from India, Indonesia, and Vietnam”

Miloc Friedemann

Human neuronal cell based assay: A new in vitro model for toxicity evaluation of ciguatoxin

Teresa Coccini, Francesca Caloni, Uliana De Simone

Identification of ciguatoxins in a shark involved in a fatal food poisoning in the Indian Ocean

Jorge Drogo, Lata Revati, Maria Teresa Alegría, Vanessa del Rio, Patricio de la Iglesia, Mónica Cano, Oscar Palacios, Cristina Sáez, José Cordero, Christian Balaguer, Iony Rasappan, Nieves Pérez, Paloma Martínez, Natalia Arnedo, Juan Trujillo
Risk characterization of ciguatera food poisoning in Europe

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Spanish Agency for Consumer Affairs, Food Safety and Nutrition

We promote your rights, protect your health and we ensure your safety as a consumer and user.

Presentation of the Agency
Duration 6 minutes