

## Collaboration

# Assessment of 15 years of the Scientific Committee as a food-related risk assessment body of the Spanish Agency for Food Safety and Nutrition

Vicente Calderón Pascual, María de los Ángeles Capón García-Caro, Victorio José Teruel Muñoz, Eduardo Cantalejo González\* and Ricardo López Rodríguez

Risk Assessment Area of the Subdirectorate-General for Food Safety Promotion

Spanish Agency for Food Safety and Nutrition

Ministry of Health, Consumer Affairs and Social Welfare

\* Tecnologías y Servicios Agrarios, S.A., S.M.E., M.P. (Tragsatec)

## Abstract

The Scientific Committee of the Spanish Agency for Food Safety and Nutrition (AESAN) is the risk assessment body that provides the Agency with scientific opinions on matters of food safety, defines the scope of the research works necessary for the Agency's functions and coordinates the work of expert groups that carry out risk assessments within the framework of the Agency's initiatives.

Since its formation 15 years ago, the Scientific Committee has welcomed 74 scientific experts in food safety and nutrition and has approved more than 100 chemical, biological and nutritional risk assessment reports. The reports are published on the AESAN website and in the Journal of the Scientific Committee of the AESAN.

The evaluation of the activity of the Scientific Committee over the last 15 years can be considered very positive thanks to the commitment and dedication of the scientists who have passed through it during this time.

## Key words

AESAN, Scientific Committee, risk assessment.

## 1. Introduction

Law 11/2001 of 5 July on the creation of the Spanish Agency for Food Safety (BOE, 2001) establishes as one of the Agency's functions to act as a national reference centre in the assessment of food risks. Furthermore, among the Agency's specific action principles, it is specified that it will provide its risk assessment services and formulate opinions for the authorities of the autonomous communities.

Royal Decree 19/2014 of 17 January, which approved the Statute of the Spanish Agency for Consumer Affairs, Food Safety and Nutrition (AECOSAN) (BOE, 2014) included among the functions of the Agency to provide for the competent Administrations, technical support and risk assessments in matters of food safety for its use in their regulatory and executive actions, facilitating the coordination of the entities involved.

Risk assessment is the scientific evaluation of the known or potential adverse health effects resulting from human exposure to foodborne hazards (FAO/WHO, 1995), and is one of the three components, along with the management and communication of risks, of the risk analysis on which the food safety policy in the European Union must be based.

To address the risk assessment functions, a Scientific Committee was created with the role of providing the Agency with scientific opinions on food safety, defining the scope of the research work necessary for the functions of the Agency and coordinating the work of expert groups that perform risk assessment activities within the framework of the actions of the Agency.

The first members of the Scientific Committee were appointed by the Management Board of the Agency on 18 June 2003 and its first meeting took place on 2 October 2003.

Therefore, in 2018, it was the 15th anniversary of the creation of the Scientific Committee of the Spanish Agency for Food Safety and Nutrition (AESAN), and an assessment of its functioning as an Agency food risk assessment body over these years can be carried out.

The Spanish Agency for Food Safety (AESAN) was created in 2001 and in 2006 it was renamed the Spanish Agency for Food Safety and Nutrition (AESAN). In 2014, with the assumption of competences in consumer matters, it became the Spanish Agency for Consumer Affairs, Food Safety and Nutrition (AECOSAN) and, finally, in 2018, through Royal Decree 1047/2018 of 24 August, implementing the basic organic structure of the Ministry of Health, Consumer Affairs and Social Welfare (BOE, 2018a), AECOSAN once again became the Spanish Agency for Food Safety and Nutrition (AESAN). This has meant that the Agency no longer has competence in matters of consumer affairs and that the collegiate bodies with functions in this area, as is the case of the Section of Consumer Affairs of the Scientific Committee, have been assigned to the Directorate General of Consumer Affairs.

Throughout this work, references to the Scientific Committee from 2014 to 2018 should be understood as corresponding only to its Section of Food Safety and Nutrition. With regard to the Agency, when it is mentioned, the Spanish Agency for Food Safety and Nutrition (AESAN) will be generally used as its nomenclature, except in the case of specific references that require the use of another name in force at that time.

## **2. Scientific Committee Regulation**

The roles and action procedures of the AESAN Scientific Committee have been established by different laws, royal decrees and regulations.

### **2.1 Law 11/2001 in which AESA is created**

Law 11/2001 on the creation of AESA (BOE, 2001) also created the Scientific Committee with the role of providing the Agency with scientific opinions on food safety, defining the environment of research work necessary for the functions of the Agency and coordinating group work by experts who perform risk assessment activities in the framework of the Agency's actions.

### **2.2 Law 44/2006 on improving consumer and user protection**

Law 44/2006 on improving consumer and user protection (BOE, 2006a) changed the name of the Spanish Agency for Food Safety (AESA) to the Spanish Agency for Food Safety and Nutrition (AESAN) and it was assigned a new role: planning, coordinating and developing strategies and actions that encourage information, education and promotion of health in the area of nutrition and especially in the prevention of obesity. Correspondingly, the Scientific Committee assumed this new role in the area of its task as a risk assessment body.

### **2.3 Law 17/2011 on food safety and nutrition**

In Article 31 of Law 17/2011 on food safety and nutrition (BOE, 2011a), the Scientific Committee was assigned two roles. These roles are described in Articles 29 and 30 of Law 17/2011 and refer, on the one hand, to the responsibility of promoting, coordinating and combining actions in terms of food risk assessment and, on the other, the identification and assessment of emerging food risks.

### **2.4 Royal Decree 19/2014 approving the AECOSAN Statute**

Royal Decree 19/2014, approving the AECOSAN Statute (BOE, 2014) involved the integration of the National Consumer Affairs Institute and AESAN, thus creating the Spanish Agency for Consumer Affairs, Food Safety and Nutrition (AECOSAN). This new Agency had competencies in consumer affairs and this led to the creation of two distinct sections within the Scientific Committee, a Section of Food Safety and Nutrition consisting of 20 members and a Section of Consumer Affairs consisting of 10 members.

Another change introduced by the new Statute was the removal of the number of members of the Scientific Committee corresponding to each specialty. The specialties were appointed by way of example, without the need to have a specific number of experts in each subject.

### **2.5 Internal regulation of AESAN's Scientific Committee**

The internal regulation of the Section of Food Safety and Nutrition of AESAN's Scientific Committee (AESAN, 2014a), in addition to including the stipulations of Law 11/2001 and Royal Decree 19/2014 for the Scientific Committee, establishes matters such as the minimum frequency of meetings, the system for replacing the Chairperson and Technical Secretary and the roles of Technical Secretary

exercised by the Risk Assessment Area of the Deputy Directorate General of Promotion of Food Safety.

### **3. Work procedure**

The Statute of the Agency sets some working principles and procedures of the Scientific Committee. Thus, it establishes that the Scientific Committee and its groups of experts will act in accordance with the principles of excellence and independence in their evaluation activity. It also establishes that the Scientific Committee will limit its scope of action to the requests raised by the Management Board, and may submit proposals to the aforementioned body on its own initiative, through the Executive Directorate. Therefore, the Scientific Committee must act to fulfil the mandates of the Management Board, but it can also make proposals to the Board.

The Statute establishes that the Scientific Committee will formally express itself through Reports of the Scientific Committee of the Spanish Agency for Consumer Affairs, Food Safety and Nutrition, which will be made public in accordance with the provisions of the Statute and in which, in the event of a dispute, the dissenting votes triggered will be recorded. For this reason, in the titles of the reports the word Report is used with the aim of avoiding the use of other terms such as Opinion.

The Scientific Committee and its members must channel any institutional relationship resulting from their belonging to the Agency through the Executive Directorate and the Management Board. Furthermore, they must refrain from carrying out risk communication activities, as well as any type of manifestations or statements in relation to their assessment activity, without the express authorisation of the Management Board. They are bound by professional secrecy during the reporting process and until they are considered finalised and made public.

The Scientific Committee normally holds four face-to-face meetings a year but can also meet electronically, in accordance with Article 17 of Law 40/2015 of 1 October, on the Public Sector Legal System; all collegiate bodies may be constituted, convene, hold sessions, adopt agreements and send minutes remotely.

The face-to-face meetings usually take place at AESAN's headquarters in Madrid but on some occasions, they have been held outside Madrid, as occurred with the sessions held in 2016 and 2018 at the Universities of Valencia and Murcia, respectively.

Once a report request is approved by the Management Board, it is passed to the Scientific Committee and a working group is formed, with one of its members acting as coordinator. When the working group has a draft report, it is discussed in a plenary session with the rest of the Committee and, where appropriate, is approved.

It is occasionally necessary to incorporate experts external to the Committee into the working group. Approximately one quarter of the Committee's reports have included external collaborators. AESAN has a database of experts in food safety and nutrition that experts can join, stating their areas of expertise (AESAN, 2018a). To be incorporated into this database, relevant and verifiable experience must be available, justified through evidence such as scientific publications, participation in research projects or post-graduate degrees.

Once a report has been approved by the plenary session of the Scientific Committee, it is presented to the Management Board and published on AESAN's website.

### **3.1 Public prices and fees**

AESAN provides some risk assessment services at the request of external applicants within the framework of its competences and following acceptance by the Management Board. These file assessment and report issuing services may be subject to public prices or fees.

In accordance with Law 8/1989, of 13 April on Public Prices and Fees (BOE, 1989), fees are taxes whose taxable event consists of the exclusive or special use of the public domain, the provision of services or the performance of activities under public law that refer to, affect or benefit the taxpayer in a particular way, when the services or activities are not requested or received voluntarily for taxpayers or are not provided or carried out by the private sector. Moreover, the following will be considered public prices: pecuniary consideration that is paid for the provision of services or the performance of activities carried out under the Public Law system when, with these services or activities also being provided by the private sector, they are voluntarily requested by the administration.

Fees are not subject to value added tax (VAT) while they do apply to public prices.

#### **3.1.1 Fees**

Law 17/2011 of 5 July on Food Safety and Nutrition (BOE, 2011a) establishes the fees applicable to the assessment of food files, food ingredients, processing aids or technological processes.

The fees are applicable to assessments that the legislation establishes must be carried out by the Scientific Committee, such as:

- Royal Decree 1052/2003 of 1 August, approving technical-sanitary regulations on certain sugars intended for human consumption (BOE, 2003).
- Royal Decree 1601/2010 of 26 November, approving the basic materials for the manufacture of chewing gum or bubble gum base (BOE, 2010).
- Royal Decree 847/2011 of 17 June, establishing the positive list of permitted substances for the manufacture of polymeric materials intended to come into contact with food (BOE, 2011b).
- Royal Decree 640/2015 of 10 July, approving the list of authorised processing aids for the preparation of edible vegetable oils and their identity and purity criteria, and amending the technical-health regulations of edible vegetable oils (BOE, 2015).

It is expected that, in the near future, legislation will be approved that authorises the use of processing aids in all stages of production, transformation and distribution of different types of foods (AESAN, 2018b). This authorisation will require prior assessment of the safety of using the aforementioned processing aids by the Scientific Committee of AESAN and, therefore, it will be subject to a fee.

Currently, in accordance with Art. 55, Section 3, of Law 17/2011, within the taxable event of carrying out assessments of food files, food ingredients, processing aids or technological processes, fees of different amounts are established, between 1 000 and 2 000 euros for these concepts:

- Assessment of files related to processing aids (substances previously authorised in human diet).
- Assessment of files related to processing aids (substances not previously authorised in human diet).
- Assessment of files related to technological processes.
- Assessment of files related to foods and food ingredients previously authorised in human diet in the European Union.
- Assessment of files related to foods and food ingredients not previously authorised for human diet in the European Union.

The amount of these fees established in 2011 has been updated with small percentage increases set in the budget laws of different years and, as such, between 2011 and 2018 they have increased by 5.1 %.

### **3.1.2 Public prices**

Order SAS/3397/2009 of 4 December, establishing the public prices for the performance of activities by the Spanish Agency for Food Safety and Nutrition (BOE, 2009) stipulates the application of public prices for the performance of different assessment activities referring to:

- Assessment of files related to processing aids (substances previously authorised in human diet).
- Assessment of files related to processing aids (substances not previously authorised in human diet).
- Assessment of files related to technological processes.
- Assessment of files related to foods and food ingredients previously authorised in human diet in the European Union. Assessment of files related to foods and food ingredients not previously authorised for human diet in the European Union.
- Issuing of a scientific advice report on the assessment of food risks.

The assessment of the same product by the Scientific Committee may be subject to a fee or a public price. Thus, for example, at the moment, the assessment of the safety for using a processing aids in the production of certain sugars intended for human consumption would be subject to a fee since there is a rule that establishes the obligation to obtain the opinion of the Scientific Committee before authorising its use. However, if the use as a processing aids refers to fruit or vegetables, the assessment would be subject to a public price since, currently, there is no regulation that requires this evaluation to be carried out by the Scientific Committee.

## **4. Members of the Scientific Committee**

The members of the Scientific Committee are selected and appointed by the Management Board, at the proposal of the Chairperson, for a renewable period of 2 years. The selection criteria established by the Statute are based on the excellence and suitability of the candidates for the required

functions, as well as on their independence and objective availability for the proper performance of their role.

The members of the Scientific Committee do not receive any remuneration for being members or for the exercising of functions inherent to their membership of the Committee.

The first composition of the Committee remained practically unchanged from 2003 to 2008 and, from that moment, its composition was renewed every 2 years, such that ten Committee members must leave it because they have completed the maximum 4-year period and so that another ten may continue for 2 more years until they complete the 4-year period.

In the calls for renewal of the Committee, between 50 and 70 scientists from universities, hospitals and other research centres normally apply. It is only necessary to submit an application, a declaration of interests and a complete *curriculum vitae*.

Law 11/2001 establishes the specific Principles of action of the Agency and, in this regard, it indicates that the members of the Management Board and the Scientific Committee will make statements of causes that generate a situation of incompatibility for the development of their management.

The AESAN Statute establishes that the members of the Scientific Committee must complete a declaration of conflict of interests before the Secretariat and must update it when the circumstances require it, resulting from the exercise of the position in relation to other professional activities. When they are public employees of the General State Administration, these declarations must be sent to the Conflicts of Interest Office of the Ministry of Finance so that this unit may decide on the compatibility of these activities under Law 53/1984 of 26 December on Incompatibilities of staff at the service of the Public Administrations (BOE, 1984).

In addition, before the start of each session, the Chairperson of the Committee reminds its members of the need not to participate in the discussion of reports that may give rise to a conflict of interest.

The Statute also establishes that, in the Section of Food Safety and Nutrition, there will be specialists from different fields, such as Food Toxicology, Microbiology, Virology, Parasitology or Food Zoonoses, Human Epidemiology, Animal Epidemiology, Biotechnology and Genetic Modification, Immunology and Allergology, Human Nutrition, Epidemiology and Public Health from the point of view of Nutrition, Animal Diet, Pharmacology, Food Technology Processes and Analysis and Instrumentation.

The first Statute of 2002 set a specific number of members for each specialty but, at this time, this is no longer the case, although it is intended to cover as much variety as possible within the specialties required in the Committee.

The members of each of the sections of the Scientific Committee nominate, from among them, a Chairperson and a Vice-chairperson. In the 2003-2018 period, there were five Chairpersons and five Vice-chairpersons (Table 1) and three Technical Secretaries, among them, the main promoter of the Scientific Committee, and the Deputy Director General of Scientific Coordination of the Agency, Jesús Campos Amado.

**Table 1.** Chairpersons and Vice-chairpersons of the Scientific Committee. AESAN–Section of Food Safety and Nutrition in the 2003-2018 period

Period	Chairperson	Vice-chairperson
2003-2010	Andreu Palou Oliver	Juan José Badiola Díez
2011-2012	Rosaura Farré Rovira	Francisco Martín Bermudo
2013-2014	Emilio Martínez de Victoria Muñoz	Antonio Martínez López
2015-2016	Guillermina Font Pérez	Ascensión Marcos Sánchez
2017-2018	Gaspar Ros Berruezo	Ángeles Jos Gallego

Between 2003 and 2018, 74 scientists from universities (81 %), research centres (12 %) and hospitals (7 %) were members of the Scientific Committee. Between 2003 and 2018, 62 sessions were held, 60 of them face-to-face and 2 conducted by electronic means. The percentage of attendance at the sessions by the members of the Committee in the last 5 years has been 90 %.

The first composition of the Committee consisted of 17 men and 3 women, and since 2015 the composition has been equally balanced (Table 2). With regard to the distribution by profession, pharmacists and veterinarians have been the most frequent among the members of the Committee (Table 3).

Madrid is the Autonomous Community that has contributed the most members to the Scientific Committee, followed by Catalonia and the Community of Valencia (Table 4). Between 2003 and 2018 the universities of Barcelona, Madrid (Complutense), the Balearic Islands and Zaragoza contributed experts to the Scientific Committee on an ongoing basis.

**Table 2.** Gender distribution of the members of the Scientific Committee in the 2003-2018 period

Period	Men	Women
2003-2005	17	3
2006-2008	16	4
2009-2010	15	5
2011-2012	11	9
2013-2014	11	9
2015-2016	10	10
2017-2018	10	10
<b>Total 2003-2018</b>	<b>46</b>	<b>28</b>



**Table 3.** Profession distribution of members of the Scientific Committee in the 2003-2018 period

Period	Pharmacists	Vets	Biologists	Doctors	Chemists	Agricultural engineers	Science and Technology Food
2003-2005	1	8	5	2	4	0	0
2006-2008	1	8	5	3	3	0	0
2009-2010	6	6	4	2	2	0	0
2011-2012	7	3	5	3	2	0	0
2013-2014	7	2	5	3	2	1	0
2015-2016	9	3	3	3	1	1	0
2017-2018	7	6	3	2	1	0	1
<b>Total 2003-2018</b>	<b>23</b>	<b>17</b>	<b>15</b>	<b>10</b>	<b>7</b>	<b>1</b>	<b>1</b>

**Table 4.** Autonomous communities' distribution of the members of the Scientific Committee in the 2003-2018 period

Period	2003-2005	2006-2008	2009-2010	2011-2012	2013-2014	2015-2016	2017-2018	Total 2003-2018
Community of Madrid	9	8	5	3	3	3	3	<b>19</b>
Catalonia	4	4	4	5	2	3	3	<b>13</b>
Community of Valencia	0	1	1	2	6	5	4	<b>12</b>
Andalusia	1	1	3	4	2	1	1	<b>6</b>
Castile-Leon	3	3	2	1	1	1	2	<b>6</b>
Aragon	2	2	2	2	2	1	1	<b>5</b>
Galicia	0	0	2	2	1	1	0	<b>3</b>
Balearic Islands	1	1	1	1	1	1	1	<b>3</b>
Murcia	0	0	0	0	0	2	2	<b>2</b>
Canary Islands	0	0	0	0	1	1	1	<b>2</b>
Navarre	0	0	0	0	1	1	1	<b>2</b>
La Rioja	0	0	0	0	0	0	1	<b>1</b>

## 5. Scientific Committee reports

### 5.1 Report requests

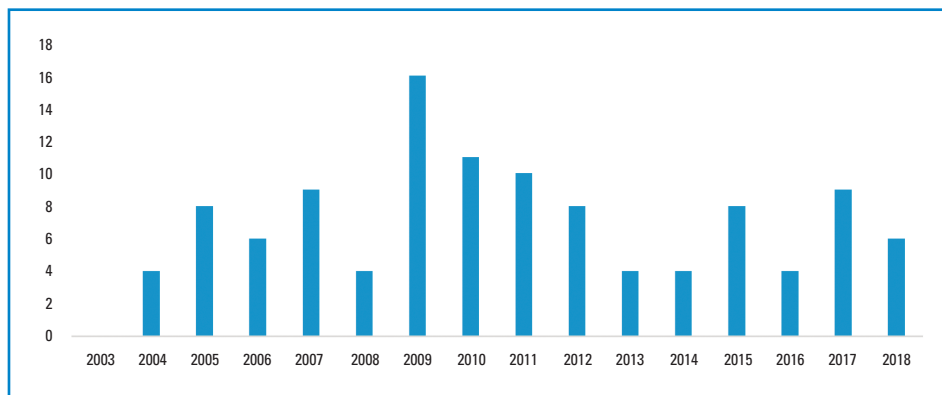
Requests for reports to the Scientific Committee may originate from requests from private or public entities. Requests from private entities were made within the framework of the authorisation procedure for the marketing of novel foods (AESAN, 2009a, 2013a, 2015a, 2017a, b, c) or processing aids (AESAN, 2008a, 2008b, 2011a, b, c), which since 2011 have been subject to the payment of a fee. Some requests for assessment of processing aids by companies were related to products used in the bacterial disinfection of fruits and vegetables (AESAN, 2013b, 2016, 2017d, 2018c) that were subject to payment of a public price since there was no specific regulation that obliged assessment in AESAN.

With regard to public entity requests, these can be requests from units of the Agency or from external entities. The biological, chemical and nutritional risk management units are the main requesting parties within the Agency, followed by the Food Alert and Official Control and NAOS Strategy Unit.

Within the external public entities, the autonomous communities have made some requests, as reflected in some reports (AESAN, 2006, 2009b, c, 2015b). This is a fairly small number of requests, although it should be taken into account that some reports requested by the Agency itself may be inspired by issues raised by the autonomous communities in different forums.

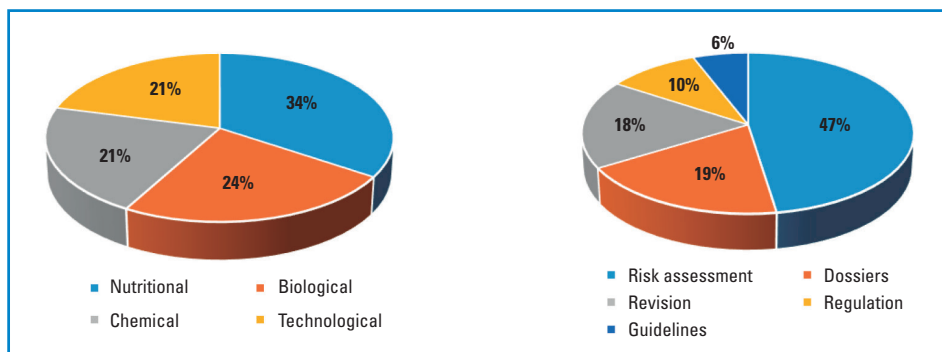
### 5.2 Reports issued

From 2003 to 2018, 111 reports have been approved, which is an average of 7 annual reports (Figure 1).



**Figure 1.** Scientific Committee reports approved in the 2003-2018 period

The issues addressed are very varied, in figure 2 you can see the distribution of reports by type of nutritional, biological, chemical or technological risk, although the report occasionally addresses multiple issues and it is not easy to classify it in a specific category.



**Figure 2.** Classification by risk type and report type of the reports approved by the Scientific Committee in the 2003-2018 period

In 2003-2018 period almost half of the reports approved corresponded to risk assessments of various types of hazards (47 %). In addition, reports have been prepared with regard to dossiers submitted by companies for the assessment of consumption safety or of the use of different foods or food products (19 %), review reports on a matter of interest in food safety (18 %), reports in relation to current regulations (10 %) and guidelines (6 %).

The time required for the approval of a report depends on the specific issue in question. The average time has been 240 days (8 months) but it must be taken into account that for dossiers submitted by companies (fundamentally new foods or processing aids) it is common to request additional information to the applicant and the time it takes to provide that information is not attributable to the Scientific Committee. Without taking into account this type of reports, the average time required for the approval of a report in the 2003-2018 period was 205 days (6.8 months).

With regard to the format of the reports, the terms of reference of the request are usually presented in the introduction. There is a summary and key words that are translated into English and incorporated into the report published in Spanish and paragraphs of conclusions and references. In general, the reports are quite extensive, with an average of 20 pages.

### 5.3 Scientific Committee Journal

Law 11/2001, on establishing the specific principles of action of the Agency, indicates that in accordance with the principle of transparency, all citizens have the right of access, by the procedure that is determined in regulations and, among others, to the scientific opinions drafted by the Agency.

In this regard, the reports of the Scientific Committee are made public through the AESAN website, classified by date of approval and by type of risk, and as part of the AESAN Scientific Committee Journal. This journal was first published in 2005 and two issues are released a year. Until 2011 it was also published on paper but since then it has only been published in its electronic version.

The publication of the reports as part of a journal facilitates citation referenced by other scientists in their publications. Furthermore, to promote the international dissemination of the reports

of the Scientific Committee, since 2006 the reports have included the summary and key words in English and, since 2011, they have been translated fully into English.

Although the reports are accessible through the AESAN website, they are also included in knowledge junction, the information sharing platform on risk assessment of the European Food Safety Authority (EFSA).

The electronic publication of the journal on the Internet must meet the AA requirement levels of UNE 139803: 2012 Standard (UNE, 2012). This standard establishes the characteristics that must be fulfilled by the information and other contents available through web technologies on the Internet, intranets and any type of computer networks, so that they can be used by most people, including people with disabilities and the elderly, either autonomously or through the relevant support products.

## 5.4 Use of the reports in food risk management

The main use of the risk assessments carried out by the Scientific Committee is to allow risk management decisions to be made based on the best scientific evidence.

The first mentions of reports of the Scientific Committee that appear in the legislation are those that figure in Royal Decree 1420/2006 on prevention of parasitosis by anisakis in fishery products supplied by establishments that serve food to final consumers or to groups (BOE, 2006b) and Royal Decree 463/2011, which establishes for lagomorphs unique application measures of the Community provisions on hygiene of the production and marketing of food products (BOE, 2011c).

Following are some reports that have been of special significance for risk management since they have allowed the modification of national and international legislation or based communication campaigns to prevent food risks.

### 5.4.1 Risk of trichinosis due to consumption of piglet meat

The report approved in 2012 in relation to the risk of trichinosis due to consumption of piglet meat (AESAN, 2012a) has had an impact that is particularly significant because of its international scope.

Regulation (EC) No. 2075/2005, laying down specific rules on official controls for *Trichinella* in meat (EU 2005), indicated that domestic pig carcasses should be subjected to systematic sampling in the slaughterhouses in the framework of post-mortem examinations, without young piglets slaughtered for human consumption being treated differently.

This required the piglets to also be sampled to control *Trichinella* when, in principle and in certain cases of controlled breeding, it may not have been necessary.

In its report, the Scientific Committee gave the opinion that for any type of exploitation, the available scientific data consider that until weaning, carried out between 21 and 28 days of age, and during the subsequent weeks, the physiology of the digestive system of piglets is adapted to the digestion of milk proteins and is not prepared for the digestion of meat. Moreover, the detailed control of food, in order not to compromise the development and life of the pigs, means that the risk of the piglets eating meat or other products infected with *Trichinella* spp. or that it could complete the biological cycle to become infective larvae before the animals are slaughtered, can be considered low.

Maintaining the normal weaning periods at 21-28 days and considering the scenarios of higher risk (recently weaned pigs and in an extensive environment that had access to material contaminated with *Trichinella*), the possibility of the appearance of infective larvae would be included among 38 and 47 days of age (more than 5 weeks). So the maximum age of slaughter at which we could consider the risk of transmission of trichinosis in non-controlled pigs, weaned at 21 days of age is low, and could be established at 5 weeks (35 days).

According to the conclusions of this report, Regulation (EU) 2015/1375 that repealed Regulation (EC) No. 2075/2005 laying down specific rules on official controls for *Trichinella* in meat (EU, 2015) stated that it will not be necessary to examine the presence of *Trichinella* in carcasses and meat of non-weaned domestic pigs less than 5 weeks of age.

At international level, the *Codex Alimentarius*, in its guidelines for the control of *Trichinella* spp. in Suidae meat (Codex, 2015) has used the report of the Scientific Committee as a reference to establish that unweaned pigs slaughtered at an age of less than 5 weeks may be exempted from post-slaughter control measures when there is relevant information that can be verified by the competent authority.

#### 5.4.2 Conditions of use of certain substances used in food supplements

Another series of reports approved between 2012 and 2017 on conditions of use of certain substances used in food supplements resulted in the 2018 publication of Royal Decree 130/2018, amending Royal Decree 1487/2009 of 26 September on food supplements (BOE, 2018b).

Food supplements are foodstuffs whose purpose is to supplement the normal diet and which are concentrated sources of nutrients or other substances with a nutritional or physiological effect, alone or in combination, marketed in dosed form.

Royal Decree 1487/2009 regulates vitamins and minerals that can be used in the manufacture of food supplements in Spain but not the use of other substances as food supplements. This meant that companies that wished to sell substances other than vitamins and minerals had to first notify their marketing in another country of the European Union and then notify its placing on the market in Spain, based on the principle of mutual recognition within the European Union.

In order to solve this problem, the Scientific Committee was requested to assess a series of substances other than vitamins and minerals for their safety of use as food supplements. The Committee assessed 78 of these substances, their maximum daily amounts and consumer warnings in five reports (AESAN, 2012b, 2013c, 2014b, 2015c, 2017e).

As a result of these reports, Royal Decree 130/2018 (BOE, 2018b) amended Royal Decree 1487/2009 authorising the use of certain substances with nutritional or physiological effects, other than vitamins and minerals in the manufacture of food supplements.

#### 5.4.3 Safety criteria that limit exposure to acrylamide produced by frying potatoes

Risk management measures not only involve legislative aspects but can also refer to communication to consumers in order to avoid or reduce their exposure to certain food risks.

In 2017, AESAN's Scientific Committee issued a report on the safety criteria that limit exposure to acrylamide produced by frying potatoes, with recommendations for their application in the domestic environment (AESAN, 2017f) that have been included in a drop-down leaflet (Figure 3).

<b>1. Buy potatoes...</b> <ul style="list-style-type: none"><li>• At their optimal maturity point, without sprouts or green parts.</li><li>• Try to ensure they are not very small since they accumulate more reducing sugars.</li></ul>	<b>2. At home...</b> <ul style="list-style-type: none"><li>• Keep them out of the fridge.</li><li>• Store them in a dark, dry place, which will prevent germination.</li><li>• Avoid long-term storage.</li></ul>
<b>3. Before frying...</b> <ul style="list-style-type: none"><li>• Cut the potatoes into thick strips ("French style") which is better than finely sliced.</li><li>• Wash the potatoes with a lot of tap water.</li><li>• Dry them fully before cooking and in this way, you will avoid long frying times.</li></ul>	<b>4. For cooking...</b> <ul style="list-style-type: none"><li>• You can boil, roast or use the microwave instead of frying.</li><li>• Avoid frying at temperatures above 175 °C.</li><li>• Reduce the frying time.</li><li>• Remove them when they are golden and, in any case, leave out the parts that are too dark.</li><li>• Limit re-use of frying oil and air out the kitchen after finishing.</li></ul>

**Figure 3.** Drop-down leaflet on acrylamide in foods. A specific case: fried potatoes. Recommendations of AESAN's Scientific Committee. **Source:** (AESAN, 2018d).

## 6 Discussion

In November 2018, an anonymous survey was conducted for all members of the Scientific Committee on different aspects of the process of joining the Committee, meetings, reports and their overall opinion. The survey was answered by 17 of the 18 members of the Committee who attended the session on 28 November 2018 in which the surveys were collected.

With the questions that gave the option to provide five answers from least to most positive (for example, from very inadequate to very adequate) a numerical score can be obtained by correspondingly multiplying each answer by a number from 1 (most negative response) to 5 (most positive response) and take the average. A score of 3 would indicate an intermediate point, neither positive nor negative; above 3 the answer would be positive and below 3, negative.

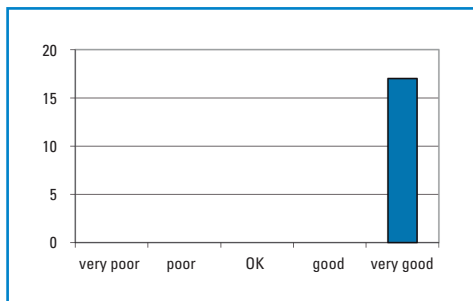
In none of the questions asked was a negative average response obtained.

- **Between 4.5 and 5:** The best rated aspects by Committee members were the experience of membership in the Committee (5), which all indicate as very good (Figure 4), personal care (4.94) and the technical support (4.88) (Figure 5) and administrative support (4.88) provided by AESAN, also highlighting here the organisation of travel (4.88) which almost 90 % consider to be very adequate. Other very well rated aspects refer to the organisation of meetings (4.59-4.53) and the information provided by AESAN to prepare the reports (4.53).
- **Between 4 and 4.5:** The specialties represented in the Committee (4.47) (Figure 6), the quality of the reports (4.47) and their format (4.29) are also very well rated, as well as the means available for the AESAN meetings (4.24) and the terms of reference provided by the Agency (4).

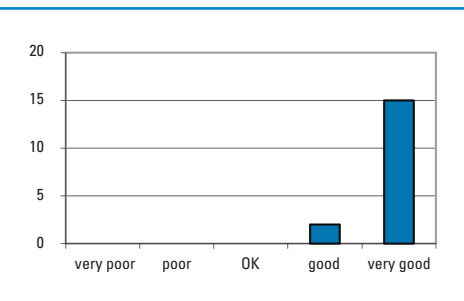
- **Between 3.5 and 4:** The simplicity of the process to form part of the Committee (4) (Figure 7), the content of the information on the Committee (3.88), the visibility of the reports (3.76) and the Committee (3.53) on the AESAN website were highly rated in general, but not as much as the aspects indicated above.

Some questions related to temporary issues do not allow a numerical assessment to be carried out as in the previous surveys. Although most of the responses considered the maximum period of membership of the Committee to be of a normal duration, almost one third considered it short or very short (Figure 8) and they proposed alternatives such as 3+2 or 3+3 years. In general, the duration of the sessions was considered to be sufficient as well as the number of annual face-to-face sessions (four). Lastly, the time required to prepare the reports was considered to be of an intermediate duration by the majority of the members of the Committee and long by two of them.

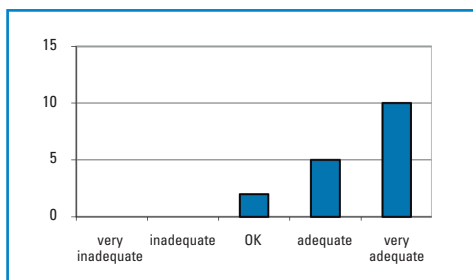
In most cases there is not a great divergence in the answers obtained to each question. The greatest variability occurs in the responses on the visibility of the reports or the Committee itself, in which, although they focus on the response that considers it adequate, five possible answers were given (Figure 9).



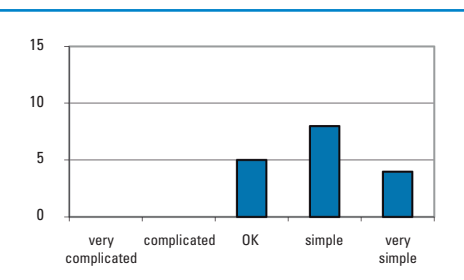
**Figure 4.** Experience of membership in the Scientific Committee



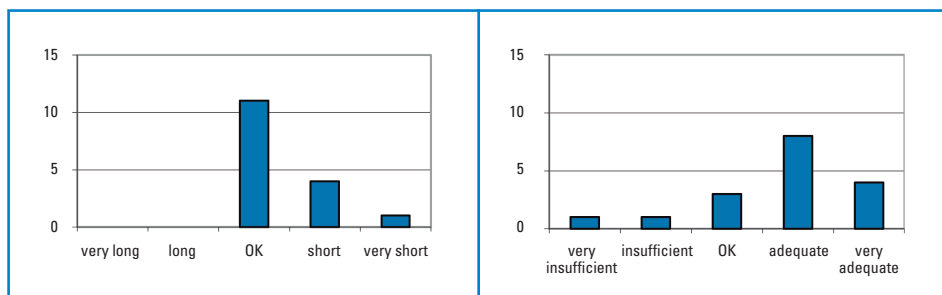
**Figure 5.** Technical support received by the Technical Secretary of the Scientific Committee



**Figure 6.** Specialties represented in the Scientific Committee



**Figure 7.** Process to form part of the Scientific Committee



**Figure 8.** Maximum membership time in the Scientific Committee

**Figure 9.** Visibility of the Scientific Committee reports on AESAN's webpage

According to the responses received, the overall opinion of the functioning of the Section of Food Safety and Nutrition of the Scientific Committee is very positive.

The period of membership of the Committee may seem short, but it must also be taken into account that it is an unpaid activity and that it is convenient to give other scientists the opportunity to meet and collaborate with the Agency. Unlike the models of some countries that work with panels differentiated by areas of knowledge, AESAN's Scientific Committee is multidisciplinary and scientists from different areas coexist within the same structure. This is especially useful for issues that must be addressed from different fields of knowledge, but it also helps to have various points of view.

The cost of this collegiate body is limited to the organisation of meetings and the maintenance of a small group of risk assessment staff of the Agency to manage it and facilitate the preparation of reports, providing scientific-technical and administrative support.

The possibility offered by the Statute regarding the constitution of expert groups for the assessment of food and nutrition risks under the responsibility of the Scientific Committee broadens the possibilities of collaboration to other scientists with the Agency.

Although the timelines for creating the reports are reasonable, progress can be made and improved through the use of online collaborative platforms and meetings of the working groups before the plenary sessions.

The dissemination of the Committee's reports, both to consumers and professionals, can be improved by increasing their visibility on the Agency's website, in the media and on social media, and by indexing them in scientific search engines, which may require their publication in scientific journals with peer review.

The balance of the activity of the Scientific Committee in the last 15 years can be considered very positive and this is due to the commitment and dedication of the scientists who have passed through it in this period.

## References

- AESAN (2006). Agencia Española de Seguridad Alimentaria y Nutrición. Dictamen en relación con el empleo del cloruro de litio como marcador en vinos con destino a la destilación. *Revista del Comité Científico de la AESAN*, 4, pp: 55-59.



- AESAN (2008a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN). Evaluación del uso de la sal sódica del ácido poliaspártico como coadyuvante tecnológico en la producción del azúcar. *Revista del Comité Científico de la AESAN*, 8, pp: 69-70.
- AESAN (2008b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN). Evaluación del uso del extracto de lúpulo en solución acuosa como coadyuvante tecnológico en la producción del azúcar. *Revista del Comité Científico de la AESAN*, 8, pp: 71-72.
- AESAN (2009a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) en relación a una solicitud de evaluación inicial para la comercialización de la arracacha (*Arracacia xanthorrhiza*) precocida y congelada, en el marco del Reglamento (CE) N° 258/97 de Nuevos Alimentos y Nuevos Ingredientes. *Revista del Comité Científico de la AESAN*, 10, pp: 9-18.
- AESAN (2009b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) sobre los criterios de seguridad aplicables al contenido de ácido domoico en la vieira (*Pecten maximus*) para su recolección. *Revista del Comité Científico de la AESAN*, 10, pp: 41-52.
- AESAN (2009c). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) sobre el consumo humano ocasional de almortas (*Lathyrus sativus*). *Revista del Comité Científico de la AESAN*, 11, pp: 9-19.
- AESAN (2011a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) en relación al uso de una arcilla caolinítica como coadyuvante tecnológico en el proceso de obtención del aceite de oliva virgen. *Revista del Comité Científico de la AESAN*, 15, pp: 103-114.
- AESAN (2011b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) en relación al uso del peróxido de hidrógeno como coadyuvante tecnológico en el procesado de hemoderivados y cefalópodos. *Revista del Comité Científico de la AESAN*, 15, pp: 11-32.
- AESAN (2011c). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) en relación al uso del carbonato cálcico como coadyuvante tecnológico en el proceso de obtención de aceite de oliva virgen. *Revista del Comité Científico de la AESAN*, 15, pp: 33-41.
- AESAN (2012a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) en relación con el riesgo de triquinosis por consumo de carne de lechón. *Revista del Comité Científico de la AESAN*, 15, pp: 115-130.
- AESAN (2012b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) sobre condiciones de uso de determinadas sustancias distintas de vitaminas, minerales y plantas para ser empleadas en complementos alimenticios-1. *Revista del Comité Científico de la AESAN*, 17, pp: 11-234.
- AESAN (2013a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación a una solicitud de evaluación inicial para la comercialización de la microalga marina *Tetraselmis chuii* en el marco del Reglamento (CE) N° 258/97 sobre nuevos alimentos y nuevos ingredientes alimentarios. *Revista del Comité Científico de la AESAN*, 18, pp: 11-27.
- AESAN (2013b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación al uso de una solución acuosa de peróxido de hidrógeno, ácido acético y ácido peracético como coadyuvante tecnológico para la desinfección bacteriana de cítricos y pimientos y el agua de lavado de los mismos. *Revista del Comité Científico de la AESAN*, 18, pp: 53-69.

- AESAN (2013c). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición (AESAN) sobre condiciones de uso de determinadas sustancias distintas de vitaminas, minerales y plantas para ser empleadas en complementos alimenticios-2. *Revista del Comité Científico de la AESAN*, 18, pp: 71-92.
- AESAN (2014a). Agencia Española de Seguridad Alimentaria y Nutrición. Reglamento interno del Comité Científico de la Agencia Española de Seguridad Alimentaria y Nutrición.
- AESAN (2014b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Consumo, Seguridad Alimentaria y Nutrición (AECOSAN) sobre condiciones de uso de determinadas sustancias para ser empleadas en complementos alimenticios-3. *Revista del Comité Científico de la AECOSAN*, 19, pp: 51-93.
- AESAN (2015a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación a una solicitud de evaluación inicial para la comercialización de hidroxitirosol obtenido por síntesis química en el marco del Reglamento (CE) N° 258/97 sobre nuevos alimentos y nuevos ingredientes alimentarios. *Revista del Comité Científico de la AECOSAN*, 21, pp: 11-25.
- AESAN (2015b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe sobre el empleo como sal comestible del cloruro sódico obtenido a partir de un proceso de producción de cloruro potásico por flotación. *Revista del Comité Científico de la AECOSAN*, 21, pp: 27-35.
- AESAN (2015c). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Consumo, Seguridad Alimentaria y Nutrición (AECOSAN) sobre condiciones de uso de determinadas sustancias para ser empleadas en complementos alimenticios-4. *Revista del Comité Científico de la AECOSAN*, 22, pp: 79-131.
- AESAN (2016). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación al uso de una solución acuosa de peróxido de hidrógeno, ácido acético y ácido peracético (23/17/15) como coadyuvante tecnológico para la desinfección bacteriana de cítricos y tomates y el agua de lavado de los mismos. *Revista del Comité Científico de la AECOSAN*, 23, pp: 21-43.
- AESAN (2017a). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación a una solicitud de evaluación inicial para la comercialización de un liofilizado de la microalga marina *Tetraselmis chuii* en complementos alimenticios en el marco del Reglamento (CE) N° 258/97 sobre nuevos alimentos y nuevos ingredientes alimentarios. *Revista del Comité Científico de la AECOSAN*, 25, pp: 11-21.
- AESAN (2017b). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación a una solicitud de evaluación inicial para la comercialización de semillas de chía (*Salvia hispanica*) en platos preparados esterilizados basados en granos de cereales, pseudocereales y/o legumbres, en el marco del Reglamento (CE) N° 258/97 sobre nuevos alimentos y nuevos ingredientes alimentarios. *Revista del Comité Científico de la AECOSAN*, 25, pp: 47-54.
- AESAN (2017c). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación a una solicitud de evaluación inicial para la comercialización de semillas de chía (*Salvia hispanica*) en chocolate en tabletas, en el marco del Reglamento (CE) N° 258/97 sobre nuevos alimentos y nuevos ingredientes alimentarios. *Revista del Comité Científico de la AECOSAN*, 26, pp: 21-27.
- AESAN (2017d). Agencia Española de Seguridad Alimentaria y Nutrición. Informe sobre el uso de una solución acuosa de ácido fosfórico y propilenglicol como coadyuvante tecnológico para la estabilización del cloro utilizado en el lavado de vegetales frescos cortados y hortalizas de hoja de IV gama. *Revista del Comité Científico de la AECOSAN*, 26, pp: 11-19.
- AESAN (2017e). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Consumo, Seguridad Alimentaria y Nutrición (AECOSAN) sobre advertencias en el etiquetado de determinadas sustancias para ser empleadas en complementos alimenticios-5. *Revista del Comité Científico de la AECOSAN*, 25, pp 41-45.

- AESAN (2017f). Agencia Española de Seguridad Alimentaria y Nutrición. Informe del Comité Científico de la Agencia Española de Consumo, Seguridad Alimentaria y Nutrición (AECOSAN) sobre los criterios de seguridad que limitan la exposición a acrilamida producida por la fritura de patatas. *Revista del Comité Científico de la AECOSAN*, 26, pp: 29-55.
- AESAN (2018a). Agencia Española de Seguridad Alimentaria y Nutrición. Base de datos de Expertos en Seguridad Alimentaria y Nutrición. Disponible en: <https://expertal-aecosan.msssi.gob.es/Expertal/loginWeb.exp?execution=e1s1> [acceso: 3-12-18].
- AESAN (2018b). Agencia Española de Seguridad Alimentaria y Nutrición. Borrador proyecto relativo a los coadyuvantes tecnológicos autorizados en alimentos. Available at: [http://www.aecosan.msssi.gob.es/AECOSAN/docs/documentos/seguridad\\_alimentaria/evaluacion\\_riesgos/informes\\_comite/PROYECTO\\_coayuvantes\\_tecnologicos\\_consulta.pdf](http://www.aecosan.msssi.gob.es/AECOSAN/docs/documentos/seguridad_alimentaria/evaluacion_riesgos/informes_comite/PROYECTO_coayuvantes_tecnologicos_consulta.pdf) [accessed: 3-12-18].
- AESAN (2018c). Agencia Española de Seguridad Alimentaria y Nutrición. Informe en relación a la seguridad del uso de varias soluciones acuosas de peróxido de hidrógeno, ácido acético y ácido peracético como coadyuvantes tecnológicos para la desinfección bacteriana del agua de lavado de cítricos y pimientos en las plantas de procesado. *Revista del Comité Científico de la AECOSAN*, 27, pp: 41-59.
- AESAN (2018d). Agencia Española de Seguridad Alimentaria y Nutrición. Acrilamida en los alimentos. Nuevas normas y recomendaciones por tu salud. Madrid - 8 de noviembre de 2018. Available at: [http://www.aecosan.msssi.gob.es/AECOSAN/docs/documentos/publicaciones/seguridad\\_alimentaria/ACRILAMIDA\\_ALIMENTOS.pdf](http://www.aecosan.msssi.gob.es/AECOSAN/docs/documentos/publicaciones/seguridad_alimentaria/ACRILAMIDA_ALIMENTOS.pdf) [accessed: 3-12-18].
- BOE (1984). Ley 53/1984, de 26 de diciembre, de Incompatibilidades del Personal al Servicio de las Administraciones Públicas. BOE N° 4 de 4 de enero de 1985, pp: 165-168.
- BOE (1989). Ley 8/1989, de 13 de abril, de Tasas y Precios Públicos. BOE N° 90 de 15 de abril de 1989, pp: 10894-10898.
- BOE (2001). Ley 11/2001, de 5 de julio, por la que se crea la Agencia Española de Seguridad Alimentaria. BOE N° 161 de 6 de julio de 2001, pp: 24250-24255.
- BOE (2002). Real Decreto 709/2002, de 19 de julio, por el que se aprueba el Estatuto de la Agencia Española de Seguridad Alimentaria. BOE N° 178 de 26 de julio de 2002, pp: 27560-27570.
- BOE (2003). Real Decreto 1052/2003, de 1 de agosto, por el que se aprueba la Reglamentación técnico-sanitaria sobre determinados azúcares destinados a la alimentación humana. BOE N° 184 de 2 de agosto de 2003, pp: 29975-29977.
- BOE (2006a). Ley 44/2006, de 29 de diciembre, de mejora de la protección de los consumidores y usuarios. BOE N° 312 de 30 de diciembre de 2006, pp: 46601-46611.
- BOE (2006b). Real Decreto 1420/2006, de 1 de diciembre, sobre prevención de la parasitosis por anisakis en productos de la pesca suministrados por establecimientos que sirven comida a los consumidores finales o a colectividades. BOE N° 302 de 19 de diciembre de 2006, pp: 44547-44549.
- BOE (2009). Orden SAS/3397/2009, de 4 de diciembre, por la que se fijan los precios públicos por la realización de actividades de la Agencia Española de Seguridad Alimentaria y Nutrición. BOE N° 303 de 17 de diciembre de 2009, pp: 106606-106609.
- BOE (2010). Real Decreto 1601/2010, de 26 de noviembre, por el que se aprueban las materias básicas para la elaboración de la goma base del chicle o goma de mascar. BOE N° 305 de 16 de diciembre de 2010, pp: 103888-103893.
- BOE (2011a). Ley 17/2011, de 5 de julio, de seguridad alimentaria y nutrición. BOE N° 160 de 6 de julio de 2011, pp: 71283-71319.
- BOE (2011b). Real Decreto 847/2011, de 17 de junio, por el que se establece la lista positiva de sustancias permitidas para la fabricación de materiales poliméricos destinados a entrar en contacto con los alimentos. BOE N° 164 de 11 de julio de 2011, pp: 76316-76330.

- BOE (2011c). Real Decreto 463/2011, de 1 de abril, por el que se establecen para los lagomorfos medidas singulares de aplicación de las disposiciones comunitarias en materia de higiene de la producción y comercialización de los productos alimenticios. BOE N° 89 de 14 de abril de 2011, pp: 38696-38697.
- BOE (2014). Real Decreto 19/2014, de 17 de enero, por el que se refunden los organismos autónomos Instituto Nacional del Consumo y Agencia Española de Seguridad Alimentaria y Nutrición en un nuevo organismo autónomo denominado Agencia Española de Consumo, Seguridad Alimentaria y Nutrición y se aprueba su estatuto. BOE N° 29 de 3 de febrero de 2014, pp: 7264-7290.
- BOE (2015). Real Decreto 640/2015, de 10 de julio, por el que se aprueba la lista de coadyuvantes tecnológicos autorizados para la elaboración de aceites vegetales comestibles y sus criterios de identidad y pureza, y por el que se modifica el Real Decreto 308/1983, de 25 de enero, por el que se aprueba la Reglamentación Técnico-Sanitaria de Aceites Vegetales Comestibles. BOE N° 179 de 28 de junio de 2015, pp: 64243-64249.
- BOE (2018a). Real Decreto 1047/2018, de 24 de agosto, por el que se desarrolla la estructura orgánica básica del Ministerio de Sanidad, Consumo y Bienestar Social y se modifica el Real Decreto 595/2018, de 22 de junio, por el que se establece la estructura orgánica básica de los departamentos ministeriales. BOE N° 206 de 25 de agosto de 2018, pp: 84681-84704.
- BOE (2018b). Real Decreto 130/2018, de 16 de marzo, Real Decreto 130/2018, de 16 de marzo, por el que se modifica el Real Decreto 1487/2009, de 26 de septiembre, relativo a los complementos alimenticios. BOE N° 206 de 27 de marzo de 2018, pp: 33335-33342.
- Codex (2015). *Codex Alimentarius*. Directrices para el control de *Trichinella* spp., en la carne de suidos. CAC/GL 86-2015.
- EU (2005). Commission Regulation (EC) No. 2075/2005 of 5 December 2005 laying down specific rules on official controls for *Trichinella* in meat. OJ L 238 of 22 December, pp: 60-82.
- EU (2015). Commission Implementing Regulation (EU) 2015/1375 of 10 August 2015 laying down specific rules on official controls for *Trichinella* in meat. OJ L 212 of 11 August 2015, pp: 7-34.
- FAO/WHO (1995). Food and Agriculture Organization/World Health Organization. Informe de la Consulta Mixta FAO/OMS de Expertos sobre la aplicación del análisis de riesgos a cuestiones de normas alimentarias, Ginebra, 13-17 de marzo de 1995 (WHO/FNU/FOS/95.3).
- UNE (2012). Norma española UNE 139803:2012. Requisitos de accesibilidad para contenidos en la web.