



DUTCH
SAFETY BOARD

Summary

Emerging food safety risks



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The Dutch Safety Board

When accidents or disasters happen, the Dutch Safety Board investigates how it was possible for these to occur, with the aim of learning lessons for the future and, ultimately, improving safety in the Netherlands. The Safety Board is independent and is free to decide which incidents to investigate. In particular, it focuses on situations in which people's personal safety is dependent on third parties, such as the government or companies. In certain cases the Board is under an obligation to carry out an investigation. Its investigations do not address issues of blame or liability.

Dutch Safety Board
Chairman: J.R.V.A. Dijsselbloem
M.B.A. van Asselt
S. Zouridis

Secretary Director: C.A.J.F. Verheij

Visiting address: Lange Voorhout 9
2514 EA The Hague
The Netherlands

Postal address: PO Box 95404
2509 CK The Hague
The Netherlands

Telephone: +31 (0)70 333 7000

Website: safetyboard.nl
E-mail: info@safetyboard.nl

N.B. The full report is published in the Dutch language. If there is a difference in interpretation between the Dutch report and English summary, the Dutch text will prevail.

CONTENT

Summary 5

Conclusions 8

Consideration 10

Recommendations 13

Following the discovery of fipronil in eggs in the summer of 2017, the Dutch Safety Board investigated how emerging risks to food safety are detected and assessed in the Netherlands. The study concluded that the food system in the Netherlands is vulnerable to emerging food safety risks. There is no structured approach to detecting and assessing such risks and in consequence, risks are not always identified or are discovered too late, which can result in unnecessary damage to public health.

Emerging risks

In current practice, risk assessments are mainly based on risks that have arisen in the recent past. This leads to limited awareness of emerging risks, which can take various forms. Sometimes they arise from newly identified hazards that can lead to significant exposure. Other cases concern risks from unexpected or increased exposure and susceptibility to an existing hazard. It is, therefore, not always a case of new risks emerging; there can also be known risks that manifest themselves in a new way. An improved understanding of emerging risks through better detection and assessment should result in a more robust food safety system, in which companies and public authorities are less frequently surprised and consumers suffer less damage to health.

Practical lessons

The Board studied five practical examples that show clearly what the problem areas are regarding the detection and assessment of emerging food safety risks.

In the case of the fipronil incident, there was a lack of vigilance in relation to the use of illegal pesticides against red mite on laying hens. For more effective risk identification, it is also important to create a clear picture of the circumstances that increase a risk. Although it was known that illegal pesticides were being used against red mite in the egg supply chain, this did not lead to an investigation of illegal pesticides other than those that had been used up to that point. This was in spite of the fact that the underlying problem – the nuisance of red mite that were hard to eradicate – was persisting, which heightened the risk of non-authorized pesticides being used. When indications and reports of possible illegal activities emerged, they were not properly handled and pursued.

The discovery of the – natural – toxin TTX in shellfish in 2015 is an example of an emerging risk that was promptly identified and tackled. Through the timely intervention of the Netherlands Food and Consumer Product Safety Authority [*Nederlandse Voedsel- en Warenautoriteit*] (NVWA), potential damage to consumer health was prevented. Because this was a hazard that had appeared in a new form, and for which there was no legal standard, the NVWA acted on the basis of the precautionary principle under the General Food Law [*Algemene Levensmiddelenverordening*]. This was done in close cooperation with the Ministry of Health, Welfare and Sport [*Ministerie van Volksgezondheid, Welzijn en Sport*] (VWS).

If indications of possible risks to food safety are lacking or are missed, the impression may mistakenly persist that risks are under control. This investigation has shown that insufficient action has been taken in response to indications that the risks of pathogens in fruit and vegetables are higher than previously thought. In the United States, risk estimates are significantly higher than in the Netherlands and the EU as a whole. Although this is known to experts, no research has been done to find an explanation for this disparity. Neither has there been any investigation to determine whether the US estimate or that of the Netherlands and the EU is closer to reality. It therefore remains unclear how big the risks of pathogens in fruit and vegetables are and whether these risks are being adequately managed. It is becoming increasingly urgent to obtain greater clarity, because fruit and vegetables are being consumed raw to an increasing extent, including by vulnerable groups.

Research on the risks posed by pathogens in fruit and vegetables has also revealed a major shortcoming in the food safety system as a whole. In only 0.02 per cent of cases it is known which food made people ill. In consequence, an important feedback mechanism is lacking in order to detect emerging risks in good time and combat them at source, and to check how the food safety system as a whole is working properly.

Since 2014, a sharp rise in hepatitis E (HEV) infections has been observed in the populations of the Netherlands and Europe. Hepatitis E, just as Q fever in goats in the past, is an example of an emerging zoonosis. In the case of hepatitis E, pigs and pork are the main source. Although there are various ways in which these zoonoses spread, there are parallels in the way in which the risks are identified and assessed. Both cases concern an emerging and uncertain risk. This uncertainty has an inhibiting effect on the approach to tackling such risks. The Ministers of Health, Welfare and Sport (specifically, the Minister for Medical Care and Sport [*minister van Medische Zorg en Sport*]) and Agriculture, Nature and Food Quality [*Minister van Landbouw, Natuur en Voedselkwaliteit*] (LNV) leave considerations regarding the proportionality of measures and the application of the precautionary principle in dealing with HEV too much to scientific experts. Such considerations are the responsibility of the ministers, but when advice is given by experts, roles relating to risk assessment and risk management become confused. The Minister for Medical Care and Sport has not explicitly set out why specific available measures are not chosen to fight HEV and what residual risk results from the choice made. For example, with the current approach, each year around 133,000 people are infected with HEV, of whom it is estimated that 1,200 develop symptoms of inflammation of the liver (fatigue, fever, jaundice), which persist for one to four weeks. A few dozen patients develop neurological disorders, which can lead to muscle paralysis. To date, a few people have died in the Netherlands due partly or wholly to the consequences of HEV infection.

The Dutch Safety Board considers it important to obtain a better picture not only of emerging risks, but also of developments and trends that can give rise to these food safety risks. Examples are the internationalization of trade flows, the increase in the numbers of vulnerable consumers (such as the elderly and chronically ill) and the rapid growth in the number of channels through which food is sold directly to consumers. The trend for consuming more sustainable, unprocessed, local and organic food is also accompanied by food safety risks, which are not always recognized. Efforts to limit food waste bring risks to public health, because consumers are given confusing advice regarding expiry dates.

Approach to emerging risks fails to make progress

At the start of this millennium serious food safety incidents such as mad cow disease and dioxin in the food chain gave rise to the need to identify emerging food safety risks sooner. Responsible authorities began to develop methods and practices for gaining a better understanding of emerging risks. However, the urgency to identify emerging risks at an early stage has subsided. Partly due to a lack of strategic direction with specific goals and a timeline from government, research has become fragmented, both with respect to funding and implementation. Methods and practices are not being implemented effectively. The NVWA has insufficient capacity, resources and expertise for the oversight, detection, risk assessment and laboratories needed to identify emerging food safety risks.

Responsibility for uncertain risks

Characteristic of emerging food safety risks is that they are accompanied by uncertainty, including in relation to possible measures. The fear of measures subsequently turning out to have been unnecessary or too invasive can lead to those measures not being taken in the first place. There is a tendency to do more and more research in order to reduce uncertainty, even though achieving certainty is impossible or only possible to a limited extent. This extra research fails to put an end to the discussions about the extent of the risk and the proportionality of measures. It is important for parties to be – and to remain – receptive to, and to actively look for, signs that can influence the existing risk profile. This study has shown that parties sometimes have trouble adjusting existing risk profiles.

Cooperation between government and food companies is necessary in order to gain a clearer picture of emerging risks. However, companies do not feel any incentive to investigate more than they are legally obliged to do. They are afraid that being open about emerging risks will lead to disproportionate intervention by the regulator, reputational damage, and a competitive disadvantage in relation to companies that are less open. This has been an intractable problem for years – a problem for which no satisfactory solution has yet been found.

In addition to uncertainty, the lack of legal standards to fall back on is an obstacle to managing emerging risks. The ministers responsible take too little initiative to plug gaps in legislation and regulations. When standards are missing, considerations have to be made and decisions taken as to the application of the precautionary principle and proportionality of measures. Such policy considerations and decisions are a political responsibility and cannot be delegated to scientific experts of the NVWA or the National Institute for Public Health and the Environment [*Rijksinstituut voor Volksgezondheid en Milieu*] (RIVM). Expert advice on food safety then becomes mixed up with policy-based advice on how to handle risks.

This section contains the conclusions drawn from the investigation of the detection and assessment of emerging food safety risks. The conclusions in part 1 concern the shortcomings that were established at the system level. The specific shortcomings that emerge from the practical examples are listed as conclusions in Chapter 2 of the report. The conclusions in part 2 relate to the underlying causes and the conclusions in part 3 look at responsibilities.

1. The food system in the Netherlands is vulnerable to emerging food safety risks. There is no structured approach to detecting and assessing such risks. In consequence, risks are not always identified or are discovered too late, which can result in unnecessary damage to public health.

- a. Risk assessments by food business operators are mainly based on risks that have arisen in the recent past. Risks posed by new versions of known hazards and risks, and risks that arise through a change in environmental factors, remain largely unnoticed.
- b. Research activities focused on developing methods and practices for better detecting and assessing emerging risks are fragmented and threaten to become bogged down. Implementation of these activities has thus far been lacking.
- c. Identifying developments that could lead to new food safety risks or increase existing risks is only happening to a limited extent. The NVWA has made a start on this, but this has not yet resulted in changes to policy or supervision – or only to a very limited extent.

2. The following obstacles stand in the way of improving the detection and assessment of emerging food safety risks:

- a. There is too little urgency in government and food business operators to develop and implement methods and practices with which emerging food safety risks can be identified at an early stage.
- b. The NVWA has insufficient capacity and expertise with respect to supervision, detection, risk assessment and laboratory analyses for identifying emerging food safety risks.
- c. Joint initiatives by food business operators, investigation agencies and EU member states are hard to get off the ground.
- d. Opportunities for reporting problems and abuses within food business operators, between food business operators and between food business operators and the supervisory authority are too limited. There is a lack of incentives for people to share such information.
- e. Uncertainty as to whether emerging food safety risks will actually arise and about the economic consequences of any action can lead to paralysis.
- f. Parties are not receptive to signals that do not fit into the existing risk profile.

- 3. The Minister for Medical Care and Sport (Ministry of Health, Welfare and Sport) and the Minister of Agriculture, Nature and Food Quality are taking too little responsibility in relation to emerging, uncertain food safety risks.**
- a. The ministers provide too little strategic direction for research on methods and practices for identifying emerging food safety risks, with the result that these are not made sufficiently available to professionals in the field.
 - b. The ministers take too little initiative to plug gaps in legislation and regulations. They leave the interpretation of legislation and regulations too much to the NVWA.
 - c. The ministers leave responsibility for policy considerations regarding the application of the precautionary principle and proportionality too much to scientific experts of the RIVM and the NVWA. As a result, risk assessment by experts becomes entangled with risk management.
 - d. The ministers do not set out explicitly enough the reasons why specific policy measures are chosen in relation to emerging food safety risks, and what residual risk results from the choice made.

Over the last few decades, managing food safety has become considerably more complex and more vulnerable. Products and the raw materials of products that land on the plates of Dutch consumers can come from all over the world. The variety of products has increased and consumption patterns and production processes have changed, with 'conventional' guarantees of food safety, such as heating and conserving, sometimes being abandoned. In spite of this complexity and increased vulnerability, it must be possible for the consumer to have confidence that food safety is guaranteed in such a way that the food on his plate is safe.

In recent years, the Netherlands has been surprised by food safety incidents on several occasions. Examples are the outbreaks of EHEC in sprouted seeds, salmonella in smoked salmon, and Q fever. These outbreaks led to health damage and to the deaths of individuals. Illegal practices, such as the fraudulent sale of horsemeat and the recent illegal use of fipronil in the egg sector, led to social unrest and a loss of confidence in food safety.

Although it is clear that it is not possible to prevent every single incident, it should be expected that parties in the food chain will do all that is reasonably possible to ensure that people are not made ill by food. A robust food safety system stands or falls with the timely and comprehensive identification of possible hazards and risks. It is also essential that there be signals indicating that those risks are occurring, and for those signals to be picked up and recognized in good time. It is, therefore, not just a case of identifying what can go wrong, and what the consequences are if it does go wrong, but also of detecting that it has gone wrong. This makes it possible to pre-empt food incidents as far as this is possible and, if they do occur, to intervene rapidly, so that risks to public health remain limited.

The fipronil incident shows that the food safety system does not work optimally on these points. The emerging risk was detected and recognized too late. Although it turned out afterwards that there was limited damage to health, the incident led to great social disquiet and substantial economic damage. This report gives more examples of gaps in the system. From this it can be concluded that there is no structured approach in the Netherlands to detecting and assessing emerging food safety risks. Parties in the food chain focus mainly on known hazards and risks. Risks from new versions of known hazards and risks, and risks that arise through a change in the environment, remain unnoticed. Indications of existing risks are not always picked up and recognized.

Moreover, the detection of food infections does not function sufficiently well: in only a minimal proportion (0.02%) of infections is it discovered which food caused illness. This means that the infection cannot be tackled at source and that there is a lack of feedback for assessing how well the food safety system works.

Research on methods and practices for better identifying emerging food safety risks is fragmented and implementation of the results is hard to get off the ground.

Furthermore, there is ambiguity regarding roles and responsibilities relating to risk assessment and risk management, with the result that these become confused. Deliberations on how to manage emerging risks are insufficiently transparent and at crucial moments, action is delayed for too long. It is not made explicit enough in policy choices why some measures are taken and others are not, and what residual risk is left as a result of the choice made.

Towards a structured approach

The Dutch Safety Board sees opportunities for improving the detection and assessment of emerging risks. A condition for this is that the responsibilities for detecting and assessing emerging risks should be clearly assigned. Naturally, companies are – and continue to be – responsible for managing food safety risks and the NVWA ensures that they do so. More needs to be done in the case of emerging food safety risks, because they are often surrounded by uncertainty and there are not always immediate prospects for taking action. This type of risk is not automatically tackled by companies, because a legal basis is lacking, taking action involves extra costs, and the benefits are not clear. Companies also fear that if they detect emerging risks, they will be forced to take precautionary measures, although this might subsequently turn out to have been unnecessary.

The Dutch Safety Board sees an important role for the Minister for Medical Care and Sport, in addition to the Minister of Agriculture, Nature and Food Quality, in obtaining a clearer picture of this type of risk. The Board considers it necessary for the Minister for Medical Care and Sport to set up a coordinating unit to gather information from as many sources as possible (science, RIVM, NVWA, companies and consumers) and independently draw up a comprehensive overview of possible threats to food safety. This should put an end to the fragmentation of information and activities. The coordinating unit will operate independently from policy and policy implementation, and will report periodically (at least once a year) on emerging food safety risks and developments that could threaten food safety. The reports can also cover vulnerabilities in the food safety system as a whole, because these can also ultimately lead to incidents. The coordinating unit will also be able to give advice on priorities for research on emerging food safety risks and put forward solutions to intractable problems that the sector is wrestling with and for which insufficient solutions exist, such as the lack of effective control methods for fighting pests. In this way, a comprehensive picture will be created of emerging risks for food safety and gaps in the food safety system.

As quickly as possible after publication of the reports, it must be made clear what consequences they have for policy. The Board therefore proposes that after the reports have been published, the Minister for Medical Care and Sport should explain what they mean for policy. Where necessary, for example in the case of zoonoses or risks that arise in farming businesses, there will be coordination with the Minister of Agriculture, Nature and Food Quality. This will give more pesticide to the political responsibility of the Minister(s) for food safety.

The Dutch Safety Board is aware that it is not always a simple matter to follow up reports on emerging risks. The earlier an existing or potential hazard is identified, the greater the uncertainty as to its possible consequences. Further research can reduce uncertainty, but it must be ensured that research is not used to delay taking action. Emerging risks are inextricably linked to a need to act while there is still uncertainty.

The Dutch Safety Board discerns a tendency to hand over to scientific experts as much as possible the task of deliberating on possible action, such as applying the precautionary principle and the proportionality of measures. This is not desirable, because risk assessments then become mixed up with risk management and those involved lose sight of political responsibility. Experts can advise on the effectiveness of possible measures, but deliberations on the proportionality of measures, the application of the precautionary principle, and, ultimately, the desirability of measures, are primarily the responsibility of politicians – in this case the Minister for Medical Care and Sport and, where relevant, the Minister of Agriculture, Nature and Food Quality. It is important here that policy choices, including the uncertainty surrounding emerging food safety risks and the residual risk associated with the chosen approach, be made transparent, so that they can become part of the social debate.

The responsibility of companies in relation to emerging food safety risks must also be developed further. It is desirable for companies, in common with the scientific community and consumers, to pass on information and signs pertaining to such risks. This will enhance the quality of the threat analysis, which can also be of benefit to companies. The NVWA should make sure that companies use this information in developing their approach to dealing with risk.

In this way, it will be possible to gain a more systematic and comprehensive picture of emerging food safety risks, which will strengthen the food safety system as a whole. Initially, as a result of this, latently present risks will come to light, where they are currently still overlooked. At first, this could create the impression that food safety is worsening rather than improving. This is a phase that needs to be completed in order to strengthen the system and improve food safety. After all, it is always better to prevent incidents than to have to deal with them, with all the associated risks, unrest and costs.

RECOMMENDATIONS

These recommendations aim in the first instance to ensure that stakeholders shoulder their responsibility to strengthen the detection and assessment of emerging risks. These improvements will also bolster the food safety system as a whole. The Dutch Safety Board calls on stakeholders also to draw lessons from this report outside of these recommendations.

To the Minister for Medical Care and Sport (Ministry of Health, Welfare and Sport, VWS):

1. Make arrangements to ensure that emerging food safety risks and developments that can lead to emerging food safety risks are identified systematically and in a timely manner.
 - a. Set up a coordinating unit that is independent from policy and policy implementation, and that will identify emerging food safety risks in good time. This unit will gather information about – and signs of – emerging food safety risks and gaps in the food safety system, from as many sources as possible, and publish public reports on the threats that arise from these risks and gaps. This will be done at least once a year, or as often as is necessary based on specific threats.
 - b. As soon as possible after publication of the reports, announce the measures that are to be taken in response to the reports. If necessary, involve the Minister of Agriculture, Nature and Food Quality in this process. Make the policy choices transparent and set out explicitly what residual risk is left as a result of the choice made.
 - c. Operationalize the application of the precautionary principle in such a way that primary responsibility lies with the Minister for Medical Care and Sport (Ministry of Health, Welfare and Sport), with the NVWA retaining the scope to apply the precautionary principle in acute situations.
 - d. Set specific goals for developing, implementing and further elaborating methods for identifying emerging food safety risks. Organize the basic conditions for achieving these goals. Ensure that the methods and other research results are made available to regulators and business.
 - e. Prioritize research which can answer the most urgent questions on emerging risks.
2. Intensify cooperation within the EU to achieve systematic detection and assessment of emerging food safety risks, to which all member states contribute and which all member states can use.

To the RIVM:

3. Ensure substantial improvement in surveillance and in detecting the source of foodborne disease, as well as in the attribution of cases to food sources. In doing this, use the facilities offered by new diagnostic technologies as much as possible and seek cooperation with international institutes in order to develop best practices.

To the NVWA:

4. Oversee and ensure that food companies use the reports on threats and other relevant information on emerging food safety risks in their approach to risk.



Visiting address

Lange Voorhout 9
2514 EA The Hague
T 070 333 70 00
F 070 333 70 77

Postal address

PO Box 95404
2509 CK The Hague

www.safetyboard.nl