ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

ANNUAL REPORT 2003 : DRAFT 1

1. Members are invited to consider the attached first draft of the Committee's Annual Report for the calendar year 2003. Members are particularly asked to verify their personal details in Annex I and in the Register of Members' Interests (Annex II). If changes are required to be made, particularly to the Register of Interests, it would be appreciated if Members would notify these to the Secretariat as soon as possible.

2. It will be noted that Chapter 3 of the Report deals, *inter alia*, with the Committee's future work programme. Members views are sought on possible areas of work for the Committee in the short to medium-term.

3. In terms of finalising this draft Report, the intention is that, as soon as possible after 4 December, the Secretariat will produce a second draft, reflecting the outcome of the 4 December meeting and any comments on Draft 1. This will be circulated to Members by post, for clearance in correspondence. An agreed final draft will then be submitted by the Chairman to the Chairman of the Food Standards Agency, requesting early publication. Clearing the second draft in correspondence, rather than waiting for it to be considered at the ACMSF's March 2004 meeting, enables the Report to be published earlier in 2004 than would otherwise be possible.

4. In summary, Members are invited to :-

   - comment on the first draft of the ACMSF Annual Report 2003;

   - notify the Secretariat as soon as possible of any changes required to Annex I and II of the draft;

   - offer any suggestions in connection with the Committee's short and medium-term work programme; and

   - note the proposals for progressing the drafting and subsequent publication of the Report.

Secretariat
November 2003

DRAFT 1

Advisory Committee on the Microbiological Safety of Food

Annual Report 2003

Advises the Food Standards Agency on the Microbiological Safety of Food

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References

The Advisory Committee on the Microbiological Safety of Food (ACMSF) was established in 1990 to provide the Government with independent expert advice on the microbiological safety of food.

The Committee's terms of reference are :-

to assess the risk to humans from microorganisms which are used, or occur, in or on food, and to advise the Food Standards Agency (FSA) on any matters relating to the microbiological safety of food.

The various issues addressed by the Committee since its inception are detailed in this and previous Annual Reports[1-11] and in a series of subject-specific reports.[12-22]

Foreword

The Chairman’s Foreword is currently being drafted

Introduction

1. This is the twelfth Annual Report of the Advisory Committee on the Microbiological Safety of Food (ACMSF). It covers the calendar year 2003.

Chapter 1 : Administrative Matters

Membership

Appointments

2. Appointments to the ACMSF are made by the Food Standards Agency (FSA), after consultation with United Kingdom Health Ministers (i.e. the "Appropriate Authorities") in compliance with Paragraph 3(1) of Schedule 2 to the Food Standards Act 1999. The Agency has resolved that appointments to the ACMSF should be made in accordance with Nolan Principles[23] and the guidance issued by the Office of the Commissioner for Public Appointments (OCPA).[24] The FSA is not bound to follow OCPA guidance, as this applies only to appointments made by Ministers. However, although ACMSF appointments are not made by Ministers, the Agency has decided that it would nevertheless be right to comply with OCPA guidance.

Periods of appointment

3. To ensure continuity, appointments to the ACMSF are staggered (usually for periods of 2, 3 or 4 years) so that only a proportion of Members falls to be appointed, re-appointed or to retire each year.

Spread of expertise

4. A wide spectrum of skills and expertise is available to the ACMSF through its Members. They are currently drawn from commercial catering, environmental health, food microbiology, food processing, food research, food retailing, human epidemiology, medical microbiology, public health medicine, veterinary medicine, and virology. The Committee also has a Member with knowledge of small and medium size enterprises, and 2 lay/consumer Members.

5. Members are appointed on an individual basis, for their personal expertise and experience, not to represent a particular interest group.

Appointments in 2003

6. One new Member – Mr Philip Mepham – was appointed to the ACMSF in 2003.[25] Mr Mepham provides the Committee with environmental health expertise. His period of appointment runs from 1 April 2003 until 31 March 2006.

Re-appointments in 2003

7. The periods of appointment of 3 members – Ms Eva Lewis, Mr Brian Peirce and Mr David Piccaver – expired on 31 March 2003. All 3 were re-appointed for 2-year terms running from 1 April 2003 until 31 March 2005.[25]

Retirements in 2003

8. Mrs Patricia Jefford retired from the Committee on 31 March 2003 after 5 years' service. Professor Patience Mensah, who had been with the Committee for 2 years, also retired on the same date, reflecting her impending return to Ghana.

9. The Chairman expressed his gratitude to both retiring Members for their contribution to the work of the ACMSF and wished them well for the future.

Secretariat changes in 2003

10. From 1 April 2003, following her appointment as Head of the FSA's Microbiological Safety Division, Dr Judith Hilton stepped down as ACMSF Medical Secretary. She was replaced by Dr Paul Cook who became Scientific Secretary to the Committee.

Committee and Group meetings

11. The full Committee met 4 times in 2003 - on 20 March, 26 June, 18 September and 4 December. All 4 meetings were chaired by Professor Georgala and were open to members of the public.

12. The *Campylobacter* Working Group met twice, under the Chairmanship of Professor Georgala. The standing Surveillance Working Group (Chair : Professor Humphrey) considered a draft protocol for an FSA survey of *Salmonella* contamination of UK shell eggs, through correspondence rather than by meeting.

13. The *Ad Hoc* Group on Sewage Sludge (Chair : Dr Wyatt) exchanged views in correspondence on a series of risk assessments on the agricultural disposal of biosolids, catering waste, and manure and abattoir waste. Other, horizon scanning, *Ad Hoc* Groups met to consider Changing Social Habits (Chair : Dr Andrews), Imported Foods (Chair : Ms Davies), and Newly-Emerging Pathogens (Chair : Professor Hunter). **[DN : any meetings of the *Ad Hoc* Groups on Risk Assessment or Infant Botulism ?].**

Current membership and Declarations of Interests

14. Full details of the membership of the Committee and its Working and *Ad Hoc* Groups are given in Annex I. A Register of Members' Interests is at Annex II. In addition to the interests notified to the Secretariat and recorded at Annex II, Members are required to declare any direct commercial interest in matters under discussion at each meeting, in accordance with the ACMSF's Code of Practice (see Annex III of 2002 Annual Report).[11] Declarations made are recorded in the minutes of each meeting.

Personal liability

15. In 1999, the Secretary of State for Health undertook to indemnify ACMSF Members against all liability in respect of any action or claim brought against them individually or collectively by reason of the performance of their duties as Members (Annual Report 1999[8] paragraph 6 and Annex III). In 2002, the Secretariat asked the FSA to review this undertaking, given the fact that, since 2000, the ACMSF had reported to the Food Standards Agency where previously it had reported to UK Health Ministers. The outcome of the review is still awaited.

Openness

Improving public access

16. The ACMSF is committed to continuing to open up its work to greater public scrutiny. The agendas, minutes and papers (subject to rare exceptions on grounds of commercial or other sensitivity) for the Committee's quarterly meetings are publicly available and are posted on the FSA website at :

<http://www.food.gov.uk/science/ouradvisors/microbiogsafety>

17. The Committee also has an e-mail address :

<acmsf@foodstandards.gsi.gov.uk>

Open meetings

18. In each of the calendar years 2000, 2001 and 2002, the ACMSF held one of its quarterly meetings in public. Following the recommendations flowing from the FSA's Review of Scientific Committees,[26] the ACMSF decided that, from 2003 onwards, all of its quarterly meetings should be held in public.

19. The March, June and September 2003 meetings of the Committee were held in Aviation House, the Food Standards Agency's London

Headquarters. The December meeting was held in Trinity House, Tower Hill, London EC3.

20. All of these open meetings follow a common format. Time is set aside following the day's business for members of the public and others present to make statements and to ask questions about the ACMSF's work. The names of participants, the organisations they represent, and details of any statements made, questions asked and the Committee's response, are recorded in the minutes of the meeting concerned.

Work of the other advisory committees and cross-membership

21. The Secretariat provided Members with regular reports of the work of the other expert advisory committees advising the Food Standards Agency. Professor Johnston continued to serve as a member of the Advisory Committee on Novel Foods and Processes, thereby providing a first-hand link between ACMSF and ACNFP. In addition, Professor Gasson was appointed Chair of ACNFP with effect from 1 September 2003.[27]

Review of scientific committees

22. The ACMSF Secretariat provided the Food Standards Agency with 2 further 6-monthly progress reports on how it is implementing the recommendations of the Review of Scientific Committees.[26] These are at Annex III and Annex IV.

Chapter 2 : The Committee's Work in 2003

Campylobacter

23. Following the visit by a sub-group of the *Campylobacter* Working Group to Denmark and Norway in November 2002, and in accordance with the ACMSF's decision to feed advice into the FSA as soon as it became available, the Chairman wrote to the Agency in January conveying the impressions drawn from the Scandinavian visits. A copy of the Chairman's letter is at Annex V.

24. In March, the FSA briefed Members on its strategy for the control of *Campylobacter* in chickens.[28,29,30] This was focused on the farm and at the slaughterhouse. During the course of discussion of the strategy, Members expressed the view that evaluation would be an important element of the strategy and indicated their support for a rolling retail survey of *Campylobacter* in chicken meat. However, Members noted that a retail survey would not capture the output from all slaughterhouses and suggested that a slaughterhouse-based survey might be preferable. The assistance of the ACMSF's Surveillance Working Group was offered in planning any survey.

25. During the course of the year, the Working Group continued to develop its Report, and a substantially completed draft was submitted for consideration by the full Committee in September. At that stage, work was still needed in a number of areas eg. in relation to the efficacy of freezing, heat treatment and other carcass treatments; the planned chapter on poultry other than chickens; and proposed changes in European Union meat hygiene inspection procedures. ACMSF Members made a number of detailed comments which were considered, along with other new material, at a meeting of the *Campylobacter* Working Group in October 2003. A final draft was prepared following that meeting. This was cleared in correspondence, first with the *Campylobacter* Working Group and then with Members of the full ACMSF. At that stage, it was submitted to the Chairman of the FSA (a copy of the Chairman's letter to Sir John Krebs is at Annex VI). At the request of the Agency, the draft will be the subject of public consultation in the New Year. Once any comments arising from that process have been considered, the Committee will report on the outcome of the consultation and will submit a revised Second ACMSF Report on *Campylobacter* to the FSA, as necessary.

26. Following their October meeting, Members of the *Campylobacter* Working Group also decided to meet again, in 2004, to review possible research requirements. Once a view has been taken, a supplement to the Second Report on *Campylobacter* will be prepared, as required, for the FSA.

Avian Influenza

27. Following an outbreak of Avian Influenza (AI) among poultry in the Netherlands, the FSA asked the Committee in March to consider whether there was any risk to humans through food chain exposure pathways. By way of background, the FSA provided the ACMSF with a detailed briefing on the situation in the Netherlands[31] and advised Members that the Agency's initial conclusion was that the risk to human health was probably very low. This reflected a preliminary view provided by the Committee's virologist Member, Dr Brown.

28. The ACMSF's preliminary conclusion supported that of the FSA that the risk to human health from exposure to AI via the food chain was probably very low.[29] The Committee was nevertheless alert to the potential risk and so Dr Brown was requested to consult external experts and to prepare a formal risk assessment for consideration by the Committee. Members considered a report on the progress of the AI epidemic in June.[32,33] They heard that the burden of additional work generated by the Severe Acute Respiratory Syndrome (SARS) outbreak had prevented completion of the AI risk assessment. However, by that time, the decline of the AI epidemic in the Netherlands had rendered completion of the risk assessment less pressing. The chances of the virus getting into the food chain still seemed remote and there consequently seemed no need for urgent action to protect human health on the basis of current knowledge.

29. **[DN : outcome of consideration of risk assessment on 4 December].**

Severe Acute Respiratory Syndrome (SARS)

30. Members were briefed by the FSA in June on the risk to human health from the SARS pandemic, in particular the potential for foodborne transmission.[33,34] Members were informed that a novel coronavirus was generally accepted as being the causative agent of SARS. Whilst the virus was likely to have had an animal source, there was no evidence to suggest frequent zoonotic transfer. Unless there were a large number of cases of sub-clinical or asymptomatic infection, the epidemiology suggested that the virus was not one which transmits very easily. Person-to-person spread by inhalation of airborne droplets from the respiratory tract was the main mechanism of transmission. There was no direct evidence of transmission via the faecal-oral route but, in view of the fact that some of the animal coronaviruses caused gastrointestinal disease, the possibility of a gastrointestinal portal of entry could not be dismissed.

31. The Committee noted that, on the basis of the available evidence, the FSA considered it unlikely that the virus would be present in food, all the more so in countries with no human cases. In addition, because the SARS virus was rapidly killed by heat at 56°C, normal cooking would be

expected to destroy it. The Committee noted that the FSA thus regarded the risk of SARS being transmitted through the food chain as remote.

Clostridium botulinum

Vegetable-in-oil products

32. In March 2002, the ACMSF considered a paper containing standard FSA guidance on the risk of botulism from the home production of vegetable-in-oil products.[11,35,36] At that time, Members offered various comments and also pressed for the advice to be extended to cover commercial, as well as domestic, production of these foods. In June 2003, the Committee considered and commented upon further FSA advice on vegetable-in-oil products.[33,37] The Agency's advice remained that home bottling of products in oil should be avoided. FSA advice to commercial manufacturers was that these products could be safely produced provided they were formulated to prevent germination and growth of *Clostridium botulinum*. This meant reducing the water activity to below 0.94 or the pH to below 4.6. In the absence of these controlling factors, the Agency did not regard storage at refrigeration temperatures as sufficient to prevent germination and growth. While growth of *Cl. botulinum* did not occur below 3.3°C, domestic refrigerators could not be guaranteed to maintain this temperature.

33. The Committee reiterated that botulism was extremely rare in the UK as a cause of illness but, when it did occur, it could be extremely serious and was associated with a significant fatality rate. In commenting on the Agency's advice, Members noted that anyone bottling products in oil in the home was unlikely to consume them immediately and discard what was left. More practical advice might therefore be to consume the products within an appropriate time period on the day of production; to refrigerate, within an appropriate time period on the day of production, any of the product not consumed, and to consume or discard it within one week of production. Members felt that greater attention should be paid to the role of the oil in bottled products, and why its use gave cause for concern (ie. excluding air could encourage the growth of any *Cl. botulinum* present in the product being bottled). It was important that products being bottled were dry as placing wet vegetables in oil would risk encouraging the growth of any *Cl. botulinum* present. Other detailed comments made by Members are recorded in the minutes of the June 2003 meeting.[33]

Vacuum and modified atmosphere packed chilled foods

34. In 2001, the Committee commented on a first draft of FSA guidance on the safety and shelf life of vacuum and modified atmosphere packed chilled foods with respect to psychrotrophic *Clostridium botulinum*.[38] (Annual Report 2001,[10] paragraph 42). In September 2003, the Committee considered a further draft,[39] which had been amended to reflect the comments and suggestions Members had made in 2001. The

Committee agreed that the revised guidance reflected the ACMSF's advice[4,12] and that it was suitable for public consultation.

Infant botulism

35. The Committee was informed by the FSA in September 2003 that it had come to the Agency's attention that new types of food product, for babies aged 4-12 months, were being manufactured and sold in the UK.[40] Concern had been expressed that these products, which were chilled or frozen purées, had not been heat processed sufficiently to destroy *Clostridium botulinum* spores. There was thus a risk of infant botulism. The Agency sought the ACMSF's views on the risk associated with these types of product, specifically in relation to *Cl. botulinum* and infant botulism. The Committee decided that, as a first step, an *Ad Hoc* Group should be set up to assemble further information about the products and processes concerned and to formulate advice which could be considered by the full ACMSF. Membership and terms of reference of the Group are shown in Annex I. **[DN : any further progress in 2003 ?]**

Agricultural disposal of organic waste

36. The ACMSF, at the request of the Government, has been involved over a number of years with the peer review of the microbiological aspects of the risk assessment for the disposal of sewage sludge (biosolids) to agricultural land (see Annual Reports 1997[6] (paragraph 34), 1998[7] (paragraph 32), 2000[9] (paragraph 59), 2001[10] (paragraphs 64-65) and 2002[11] (paragraphs 35-36). The Committee had set up an *Ad Hoc* Group on Sewage Sludge to progress this work. In 2003, the *Ad Hoc* Group concluded its peer review work on the agricultural disposal of biosolids, and also assisted with the peer review of the microbiological aspects of 2 further risk assessments, for the agricultural disposal of catering waste containing meat, and animal manure and abattoir waste.

Sewage sludge (biosolids)

37. At the Committee's March 2003 meeting, Members were reminded that the objective of the risk assessment[41] had been to estimate the risks to humans of infection from consuming root crops grown on soil to which sewage sludge (biosolids) had been applied.[29,42] The parameters used in the risk assessment reflected the conditions of the Safe Sludge Matrix[43] and the proposed statutory controls for the agricultural use of sewage sludge. Quantitative risk assessments had been performed for *Salmonella*, *Escherichia coli* O157, *Campylobacter*, *Listeria monocytogenes*, *Cryptosporidium parvum*, *Giardia* and enteroviruses. The *Ad Hoc* Group had concluded that the risk assessment was based on a very conservative approach embodying large margins of safety. The risk to human health from consuming root crops grown on agricultural land on which treated sewage sludge had been spread seemed very small. The *Ad Hoc* Group regarded the contractors estimate of the potential annual number of human *Campylobacter* infections (37,000) as

unrealistically high because no account had been taken in the risk assessment of the effects of secondary storage which would serve to reduce numbers of campylobacters present. In addition, the contractor's model allowed for only 16 days' decay in/on soil, post application. This contrasted with the year or 30 months delay imposed under the Safe Sludge Matrix, depending on the crop involved, between application of sludge and harvesting the crop. These points had been taken up with the contractor who had made proposals for building in these factors to the risk assessment. The *Ad Hoc* Group had been satisfied with what was proposed.

38. Members endorsed the *Ad Hoc* Group's proposals for taking matters forward and also agreed, in response to a request by the contractor, that the ACMSF's peer review comments could be used in the foreword to the report of the risk assessment provided the Committee was able to retain editorial control over the wording. The Secretariat subsequently agreed with the Committee and with *Ad Hoc* Group members the terms of an ACMSF response to the contractor. A copy is at Annex VII.

Catering waste

39. The Animal By-Products Order 1999 (as amended) requires all catering wastes containing, or having been in contact with, meat or other products of animal origin to be disposed of so that they cannot be accessed by livestock and wild birds. Most of this material is currently incinerated or goes to landfill. An alternative disposal option being considered by Government is the use of composting or biogas plant to treat the materials, followed by spreading of the treated material on agricultural land. Before this option can be approved, it requires the 1999 Order to be amended. This proposal was the subject of a Department for Environment, Food and Rural Affairs (Defra) public consultation.

40. Recognising that a proportion of uncooked meat will be discarded as catering waste, Defra commissioned a risk assessment[44] which looked, amongst other things, at the risks to humans utilising compost or biogas residues and either consuming crops grown in treated fields or ingesting compost. The microorganisms addressed in the risk assessment were *Campylobacter*, *E. coli* O157, *Salmonella* and *Cl. botulinum*. The Food Standards Agency requested the opinion of the ACMSF on the potential human health risk[45] and the question was considered in the first instance by the *Ad Hoc* Group on Sewage Sludge. The outcome of the Group's deliberations was reported to the full Committee in June.[33] The Group reported that it regarded the approach adopted for the risk assessment as sound and also regarded as acceptable the conclusion that, if the conditions specified for composting and biogas treatment were complied with, then the risks to human health would be very low. However, the Group had a number of detailed observations which it proposed should be conveyed to Defra via the Food Standards Agency. Not least among these was the importance of eliminating any by-pass of the composting/biogas process which would serve to significantly reduce the

effectiveness of treatment. The Committee was asked to endorse the Group's observations and proposals. Members made a number of additional comments and agreed that these, together with the points identified by the *Ad Hoc* Group, should be forwarded to the FSA. A copy of the ACMSF's response is at Annex VIII.

Animal manure and abattoir waste

41. As reported in paragraph 33 of the ACMSF's 2002 Annual Report,[11] the FSA reported to Members on its work on the agricultural use of manures and slurries. In order to address a data deficit, the Agency had commissioned research on pathogen levels in fresh and stored manures and abattoir waste, and pathogen survival during storage and after application to land. The intention was to use the results of this research in a risk assessment to assess whether further action was needed to ensure the microbiological safety of crops grown on land on which this material had been spread. Pending the results of the work, the FSA had published draft guidance on 'Managing Farm Manures for Food Safety'. The ACMSF had commented on this in September 2002.[46]

42. Having received a report of the risk assessment commissioned to determine whether the application of farmyard manure, slurry and abattoir waste to agricultural land posed a significant food safety risk,[47] the FSA requested that the ACMSF should peer review this, a task initially addressed by the *Ad Hoc* Group on Sewage Sludge. The Group's conclusions were reported to the full Committee in June 2003 and Members' endorsement was sought of proposals for taking matters forward.[33,48] The Group said that it regarded the report of the risk assessment as well structured and well presented, and the approach taken by the contractor as sound, given the available data. However, the Group had a number of detailed observations which it felt needed to be addressed. As with the risk assessment for catering waste, one of these was concern about the effect of by-pass on the efficacy of the treatment process.

43. Members agreed that a response should go forward to the FSA reflecting the *Ad Hoc* Group's views that there were large holes in the risk assessment and that further work was required before it could be confidently used as the basis for taking policy decisions and developing meaningful guidance. A copy of the reply sent to the FSA is at Annex IX.

Mycobacterium bovis

44. In September 2003, the Committee was presented with preliminary results from FSA-funded research to investigate whether *M. bovis* was present in the edible tissue (i.e. specific lymph nodes, not muscle) of salvaged carcasses of cattle that had reacted positively to the tuberculin test.[49] These results showed that viable *M. bovis* was present in about 21% of 135 cattle with no visible lesions or with a single lesion, and in just under 5% of edible tissues from such cattle. The FSA asked the

Committee to assess the impact of the results on the ACMSF's risk assessment, published in January 2002.[21] The Committee was reminded that its risk assessment was based on human *M. bovis* TB data, not meat inspection data. Attention was also drawn to a number of pertinent developments – the proposal to discontinue the arrangement under which cattle over thirty months of age were kept out of the food chain; the increasing incidence of *M. bovis* in cattle; and the increase in numbers of reactor cattle. It was pointed out that these factors could lead to an increase in *M. bovis*-contaminated meat and the level of human exposure.

45. The Committee agreed that the preliminary results did not alter the outcome of its risk assessment. However, Members agreed to draw fresh attention to the recommendations in the ACMSF *M. bovis* Report[21] about maintaining enhanced surveillance of human *M. bovis* TB and alerting the FSA to any significant indications that eating meat from *M. bovis*-infected cattle constituted a health risk. Members also agreed that the ACMSF should recommend to the Food Standards Agency that it reviewed its decisions on the heat treatment option, and the proportionality of the cold storage option, identified in the Committee's Report.[21]

Raw mushroom advice

46. As a result of testing of catering and wholesale mushrooms sampled by environmental health officers in Lancashire in Spring 2001, *Salmonella* Kedougou was found in raw mushrooms from Northern Ireland. The FSA had therefore issued advice to consumers to wash, peel and cook mushrooms prior to consuming them. The source of the contamination was identified as sugar beet lime from the casing material. The mushroom industry had agreed to cease using sugar beet lime in casing material until such time as they could provide evidence that it was pathogen-free. A code of practice for mushroom casing in Northern Ireland and the Republic of Ireland had been produced. *Salmonella* testing of casing and mushrooms had also been introduced. Only one sample (of compost) had subsequently tested positive (for *Salmonella* Typhimurium).

47. In September 2003, the ACMSF was asked by the FSA[50] to consider whether, against the background of the work undertaken by the mushroom industry since the *S*. Kedougou incident, the Agency's advice to consumers to peel and cook mushrooms before use could be withdrawn (ie. advice to wash them would remain in place). Noting that the Agency's advice had been introduced in response to a particular problem which had subsequently been addressed and eliminated, Members indicated that they were content for the peel and cook element of the advice to be withdrawn. The Committee asked that it should be made clear, however, that it was referring to commercially-cultivated mushrooms only, not to wild mushrooms.

Surveillance

FSA survey of *Salmonella* contamination of UK-produced shell eggs on retail sale

48. The Surveillance Working Group submitted a number of detailed comments to the Food Standards Agency in January on a draft protocol for a survey of the *Salmonella*-status of UK shell eggs on retail sale (Annex X).[51] The Working Group also made clear to the Agency its view that a survey of imported eggs should be carried out concurrently with the planned survey of UK-produced eggs, the better to inform FSA risk management decisions. **[DN : Surveillance Working Group comments on draft of final report of eggs survey**]

FSA national study on the microbiological quality and heat processing of cows' milk

49. The Committee commented on interim results from this study in 2000.[52-55] In March 2003, the FSA presented the final report to ACMSF Members.[56] This contained previously unseen results on production processes. Among points of particular interest to the Committee were that :-

- most samples tested had been of satisfactory microbiological quality although a small percentage had contained coliforms or *E. coli*. The dairy industry had endeavoured to address this through the development of a Code of Practice on Pasteurisation;

- following ACMSF advice that the long-term aim should be to eliminate *Mycobacterium avium* subsp. *paratuberculosis* (MAP) from milk, the FSA had developed a strategy for achieving this goal, in cooperation with Defra who were looking to tackle the problem of Johne's Disease in cattle;

- the FSA intended to repeat the survey, not least as a means of gauging the success of the MAP strategy.

50. Further details of the Committee's consideration of the final report of this survey can be found in the minutes of the 47th meeting.[29]

FSA UK-wide survey of *Salmonella* and *Campylobacter* contamination of fresh and frozen chicken on retail sale

51. In 2000, the FSA set itself a target to reduce *Salmonella* contamination of UK-produced retail chicken by 50% by April 2005.[57] In order to set a baseline against which progress could be measured, the Agency undertook a national survey in 2001 of fresh and frozen, whole and portioned chicken purchased at UK retail outlets. In June 2000, the FSA consulted the ACMSF on the various factors to be considered in designing the survey[58] and the ACMSF Surveillance Working Group

commented on a draft protocol in March 2001.[59] Interim survey results were reported to the ACMSF in October 2001.[60]

52. In March 2003, the FSA presented the final report to Members.[29,61] It was noted that the UK figure of 5.7% of samples positive for *Salmonella* was much lower than the levels found in previous surveys and bore out the ACMSF's view (expressed in its 1996 Report on Poultry Meat[16]) that "there was no reason in principle why the prevalence of *Salmonella* contamination in the finished raw product should not within the next few years be reduced to a single figure percentage on the basis of existing available technology". In the Committee's view, the *Campylobacter* figure (50% of UK samples positive) served to underline the ACMSF's interest in this microorganism and the need for further work to tackle it in food and food sources.

Epidemiology of Foodborne Infections Group (EFIG)

53. The Food Standards Agency briefed Members on the 14 January 2003 meeting of EFIG.[62] Information was provided on animal and human data for the first 3 quarters of 2002; on an industry-led project based on ELISA testing of meat juice for antibodies to *Salmonella*; and on a Defra-commissioned national abattoir survey of the prevalence of a range of pathogens in cattle, sheep and pigs. EFIG had also discussed the problems associated with the epidemiological data used in many microbiological risk assessments. **[DN : cover 4 December briefing]**

Defra strategy for veterinary surveillance

54. At the end of 2002, the Secretariat was approached by the FSA to obtain an urgent ACMSF view on Defra's consultation document proposing a strategy for enhancing veterinary surveillance in the UK.[63] The specific question which the ACMSF was asked to address was whether what Defra was proposing was likely to generate the kind of information necessary in assuring the microbiological safety of food and consumer protection. In view of the very tight deadline, the Secretariat first sought Members' comments in correspondence. The Chairman, with Secretariat assistance, then met with Professor Johnston and Dr O'Brien to elaborate a consensus view. A response was sent to the FSA on 21 January 2003. Among the points made in this response were that :-

- in the ACMSF's view, a strategic and coordinated approach to veterinary surveillance was, in principle, very welcome;

- however, care would be required to ensure that, in developing its strategy, Defra did not overlook the FSA's interests;

- animal health issues were predominately the focus of the strategy and insufficient attention had been given to human exposure to pathogenic microorganisms through food chain pathways;

- surveillance needed to be objective-driven; and

- the concept of a data warehouse populated from myriad disparate sources seemed very ambitious.

55. A copy of the Committee's full response is at Annex XI. The strategy, which was developed by Defra following public consultation[64] and stakeholder workshops, was launched by the Chief Veterinary Officer on 22 October 2003.[65]

Codex Alimentarius Commission

56. Following the January 2003 meeting of the Codex Committee on Food Hygiene (CCFH), the FSA briefed ACMSF Members on items of interest discussed at that meeting, and also provided more general background information about Codex.[29,66] Items of particular interest included draft guidelines for the application of a HACCP system, taking account of obstacles encountered by small and medium sized enterprises; a draft code of practice for milk and milk products; developments with regard to risk assessments for *Salmonella* in eggs and poultry, *Listeria* in ready-to-eat foods, *Campylobacter* spp. in broiler chickens, and *Vibrio* spp. in seafood; and a revised code of practice for dried infant formula. Members noted that a risk profile for *Enterobacter sakazakii* was being revised and that the UK had successfully pressed for other pathogens of concern which might be in powdered infant formula, notably *Cl. botulinum*, to be given appropriate attention.

Information papers

57. The ACMSF is routinely provided with information papers on topics which the Secretariat considers may be of interest to Members. This affords them the opportunity to identify particular issues for discussion at future meetings. Among the documents provided for information during 2003 were :-

- World Health Organisation Food Safety News ;[67]

- FSA booklet – Starting up : your first steps to a catering business;[68]

- industry guides to good hygiene practice ; bottled water guide;[69]

- Parliamentary Office of Science and Technology. Briefing note No. 193. Food poisoning ;[70]

- HACCP uptake by dairies;[71]

- joint Biotechnology and Biological Sciences Research Council (BBSRC), Defra, FSA, Natural Environment Research Council (NERC) code of practice for research;[72]

- International VTEC-STEC Club News No. 16;[73]
- opinion of the EU Scientific Committee on Food on food irradiation;[74]
- impact of antimicrobial growth promoter termination in Denmark;[735]
- detection and verification of MAP in fresh ileocolonic mucosal biopsy specimens from individuals with and without Crohn's Disease;[76]
- FSA strategy for the control of MAP in cows' milk : first progress report;[77]
- new microbiology database (ComBase) and predictive models (Growth Predictor).[78]

Chapter 3 : A Forward Look

Future work programme

58. Work will continue with the review of *Campylobacter* research and with preparation of any necessary supplement to the Committee's Second *Campylobacter* Report. Consideration will also be given to any comments received on the draft of the *Campylobacter* Report as a result of the public consultation exercise and to the need to amend the draft.

59. The Committee will monitor developments both in the UK and internationally in relation to concerns about pathogens, including *Cl. botulinum* and *Enterobacter sakazakii*, which may be present in powdered infant fomula and other foods for infants and children. Work will also be taken forward in connection with the development of food safety advice for chilled and frozen, puréed baby foods. The concern will be to ensure that these products, which may not have been heat processed sufficiently to destroy any *Cl. botulinum* spores present in the raw material, do not give rise to a consequent risk of infant botulism.

60. Members have noted that infectious intestinal disease (IID) causes a significant burden of ill health, over and above the initial event, in the medium to longer-term. The Committee will take stock of developments in relation to these longer-term *sequelae* in the light of the results of the new work being reported in the medical and scientific literature.

61. The Committee will keep itself informed, through its close links with the Food Standards Agency and the Health Protection Agency, of developing trends in relation to foodborne disease. A continuing task will be to respond promptly with advice on the food safety implications of any issues which may from time to time be referred to the Committee by the FSA. *Listeria*, including advice for pregnant women, is a possible area for future attention in the shorter-term.

62. The Committee, through its standing Surveillance Working Group, will continue to provide advice as required in connection with the Government's microbiological food surveillance programme and any other surveillance relevant to foodborne disease. A subject for early attention is likely to be egg-related surveillance and research.

Horizon scanning

63. The ACMSF recognises the benefits which flow from horizon scanning. The Committee has already identified topics which might merit detailed attention in the future,[11] and has set up 3 *Ad Hoc* Groups to look into

imported foods, changing social habits in relation to food, and newly-emerging pathogens.

Imported foods

64. The Imported Foods Group met three times in 2003, initially to scope its task and then to consider sources of useful information. Members agreed that the Group should focus on legally imported food and identified as an important area for consideration the means, if any, which exist in exporting countries for identifying the potential risks from pathogens. As part of the process of gathering information, the Group received presentations from the FSA on :-

- the role and objectives of the Agency's Imported Food Division;
- the steps being taken to improve product traceability;
- consolidation of EU food hygiene legislation;
- microbiological criteria, microbiological risk assessment, horizon scanning, and food hazard alerting arrangements for imports.

65. The Group was also briefed by :-

- Defra on veterinary checks for products of animal origin at point of entry into the UK;
- HM Customs and Excise on that Department's role in relation to imports;
- the Health Protection Agency on the perceived risks from imported foods and the exporting countries of key importance.

66. The Imported Foods Group's preliminary conclusions were that there appeared to be gaps in the controls on imports of food of non-animal origin (compared with those in place for products of animal origin); that benefits would accrue from a consistent approach to monitoring foodborne disease in countries exporting food to the UK; and that any human health risk from imported food could be more effectively managed if there was coordination of import controls across the various agencies concerned. **[DN :** The Group's final conclusions and recommendations were presented to the full Committee in December 2003[79] **Outcome of December meeting]**

Changing social habits

67. As a first step, the Group began the process of identifying those areas where changing social habits could be expected to have a significant impact on food safety. Areas identified included the growth in out-of-

home eating and the potential problems associated with an ever changing, culturally, educationally and ethnically diverse work force; the loss of domestic culinary and hygiene skills; travel abroad; the increase in numbers of elderly persons living in nursing homes and similar care establishments; and the position of people who were immuno-compromised. A list of key questions was identified and work was put in hand, with the assistance of ACMSF Members and FSA economists and statisticians, to determine whether data existed to enable questions to be answered about the importance of these factors. **[DN : Outcome of December meeting]**.

Newly-emerging pathogens

68. [DN : report on work of Professor Hunter's Group].

Annex I : Membership of the Advisory Committee on the Microbiological Safety of Food, its Working Groups and its *Ad Hoc* Groups

		ACMSF	*Campylobacter* Working Group	Surveillance Working Group
Terms of reference		To assess the risk to humans from microorganisms which are used or occur in or on food and to advise the Food Standards Agency on any matters relating to the microbiological safety of food.	To identify any important gaps and omissions in action taken to reduce *Campylobacter* in food and food sources and in the knowledge base; and to develop advice which will assist the Food Standards Agency in evolving its strategy for reducing the incidence of foodborne *Campylobacter* infection in humans.	To facilitate the provision of ACMSF advice to government in connection with its microbiological food surveillance programme and other surveillance relevant to foodborne disease, particularly in relation to the design, methodology, sampling and statistical aspects; and to report back regularly to the ACMSF.
Chairman				
Professor D L Georgala	Former independent scientific consultant. Retired Director of the Institute of Food Research	✓	✓[1]	
Members				
Dr G R Andrews	Head of Technical Services, Northern Foods plc	✓		
Dr D W G Brown	Director, Enteric Respiratory and Neurological Virus Laboratory, Central Public Health Laboratory, Health Protection Agency	✓		
Ms S Davies	Principal Policy Adviser, Consumers' Association	✓	✓	

[1] Professor Georgala also chairs the *Campylobacter* Working Group.

		ACMSF	*Campylobacter* Working Group	Surveillance Working Group
Professor M J Gasson	Head of Food Safety Science Division, Institute of Food Research	✓	✓	✓
Dr K M Hadley	Senior Lecturer, Department of Immunology and Bacteriology, University of Glasgow. Honorary Consultant in Clinical Microbiology, North Glasgow University Hospitals NHS Trust, Western Infirmary, Glasgow	✓		
Professor T J Humphrey	Professor of Food Safety, University of Bristol	✓	✓	✓[2]
Professor P R Hunter	Professor of Health Protection, University of East Anglia	✓	✓	
Mrs P Jefford[3]	Head of Environmental and Public Health Services, Gravesham Borough Council	✓		✓
Professor A M Johnston	Professor of Veterinary Public Health, Royal Veterinary College, University of London	✓	✓	
Mr A Kyriakides	Head of Product Safety, Sainsbury's Supermarkets Ltd	✓	✓	✓
Ms E Lewis	Computer consultant. Consumer representative	✓	✓	

[2] Professor Humphrey chairs the Surveillance Working Group.
[3] Until 31 March 2003

		ACMSF	*Campylobacter* Working Group	Surveillance Working Group
Professor P Mensah[3]	Head of Bacteriology Unit, Noguchi Memorial Institute for Medical Research, University of Ghana. Visiting E P Abraham Research Fellow, St Hilda's College, Oxford	✓		
Mr P Mepham[4]	Environmental Health Manager (Policy and Support), Leeds City Council	✓		
Dr S J O'Brien	Head of Gastrointestinal Diseases Division, Communicable Disease Surveillance Centre, Health Protection Agency	✓	✓	✓
Mr B J Peirce	Caterer	✓	✓	
Mr D J T Piccaver	Farmer	✓		
Dr Q D Sandifer	Director of Public Health, Velindre NHS Trust	✓		
Dr T D Wyatt	Consultant Clinical Scientist, Mater Hospital Trust, Belfast	✓		
Mr M Attenborough	Technical Director, Meat and Livestock Commission		✓	
Dr E Berndtson[5]	Svenska Klackeribolaget AB, Sweden. *Campylobacter* consultant to the Swedish Poultry Association		✓	

[4] From 1 April 2003
[5] Until December 2002

		ACMSF	*Campylobacter* Working Group	Surveillance Working Group
Assessors				
Dr L Doherty	Northern Ireland Department of Health, Social Services and Public Safety	✓		
Mr P J R Gayford	Department for Environment, Food and Rural Affairs	✓	✓	
Dr J Hilton	Food Standards Agency	✓	✓	
Dr G McIlroy	Northern Ireland Department of Agriculture and Rural Development	✓		
Dr S Neill	Northern Ireland Department of Agriculture and Rural Development		✓	
Dr S Pryde	Food Standards Agency (Scotland)	✓		
Dr R Skinner[3]	Food Standards Agency	✓		
Mr S Wearne[6]	Food Standards Agency (Wales)	✓		
Mrs J Whinney[7]	Food Standards Agency (Wales)	✓		
Secretariat				
Medical Secretary Dr J Hilton[3]	Food Standards Agency	✓		
Administrative Secretary Mr C R Mylchreest	Food Standards Agency	✓	✓	✓
Scientific Secretary Dr P E Cook[4]	Food Standards Agency	✓		

[6] From 21 July 2003
[7] Until 18 July 2003

		ACMSF	*Campylobacter* Working Group	Surveillance Working Group
Administrative Secretariat				
Mrs E A Stretton	Food Standards Agency	✓	✓	✓
Miss C L Wilkes	Food Standards Agency	✓	✓	✓
Mr S Rahman	Food Standards Agency			
Scientific Secretariat				
Ms G V Hoad	Food Standards Agency			✓

	Ad Hoc Group on :-						
		Sewage sludge	**Risk assessment**	**Imported foods**	**Newly-emerging pathogens**	**Changing social habits (including overseas travel) in relation to food**	**Infant botulism**
Terms of reference		To assist with the peer review of a microbiological risk assessment to determine whether the application of sewage sludge to agricultural land poses a significant incremental risk to foods produced in/on such land.[8]	To consider whether the ACMSF would be helped by following a formal structure for the process of risk assessment; if so, to recommend an appropriate structure which might be adopted; and to report back with recommendations to the ACMSF.	To assemble information on the current situation on these topics in order to decide whether there is a potential problem in relation to the microbiological safety of food; and to recommend to the ACMSF whether the Committee needs to undertake further action.			To consider the potential human health risk associated with the consumption of chilled or frozen, puréed baby foods, particularly in relation to *Clostridium botulinum* and infant botulism, to inform the development of ACMSF advice to the Food Standards Agency.
Membership							
Professor D L Georgala			✓[9]				
Dr G R Andrews		✓				✓[9]	

[8] This Group, originally set up to offer advice in connection with the disposal of biosolids to agricultural land, subsequently also undertook work on the agricultural disposal of catering waste containing meat, and of manure and abattoir waste.
[9] Chairs of *Ad Hoc* Groups.

	***Ad Hoc* Group on :-**						
		Sewage sludge	**Risk assessment**	**Imported foods**	**Newly-emerging pathogens**	**Changing social habits (including overseas travel) in relation to food**	**Infant botulism**
Dr D W G Brown		✓	✓		✓		
Ms S Davies			✓	✓[9]			
Dr K M Hadley					✓		✓
Professor T J Humphrey						✓	
Professor P R Hunter		✓	✓		✓[9]		
Mrs P Jefford						✓	
Professor A M Johnston				✓	✓		
Mr A Kyriakides		✓		✓	✓		✓
Ms E Lewis							✓
Mr P Mepham							✓
Dr S J O'Brien					✓		✓[9]
Mr B J Peirce						✓	
Mr D J T Piccaver		✓		✓			
Dr Q D Sandifer		✓	✓				
Dr T D Wyatt		✓[9]	✓				
Professor M W Peck	Head, Food Safety Microbiology Section, Institute of Food Research						✓

		Ad Hoc Group on :-					
		Sewage sludge	**Risk assessment**	**Imported foods**	**Newly-emerging pathogens**	**Changing social habits (including overseas travel) in relation to food**	**Infant botulism**
Dr M Stringer	Director, Campden and Chorleywood Food Research Association Technology Ltd.						✓
Assessors							
Dr J Hilton		✓					✓
Secretariat							
Administrative Secretary Mr C R Mylchreest		✓	✓		✓		✓
Administrative Secretariat							
Mrs E A Stretton		✓	✓	✓	✓	✓	✓
Miss C L Wilkes		✓		✓		✓	
Scientific Secretariat							
Dr P E Cook			✓				
Miss O Doyle							✓
Dr S Molnar		✓					

Annex II : Advisory Committee on the Microbiological Safety of Food Register of Members' Interests

Member	Personal interests		Non-personal interests	
	Name of company	**Nature of interest**	**Name of company**	**Nature of interest**
Professor D L Georgala	Unilever plc	Shareholder	None	
Dr G R Andrews	Northern Foods plc Chilled Foods Association Environment Agency Sustainable Organic Resources Partnership	Employee and shareholder Chairman Member	None	
Dr D W G Brown	None		Various	HPA industry-funded research and laboratory investigations
Ms S Davies	None[10]		None	
Professor M J Gasson	Danisco Venture	Member of scientific forum	Various	IFR Food Safety Science Division industry-funded research projects
Dr K M Hadley	None		None	
Professor T J Humphrey	J Sainsbury plc British Egg Industry Council	*Ad hoc* consultancy work *Ad hoc* consultancy work	Various	Funding for research projects
Professor P R Hunter	Buxton Mineral Water Company Zenith International Manchester Port Health Authority	Consultant Consultant Port Medical Officer	Drinking Water Inspectorate and United Utilities plc	*Cryptosporidium* research
Professor A M Johnston	Humane Slaughter Association Tesco Stores Ltd	Veterinary adviser Consultant	Various	Independent advice and research involving industry, on behalf of the Royal Veterinary College
Mr A Kyriakides	J Sainsbury plc	Employee and shareholder	None	
Ms E Lewis	None		None	
Dr S J O'Brien	None		None	

[10] Ms Davies has no interests of her own to declare but has declared shares held by her father in Marks and Spencer.

Member	Personal interests		Non-personal interests	
	Name of company	**Nature of interest**	**Name of company**	**Nature of interest**
Mr B J Peirce	None		None	
Mr D J T Piccaver	J E Piccaver & Co (Gedney Marsh) Piccaver Farms Ltd QV Foods Ltd Lingarden Ltd Lingarden Flowers Ltd Horticulture Research International Holbeach Marsh Cooperative Ltd	Managing Director Managing Director Non Executive Director Non Executive Director Non Executive Director Non Executive Director Chairman. Non Executive Director	British Potato Council	Council member
Dr Q D Sandifer	None		None	
Dr T D Wyatt	None		None	
***Campylobacter* Working Group**				
Mr M Attenborough	Meat and Livestock Commission	Employee	None	

Annex III : ACMSF contribution to the second report to the Food Standards Agency on implementation of the recommendations of the Report on the Review of Scientific Committees[26]

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

No	Recommendation	Action / responsibility identified	Complete	In Progress	For future	Current position / action towards implementation
	Role of the secretariat					
3	The Agency should continually review the efficacy of the Secretariats, in consultation with the Committee Chairs (para 20)	Head, FSA Microbiological Safety Division (HoD/MSD)		✓		HoD/MSD will write to ACMSF Chair requesting his views on the support provided by the Secretariat.
6	The possibility of learned societies and Research Councils helping to identify individuals with particular expertise should be explored further with them (para 31)	Secretariat to contact the societies and Councils when advertising for members		✓		Secretariat is taking this forward for the current appointments round.
8	The Agency should specify clearly what is expected of all members, focussing particularly on the role of non-specialist members (para 34)	Secretariat (with advice from FSA Consumer Branch)		✓		Secretariat is taking this forward for the current appointments round.
	Training and Support for members					
10	The Agency should provide induction for new committee members and this should include training in consumer issues for scientific members, and possibly facilitated sessions in effective committee functioning (paras 37, 38 & 40)	Secretariat (with advice from FSA Consumer Branch)		✓		Secretariat is taking this forward for the current appointments round based on a training course developed by FSA Consumer Branch.
12	Training in media skills should be offered to Chairs and certain other committee members (para 39)	Secretariat (with support from FSA Communications Directorate)		✓		Training will be arranged via FSA Communications Directorate on an *ad hoc* basis.
13	The Agency should obtain feedback from committee members on the adequacy of the support and training they receive and should take the necessary action to address any deficiencies (para 41)	HoD/MSD		✓		HoD/MSD will write to committee members asking them for their evaluation on training and support received – this recommendation is linked in with Recommendation 3 above.
	Remuneration of members					
18	*The Agency should make employers aware of the valuable contributions made by committee members (para 51)*	Secretariat to draft letters for FSA Chairman to write to relevant employers when appointment / re-appointments are made *[and when members reach the end of their period of office]*	✓			Now part of standard appointments procedures
	Indemnities					
20	*A statements of indemnity should be drawn up and kept up to date for committees, their sub-groups and other* ad hoc *expert groups (para 55)*	Secretariat to ensure indemnities are kept up to date		✓		FSA Personnel Division is developing a standard FSA statement of indemnity

No	Recommendation	Action / responsibility identified	Complete	In Progress	For future	Current position / action towards implementation
	THE COMMITTEES' RESPONSIBILITIES – CONDUCT OF COMMITTEE BUSINESS					
	Openness					
22	Committees should follow standard practices in making their documents available, by publishing agendas and committee papers in advance of each meeting, and minutes and/or summary reports afterwards (para 63)	Secretariat to implement, as appropriate	✓			This is now done routinely.
26	All committees should move to a position where they conduct as much of their business as possible in open sessions (para 66)	Secretariat to implement, as appropriate	✓			All ACMSF quarterly meetings are now held in public.
	Handling conflicts of interest					
33	Interests should be declared by prospective committee members to enable a sensible balance to be achieved on the committee at the time that appointments are made (para 83)	**Secretariat to obtain information and use it during appointment procedure**		✓		ACMSF application form is being re-designed with a new section on declarations of interest.
34	Chairs of the Agency's advisory committees should not be employed by, or receive personal remuneration from, industrial organisations or pressure groups during their term of appointment (para 85)	**Secretariat to apply this principle during appointment procedure and to monitor interests thereafter**	✓			The current ACMSF Chair has terminated his industrial consultancy work. When advertising for new chair, will draw attention to this requirement in both the advert and on the application form
	Role of the chair and members					
38	At the end of their first year of membership, members should be asked to prepare a report that reflects how they perceive their role within, and contribution towards, the work of the committee (para 91)	**Secretariat to arrange meetings between members and chairs**		✓		This will be introduced in March 2004 – the earliest date possible based on the pattern of appointments.
	Specialist members					
39	Each committee should have access to advice on quantitative analysis and modelling (para 94)	**Secretariat, with advice from FSA Economics and Analytical Division (EAD)**	✓			We are currently using EAD.
49	The Agency, in consultation with committees, should develop a formal approach to risk assessment (para 105)	**Secretariat to take forward in the light of the Agency's risk statement**		✓		Progress will be made in 2003.
	Research					
50	The Agency's Advisory Committee on Research (ACR) should monitor whether committee research recommendations are being suitably implemented by the Agency (para 107)	**Secretariat or MSD to provide information to ACR Secretariat at annual intervals**			✓	Await FSA decision on what is required of ACMSF

3 March 2003

Annex IV : ACMSF contribution to the third report to the Food Standards Agency on implementation of the recommendations of the Report on the Review of Scientific Committees[26]

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

No	Recommendation	Action / responsibility identified	Complete	In Progress	For future	Current position / action towards implementation
	Role of the secretariat					
3	the Agency should continually review the efficacy of the Secretariats, in consultation with the Committee Chairs (para 20)	HoD	✓			MSD HoD obtained the views of ACMSF Chair in 2003 on the support provided by the Secretariat.. Performance has been reviewed in light of this. The exercise will be repeated routinely in future years.
6	the possibility of learned societies and Research Councils helping to identify individuals with particular expertise should be explored further with them (para 31)	Secretariats to contact the societies and Councils when advertising for members	✓			Secretariat has taken this forward as part of the 2004 appointments round. An assessment of how useful this has been will be made once applications have been received and considered.
8	the Agency should specify clearly what is expected of all members, focussing particularly on the role of non-specialist members (para 34)	Secretariats (with advice from Consumer Branch)	✓			Appropriate guidance appears in the Information Packs prepared for prospective new members. The ACMSF's code of practice, available to all members, also provides guidance. Further guidance is provided on an *ad hoc* basis through the Chair and Secretariat.

No	Recommendation	Action / responsibility identified	Complete	In Progress	For future	Current position / action towards implementation
	Training and Support for members					
10	the Agency should provide induction for new committee members and this should include training in consumer issues for scientific members, and possibly facilitated sessions in effective committee functioning (paras 37, 38 & 40)	Secretariats (with advice from Consumer Branch)		✓		The Secretariat hopes to take this forward for the current appointments round based on a training course developed by FSA's Consumer Branch.
12	training in media skills should be offered to Chairs and certain other committee members (para 39)	Secretariats (with support from COMS)	✓			Training will be arranged via COMS on an *ad hoc* basis. The current Chairman, who is the Committee's spokesman, already has the necessary media training, experience and skills. The need for further media skills training will next be assessed following the 2004 appointments round, when a new Chair will be appointed.
13	the Agency should obtain feedback from committee members on the adequacy of the support and training they receive and should take the necessary action to address any deficiencies (para 41)	HoD	✓			MSD HoD has written to ACMSF members asking them for their evaluation on training and support received – this recommendation is linked in with Recommendation 3 above. This will be repeated routinely in future years. Performance will be reviewed as soon as all responses from the current exercise are in and have been evaluated.

No	Recommendation	Action / responsibility identified	Complete	In Progress	For future	Current position / action towards implementation
	Indemnities					
20	statements of indemnity should be drawn up and kept up to date for committees, their sub-groups and other ad hoc expert groups (para 55)	Secretariats to ensure indemnities are kept up to date		✓		Once standard statement of indemnity has been received from FSA, the Secretariat will send copies to ACMSF members..
	THE COMMITTEES' RESPONSIBILITIES – CONDUCT OF COMMITTEE BUSINESS					
	Openness					
	Handling conflicts of interest					
33	interests should be declared by prospective committee members to enable a sensible balance to be achieved on the committee at the time that appointments are made (para 83)	Secretariats to obtain information and use it during appointment procedure	✓			ACMSF application form has being re-designed with a new section on declarations of interest.

No	Recommendation	Action / responsibility identified	Complete	In Progress	For future	Current position / action towards implementation
	Role of the chair and members					
38	at the end of their first year of membership, members should be asked to prepare a report that reflects how they perceive their role within, and contribution towards, the work of the committee (para 91)	Secretariats to arrange meetings between members and chairs		✓		This will be introduced in March 2004 – the earliest date possible based on the pattern of ACMSF appointments - on the basis of the standard self-assessment form being designed by the FSA.
	Specialist members					
49	the Agency, in consultation with committees, should develop a formal approach to risk assessment (para 105)	Secretariat to take forward in the light of the Agency's risk statement?		✓		This task features in the ACMSF's forward work programme. It is hoped that progress will be made in 2003.
	Research					
50	the Agency's Advisory Committee on Research should monitor whether committee research recommendations are being suitably implemented by the Agency (para 107)	Secretariats or Policy Divisions to provide information to ACR Secretariat at [annual?] intervals			✓	Await FSA decision on what is required of ACMSF.

October 2003

Annex V

Advisory Committee on the Microbiological Safety of Food

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E. mail : colin.mylchreest@foodstandards.gsi.gov.uk

Dr J R Bell
Acting Chief Executive
Food Standards Agency
Aviation House
125 Kingsway
London
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24 January 2003

ACMSF *CAMPYLOBACTER* WORKING GROUP

1. In connection with the efforts being made to tackle *Campylobacter*, especially in chickens, I thought it appropriate at this time to let you have the ACMSF's views on the situation in Scandinavia.

2. Three members of the *Campylobacter* Working Group (Tom Humphrey, Mac Johnston and Alec Kyriakides) made a short visit to Denmark and Norway in the week beginning 17 November 2002. We wanted the group to investigate whether the incidence of *Campylobacter* in commercially-reared chickens really was lower in these countries. We also asked the group to look at how the Danes and Norwegians were tackling *Campylobacter* in chickens, and to see whether there were any lessons which could be applied in a UK context. Jonathan Back (who is the *Campylobacter* Working Group's Scientific Secretary) also participated in the visit so is well placed to use the information gathered in developing the Agency's *Campylobacter* strategy.

3. Because, in setting up the Campylobacter Working Group, we had co-opted Dr Eva Berndtson, a *Campylobacter* consultant to the Swedish Poultry Association, we had not planned a visit to Sweden, the other major player in Scandinavia. Unfortunately, Dr Berndtson has recently had to resign from the Working Group because of pressure of other work. We nevertheless hope that she will be able to provide us with useful material on the situation in Sweden and we are currently pursuing this with her.

Denmark

4. There were 4,620 recorded cases of human *Campylobacter* infection in Denmark in 2001, although the true figure is believed to be much higher, and similar to the UK incidence. There is a much more pronounced summer peak of infection than in the UK. The consumption of poultry meat is a significant risk factor and the Danes have carried out a risk assessment which shows that, where the number of campylobacters on chicken carcasses is reduced by freezing or other means, the risk of human infection is also reduced.

5. All poultry flocks in Denmark are subject to surveillance to determine their *Campylobacter* status. Standard protocols are used throughout Denmark, Norway and Sweden. Control of *Campylobacter* in broiler flocks is closer to the current UK position (and less developed than in Norway).

6. The Danes are sceptical about the possibilities for on-farm control. Very hot Danish summers present particular difficulties. Some broiler houses are left open for welfare reasons, and this undermines biosecurity. Danish action against *Campylobacter* is thus more focussed on intervention during or after processing. *Campylobacter* is thought to be particularly sensitive to freezing and work is in hand on the effects of freezing at –18°C for 10 days. The possible use of heat treatment at 75°C for 15 seconds is also being investigated.

7. The group visited a typical, broiler farm. There are broiler farms in the UK of a comparable standard. There were 7 houses each containing 31,000 birds. The farmer operated an all in/all out system. The farm was in good order and the buildings, though over 30 years old, were in good condition. There were 50 metres between houses and the site was coated with coarse gravel which was routinely sprayed for weeds. Each house had a 40 cm high, physical hygiene barrier. A wash hand basin was located away from the barrier and the house was not entered via an enclosed ante-room.

8. The group also visited a processing plant similar to most in the UK. The company does, however, market *Campylobacter*-free chickens, sold at a premium. The requirement of Danish legislation is that “the flock shall be controlled to give a 95% guarantee that less than 1% of birds are infected with *Campylobacter*.” 300 samples per flock must be tested. The company has been involved in the development of a PCR method to provide information on *Campylobacter* status within 5 hours.

9. Overall, the group concluded that the current situation in the UK was close to that in Denmark. However, the Danes seemed to derive a real benefit, in terms of the quality of data produced, from a closer integration of the human and animal health surveillance systems. It was also apparent that the regular testing of poultry flocks yielded important information about

Campylobacter prevalence and seasonality, as well as about geographical differences in colonisation rates.

Norway

10. There has been a marked increase in the number of human cases of *Campylobacter* in Norway since 1997, the annual incidence being around 100 cases per 100,000 of the population. There is an approximate 50:50 split between numbers of cases acquired in Norway and those acquired abroad. There is a marked peak in human infections, approximately 75% of cases occurring in July-September. It is thought that many more cases are caused by water in Norway than in the UK. The consumption of poultry purchased raw is among the principal risk factors although, unfortunately, authoritative data on the level of chicken-associated human cases prior to the introduction of broiler intervention arrangements (see paragraph 11) are not available.

11. Given the rising incidence of human campylobacteriosis, and the association with poultry meat, Norway has introduced an Action Plan Against *Campylobacter* in Broilers. This provides for the surveillance of live animals, animals at slaughter, and poultry meat products. Ten composite faecal samples are collected on farms 4-8 days prior to slaughter. If these samples are *Campylobacter*-positive, the birds are slaughtered at the end of the day. Carcasses are either heat-treated, or frozen for 5 weeks. There is also follow up action on *Campylobacter*-positive farms. This comprises standardised consultations and the introduction of measures to reduce flock infection, namely the disinfection of drinking water and the introduction of hygiene barriers. There is also a farm-based research programme to identify risk factors for *Campylobacter* infection in flocks.

12. The Norwegian poultry industry is only about a tenth the size of the UK industry. Most birds are killed earlier than in the UK (at 32-33 days). In 1991, 18% of broiler flocks (sampled on-farm) were *Campylobacter*-positive. This had fallen to 4% in 1998. The most recent surveillance (2001-2002) produced an on-farm incidence figure of 7.6%. As with human infection, there is a marked seasonality, with around 90% of positive flocks being identified in the summer months.

13. The group visited a typical Norwegian broiler farm, comprising 1 house of 11,000 birds. Access to the house was via an ante-room which had three rooms, each with a door, coming off it. One room served as an office and had a window through which the flock could be observed. Access to the flock was through a door on the other side of the ante-room in which a physical hygiene barrier had been placed. There were dedicated overalls and footwear on the bird side of the barrier. The room also contained a wash hand basin which the farmer used before putting on protective clothing and footwear. **These simple interventions were sufficient to protect birds from *Campylobacter* in spring, autumn and winter and, to some extent, in summer.**

14. The group also visited a poultry processing plant which was typical of most in Europe and employed no devices which were not already in use in the UK. The plant was smaller, and tighter for space than in the UK. Water usage was high. Unlike in the UK, birds were spray-chilled with cold water. Although Norway does not sell *Campylobacter*-free" poultry at retail, the goal is to reduce the level of Campylobacter in broiler chickens at slaughter to as close to zero as possible.

15. The prevalence of *Campylobacter* contamination in fresh poultry products ranged between 4 and 10% over the period 1995-1998. Further fresh product surveys were carried out in 2001 (at production facilities) and 2002 (in shops). Just over 1,000 samples were taken in each survey. *Campylobacter* prevalence was <10% in 2001 and around 2% in 2002.

16. The group felt that Norway provided some useful indications of what could be achieved by targeted on-farm intervention. Hygiene barriers seemed a cheap and effective counter-measure which the UK industry should be pressed to adopt as a matter of urgency. The rather different epidemiology of infection among broilers in Norway, compared with the UK, perhaps indicates a particular source of infection in the summer and the possible involvement of contaminated air in its transmission. The potential for airborne transmission on farms may need further investigation. This could require some quite detailed research.

Overall conclusions from Denmark/Norway visits

17. Our overall conclusions drawn from the group's visits are that :-

- nothing the group saw in either Denmark or Norway served to undermine the advice I sent you on 26 September 2002 about the feasibility of the on-farm control of *Campylobacter* in chickens;

- indeed, the Norwegian experience especially offered further encouragement that on-farm control is achievable on a commercial scale;

- Denmark appears to have established a premium market for *Campylobacter*-free chicken;

- Norway has succeeded in getting the contamination rate for fresh chicken products in retail outlets down below 10%;

- the UK broiler industry still has some catching up to do but is, for the most part, on the right track;

- however, the UK industry needs to be encouraged to maintain its best endeavours;

- opportunities for collaboration between researchers here and those in Denmark and Norway were identified;

- we need to give some further thought to the efficacy and wider implications of heat treating or freezing *Campylobacter*-positive carcasses.

Sweden

18. As noted earlier, we are actively seeking information about the situation in Sweden which we can incorporate into our final Report, along with a more detailed summary of the Denmark/Norway visits, as part of a Scandinavian overview. In the meantime, if what we obtain about Sweden provides any new insights into how best to tackle *Campylobacter*, I will let you know.

19. I am copying this letter to Andrew Wadge and Judith Hilton.

Yours sincerely

DOUGLAS L GEORGALA

Annex VI

[DN : Not yet drafted : this annex will be the Chairman's letter to the Chairman of the Food Standards Agency, enclosing a pre-consultation copy of the ACMSF's Second Report on *Campylobacter*]

Annex VII

Advisory Committee on the Microbiological Safety of Food

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12 May 2003

Dear Alan

MICROBIOLOGICAL RISK ASSESSMENT : PATHOGENS IN BIOSOLIDS

1. Thank you for your e-mail of 24 March enclosing a draft final report of the microbiological risk assessment for pathogens in biosolids. Please accept this letter as a formal response on behalf of the ACMSF.

2. ACMSF members had a number of observations and suggestions on the draft report. These are detailed in Annex A and I hope you will feel able to take them on board.

3. You asked in your e-mail whether the ACMSF would be prepared to provide a statement which could be included in the report. A suggested form of words, which I hope meets your needs, is at Annex B.

4. If you need anything further, please do not hesitate to get in touch.

Yours sincerely

COLIN MYLCHREEST
Administrative Secretary

ANNEX A

ACMSF COMMENTS ON UKWIR REPORT ON PATHOGENS IN BIOSOLIDS : MICROBIOLOGICAL RISK ASSESSMENT

Executive summary : second page ; paragraph 3 (beginning "Estimated annual numbers of infections……")

It is proposed that, in the final 2 sentences of this paragraph, the references to numbers of infections from pathogens other than *Cryptosporidium* and those from *Cryptosporidium* should be transposed. Thus, the final 2 sentences of this paragraph should be replaced by the following "The annual numbers of infections from conventionally-treated sludges has been estimated on the basis of linear decay over the 12 month harvest interval of the Safe Sludge Matrix. The highest risk is for *Cryptosporidium*, the model estimating one infection every 45 years on average in the UK. For all other pathogens studied, the numbers of infections in the UK annually are estimated at less than 1 every 10 million years."

Main report : page 4, section 3.1, indent 2

Should read "To model the pathways……".

Main report : page 5, section 3.3, paragraph 3 (beginning " The model in Figure 3.2……")

This paragraph refers to Figure 3.2 assuming a 2-log removal by conventional treatment. However, Figure 3.2 (on page 6) shows a 99.9943 (>4-log) reduction.

Main report : page 6, Figure 3.2

This figure indicates the decay of salmonellas in sludge after 5 weeks. However, the decay time was extended to 6 weeks.

Main report : page 9, Table 4.2

The number of replicates shown in the table are very low (1 to 3). Does this represent another level of uncertainty ? Has it been factored into the risk assessment ?

Dose response curves

These are based on healthy adult studies (or, in the case of *Listeria* for example, on an animal model). This clearly is not entirely representative, nor does it reflect the worst case, but presumably reflects currently available data.

ANNEX B

ACMSF STATEMENT FOR INCLUSION IN UKWIR REPORT ON PATHOGENS IN BIOSOLIDS : MICROBIOLOGICAL RISK ASSESSMENT

The use of human and animal wastes on land represents a potential risk in relation to the spread of microbiological hazards. In reviewing this risk assessment, the Advisory Committee on the Microbiological Safety of Food (ACMSF) is satisfied that the researchers have used the best available current information and approaches to estimating the potential risk to consumers associated with the use of treated human sewage sludge on agricultural land for the production of food crops.

Data used for the risk assessment are lacking in many areas, including those on the survival of potential pathogens and the dose-response curves, and significant sources of error may well be contained in the final estimate of risk. These errors could equally decrease or increase the calculated risk. However, the ACMSF believes that the risk assessment is sufficiently conservative that any additional risk would have no material impact on public health.

Notwithstanding the fact that some of the data are limited, the conclusion that properly treated and applied sewage sludge represents a minimal food safety risk is supported by the ACMSF.

The ACMSF reiterates the importance of complying with the controls detailed in the Safe Sludge Matrix and statutory regulations.

The apparent risk associated with the application of sewage sludge to agricultural land is, in the view of the ACMSF, likely to be significantly less than that associated with the application of animal and industrial wastes to agricultural land, and it is recommended that similar risk assessments are conducted in these areas, to inform risk management decisions. In this connection, the Committee welcomes the risk assessment which has recently been performed in relation to the spreading of animal manure and abattoir waste on agricultural land.

The ACMSF also recommends that further research should be conducted to fill gaps in the risk assessment, particularly in relation to survival of pathogens on land for extended periods and the operational efficiency of treatment plants, as both of these factors have a significant effect on the estimate of risk associated with the agricultural use of sewage sludge.

Annex VIII

Advisory Committee on the Microbiological Safety of Food

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Ms Geraldine Hoad
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8 July 2003

Dear Geraldine

RISK ASSESSMENT : USE OF COMPOSTING AND BIOGAS TREATMENT TO DISPOSE OF CATERING WASTE CONTAINING MEAT

1. You asked me in April to arrange for the ACMSF to give its views on this risk assessment. Following preliminary consideration by the *Ad Hoc* Group on Sewage Sludge, the full Committee considered the risk assessment on 26 June and endorsed the *Ad Hoc* Group's views. I am therefore writing to convey the Committee's comments.

2. The ACMSF regards as sound the approach adopted for the risk assessment. The Committee also regards as acceptable the conclusion drawn that, if the conditions specified for composting and biogas treatment are complied with, then the risks to human health either from root crops grown on land to which compost or biogas product has been applied, or through the ingestion of compost by gardeners, are very low.

3. However, the Committee has a number of detailed observations which it recommends should be drawn to the attention of Defra, namely :-

- no value is included for die off of pathogens after application of catering waste to agricultural land, although values are given for the decay of pathogens in sewage sludge-treated soil (section 4.3). This should be assessed;

- there should be an event tree for each pathogen;

- a two barrier composting system is recommended for the meat fraction for each composting barrier (section 25). It is proposed that the catering waste should reach a temperature of 60°C for 2 days during composting, with the composting process being continued for at least 14 days. The important factor is the microbial load at the end of composting and there should be no barrier to shorter holding times where these are seen to achieve desired levels of pathogen reduction. A preferable approach might therefore be to state that other composting processes would be regarded as acceptable provided equivalent efficacy against the hazards detailed in the risk assessment could be demonstrated. This would provide opportunities for the development of alternative approaches and would be consistent with the approach adopted in the Safe Sludge Matrix and draft sewage sludge regulations;

- however, the heat treatment assumption used for the recommended composting process (60°C for 2 days) gives a worst case centre temperature in a particle of 40cm diameter of 56°C. This is said to be sufficient to give the appropriate destruction in respect of FMD-infected pig meat (ie. a bone-in leg of pork), and the assumption is made that 60°C for 2 days will also be sufficient to deactivate other pathogens present in meat tissue. It needs to be considered whether this holds true for, eg. parasites (which occur in pork tissue) or for invasive *Salmonella* strains. The same question arises in relation to the biogas assumption (5 cm sphere to reach 56°C in a biogas treatment plant held at 57°C for 5 hours);

- the risk assessment, while comprehensive, is restricted to conventional pathogens. Consideration needs to be given to possible new issues which might arise as a consequence of new disposal practices. For example, could application of composted animal tissue to agricultural land provide a human exposure pathway for an opportunistic pathogen or for other toxigenic microorganisms such as fungi, *Staphylococcus aureus* or *Clostridium perfringens*, all of which will occur on meat and some of which can produce heat-stable toxins ?;

- no assessment has been made for the risks from tapeworm (Taenia), an obvious hazard in relation to beef and pork, although it is recognised that properly-applied statutory meat inspection procedures should provide a safeguard;

- the risk assessment for *Clostridium botulinum* (section 22) appears to be based on bacon, but seems not to have been extrapolated to pork and

other meats where the organism is likely to be equally prevalent. Indeed, the growth of the organism in bacon is likely to be inhibited by nitrite. This may not be the case for other meats which, in consequence, may present a greater risk and could substantially increase the calculated risk of infant botulism;

- no post-application restrictions, aimed at further reducing the risk of transmission through food chain exposure pathways, are applied to crops grown where catering waste has been spread. Post-application restrictions are an integral part of sewage sludge controls and, given several unknowns in the catering waste risk assessment, Defra should consider introducing this further level of protection. Consideration should, for example, be given to introducing a requirement for sub-surface injection/incorporation of the waste. In addition, Defra should consider, as a further safeguard, the option of precluding use of catering waste on ready-to-eat crops, or introducing a longer restriction between application and harvest;

- the risk assessment covers catering and consumer raw meat waste but does not include raw meat waste from other sources (eg. raw meat waste from retail outlets such as butchers and supermarkets). This clearly needs to be covered if Defra intends to extend the regulations to allow raw meat from these additional sources to be recycled to agricultural land;

- the definition of “animal” in the Animal By-Products Order includes “fish, reptiles and crustacea”. “Fish” also features in the description of catering waste in the Order. However, fish and shellfish do not feature in the risk assessment. Defra should be asked to clarify its intentions regarding the disposal of catering waste comprising or containing such material;

against a background of farmers developing composting businesses, it seems impractical to expect that raw catering waste material will not be kept on livestock farms;

equally, it will be very difficult to prevent birds and small mammals gaining access to the raw material.

4. The Committee’s principal concern relates to the question of process by-pass. It is estimated in the risk assessment that 1% by-pass would result in a 100-fold reduction in the effectiveness of the treatment process. The Committee therefore stresses the importance of eliminating any by-pass of the composting/biogas process.

Yours sincerely

COLIN MYLCHREEST
Administrative Secretary

cmar0315

Annex IX

Advisory Committee on the Microbiological Safety of Food

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Dr Sonia Molnar
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8 July 2003

Dear Sonia

ASSESSMENT OF RISKS TO FOOD SAFETY ASSOCIATED WITH SPREADING ANIMAL MANURE AND ABATTOIR WASTE ON AGRICULTURAL LAND

1. On 30 April, you asked me to arrange for the ACMSF to peer review this risk assessment. Following preliminary consideration by the *Ad Hoc* Group on Sewage Sludge, the full Committee considered the risk assessment on 26 June and endorsed the *Ad Hoc* Group's views. I am therefore writing to convey the ACMSF's comments.

2. The ACMSF regards the report of the risk assessment as well structured and well presented, and agrees that the approach taken by the contractor is sound, given the available data. The Committee would, however, offer the following observations :-

   - given the fact that significant data gaps exist, the report would benefit from the authors identifying more clearly those gaps where it is considered crucial to obtain the missing information, and those where doing so would be likely to add little to the risk assessment;

- the contractor points to the difficulties caused by the lack of quantitative data on pathogen die-off on land and under different soil and environmental conditions. This potentially results in a massive variability in the quantitative estimate of crop contamination. For example, there is a lack of data to support the assumptions of a 0.1-1 log die-off of pathogens in slurry and farmyard manure stored in animal housing (Table 3.2). Likewise, only limited data exist to support the assumption that pathogens will die off when stored in slurry pits (section 3.2.2). A T90 of 1.5 days for *Listeria* in farmyard manure seems open to doubt when, for other vegetative bacterial pathogens, the T90 ranges from 10-20 days (especially given the fact that the T90 for *Listeria* in cattle slurry is nearly twice as long as for these other pathogens). In order to make the risk assessment more robust, further research is therefore needed on pathogen die-off in animal wastes and land under different conditions;

- the estimate of *Listeria* incidence in sheep farmyard manure (Table 3.1) seems low. It seems doubtful that it would so much lower than, eg., for cattle or chickens;

- at the time the ACMSF considered the risk assessment for pathogens in biosolids, there was much debate about extrapolating survival of pathogens in soil, given the lack of data. Extrapolation to 6 weeks (reflecting the shortest time feasible to produce a ready-to-eat crop (lettuce) in the open field) was eventually agreed as an acceptable approach. However, in the manure and abattoir waste risk assessment, the contractor has extrapolated up to 6 months on land. Is this supported by the original research ? The Committee considers that the best approach would be to use the maximum T90 data as the basis for the assessment (rather than the minimum or mean T90) as, while this may not be representative up to 6 months, it does represent a worst case scenario for die-off;

- the results of the risk assessment are expressed in terms of bacterial loadings in soil and on root crops. The risk assessment would benefit from the analyses being extended to indicate the potential risk of infection to humans from the consumption of root crops grown in soil to which manure and/or abattoir waste has been applied. The working assumption for this additional work should be that all produce is consumed raw;

- it would have been helpful had a more direct comparison been drawn in the report between the predictions of bacterial loadings on crops and the guidance provided in ‘Managing Farm Manures for Food Safety’. The key question to be addressed is whether the guidance is appropriate or whether it gives rise to a significant contamination risk;

- more specifically, the tables need to be recalculated to take account of the latest draft of the guidance on ‘Managing Farm Manures for Food Safety’. The contractor has looked at batch storage for 3 months, whereas

the current draft guidance proposes a 6-month period. The current draft also proposes 3 months for composting, and a 12 months harvesting restriction period for direct application of untreated waste to land. In calculating the risks associated with each of the recommendations in the guidance, account should only be taken of the relative risks of waste being processed by each of the routes, and not the volumes of such waste (which can be expected to vary over time);

- a significant factor in risk reduction is dilution to soil. This is affected by the assumption of an application depth of 0.15m for slurry and 0.1m for farmyard manure. If this is seen as a critical element in the risk assessment, then the guidance to farmers should reflect this fact and should include advice that all waste should be injected or dug in to a specified depth. However, it should be recognised that injection, especially of abattoir waste, may prove difficult to carry out without material becoming widely disseminated;

- the guidance should also reflect the relative difficulty of assessing the risks associated with different pathogens in different wastes when the application rates assumed in the risk assessment also vary as between waste types and animal species;

- the risk assessment would benefit from the inclusion of a table summarising for each pathogen and each type of animal waste the estimated reduction achieved by each pathway. This should exclude volumes of waste going to different pathways and should take as a starting point 1 organism. This will make clear the relative reduction achieved through each pathway and thus enable the various pathways to be compared;

- consideration should be given in the risk assessment report to the potential risk from internalisation of bacteria (although the conclusion may well be that this is extremely low);

- the contractor has assumed that there is little likelihood of animal viruses being present in manures, slurries and abattoir wastes and, thus, no reason to include them in the risk assessment. In the Committee's view, viruses will be abundant in such material and this certainly needs to be reflected in the risk assessment.

3. The Committee also draws attention to two detailed points, namely :-

- Table 5.3 : "10^{7}" should read "10^{-7}"; and

- Tables 12.1 and 12.2 : the unit of measurement (pathogen loading per tonne of crop ?) needs to be identified.

4. The ACMSF feels unable to draw any firm conclusions about the safety of any of the practices examined, in the absence of further documentation addressing the points noted above.

5. Finally, the Committee has expressed its concern about the potential for process by-pass and anticipates that it will be extremely difficult to ensure compliance with any guidance provided.

Yours sincerely

COLIN MYLCHREEST
Administrative Secretary

Annex X

Advisory Committee on the Microbiological Safety of Food

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WC2B 6NH

17 January 2003

Dear Sonia

FOOD STANDARDS AGENCY SURVEY OF *SALMONELLA* CONTAMINATION OF UK-PRODUCED SHELL EGGS ON RETAIL SALE

1. Thank you for your e-mail of 23 December inviting ACMSF comments on the draft protocol for the above survey. I have consulted the Committee's standing Surveillance Working Group. The Group's comments are at Annex A.

2. In the Group's view, a survey of imported eggs should also be conducted as a matter of urgency. The Group's preference would be for surveys of UK and imported eggs to be carried out concurrently, the better to inform the Food Standards Agency's risk management decisions.

3. I am copying this letter to the Chairman (Tom Humphrey) and members (Mike Gasson, Patricia Jefford, Alec Kyriakides and Sarah O'Brien) of the ACMSF Surveillance Working Group.

Yours sincerely

By e-mail

COLIN MYLCHREEST
Administrative Secretary

ANNEX A

ACMSF SURVEILLANCE WORKING GROUP : COMMENTS ON DRAFT PROTOCOL FOR FSA SURVEY OF *SALMONELLA* CONTAMINATION OF UK-PRODUCED SHELL EGGS ON RETAIL SALE

Protocol		Comments
Para.	**Lines**	
1	6-7	*Salmonella enteritidis* to read *Salmonella* Enteritidis
1	11	Add, at end of final sentence, “on either the shell and/or in the contents”.
3	1	Replace “chickens” with “flocks of laying hens”.
3	1	*S. enteritidis* to read *S*. Enteritidis.
3	6	Replace “in line” with “together”.
3	9	Replace “this theory” with “the implication that the reduction in *Salmonella* cases was linked to a fall in egg contamination rates”.
12	12	Add between “If” and “unsure”, “the people taking the samples are”.
16		The temperature of the eggs on retail sale should be recorded, as should information on whether they were displayed in a temperature controlled environment (eg. shop window, air controlled aisle, etc).
17	1-2	Define “contamination” ? Does it mean faeces, blood, feathers, etc ?
20	1-2	Data logger should be placed with the samples to monitor compliance with transport temperature requirements.
25		If the age of the eggs is important, then a maximum time should be stipulated between sampling and submission to the laboratory.

Protocol		Comments
Para.	**Lines**	
27		• Need for thorough cleaning between sample batches as *Salmonella* can spread easily and can persist on surfaces for months. • The laboratory in question should provide the FSA with the necessary assurance that the required numbers of expert staff will be available to do the work and that the protocol will be strictly adhered to. • There should be environmental sampling of the laboratory for *Salmonella* prior to egg testing, as a further safeguard that any contamination found during egg testing originated from the eggs.
Appendix 2		Most Spar outlets are "independents". They can purchase through the Spar network but are not required to do so exclusively.
Appendix 3	3-4	"Aseptically break open the eggs….with pieces of shell". How should this be done? What happens if a piece of shell falls into the egg contents ? Should the sample be discarded ?

Annex XI

Advisory Committee on the Microbiological Safety of Food

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21 January 2003

Dear Debby

defra STRATEGY FOR VETERINARY SURVEILLANCE

What the ACMSF was asked to do

1. You asked me to obtain an ACMSF view on Defra's consultation document proposing a strategy for enhancing veterinary surveillance in the UK. Following brief discussions, first with you and then with Jon Bell, about the question to be put to the Committee, ***I sought their opinion on whether what Defra proposes is likely to generate the kind of information necessary in assuring the microbiological safety of food and consumer protection***.

2. In view of the very tight deadline, I ascertained ACMSF members' comments on the Defra consultation document in correspondence. The Committee's Chairman, Professor Georgala, then met with a few key members to elaborate a consensus view. Professor Georgala has asked me to write on his behalf conveying this to you.

Background

3. By way of background, the ACMSF wrote in June 2000, in the context of the MAFF review of veterinary surveillance in England and Wales carried out at that time, highlighting a number of issues which it regarded as of particular importance. These underlying precepts still obtain and bear reiteration. They were :-

- the need for good practice and systematic planning in animal and food surveillance. The paramount need for good study design, particularly random sampling, was stressed, as was the need to decide first on the questions to be answered by surveillance and then to design the survey, with appropriate statistical input, to answer the identified questions;

- the ability to compare results from different surveillance projects covering similar areas. This necessitates the use of uniform protocols and common methodologies;

- the requirement for close collaboration between organisations directing or undertaking surveillance of microorganisms isolated from food, animals and humans in order to provide a comprehensive picture of the prevalence of foodborne infection, and better inform public health and food safety policy;

- the importance of using surveillance results to highlight good and bad practice, and as a basis for remedial interventions; and

- the need for a collaborative approach to *Campylobacter* typing across the UK, and in relation to food, animal and human isolates in view of the very significant contribution of the organism to foodborne disease. This was seen as essential if the sources of *Campylobacter* and transmission routes were to be clarified.

4. The ACMSF was concerned that foodborne pathogens very often originate in farmed livestock. The Committee therefore reiterated its view that coordinated surveillance, including laboratory methodologies and reference typing, were essential in improving understanding of how and by what route foodborne pathogens are able to move from the live animal through the food chain to cause human infections.

ACMSF opinion on proposed Defra strategy

5. In the ACMSF's view, a strategic and coordinated approach to veterinary surveillance is, in principle, very welcome. Important benefits could flow from the achievement through collaboration of the much closer integration of animal health, human health and food safety. However, past efforts to attain this goal have been fraught with difficulties. That being so, whilst it is recognised that development of a strategy for veterinary surveillance is an iterative process, the process will need very close attention to ensure that the Food Standards Agency's interests are fully protected.

6. Animal health issues are predominately the focus of the strategy. Some of these may, coincidentally, have human health implications eg. BSE/CJD. There is insufficient attention given to human exposure to pathogenic microorganisms through food chain pathways. *Salmonella Enteritidis* in eggs or *Escherichia coli* O157 in cattle or *Campylobacter*

spp in poultry and pigs are, of course, very important in human health terms; but, in the absence of widespread clinical implications for livestock, and/or a significant economic or social impact on the farming community, these organisms are not afforded the attention in Defra's strategy which they warrant in terms of the microbiological safety of food. The FSA will, on the other hand, be very interested in the (often intermittent) presence of pathogenic microorganisms in clinically normal food animals. A further example of the strategy's lack of focus on microbiological food safety can be seen in the membership of the Veterinary Surveillance Strategy Project Board at Appendix N which, whilst high powered, does not seem to include in-depth experience in the microbiological safety of foods.

7. To reflect microbiological food safety requirements, the strategy needs a clear exposition of the objectives of surveillance. These will include :-

- guiding the research community by alerting them to the microorganisms of interest;

- identifying gaps in collaboration and avoiding duplication of effort;

- identifying and monitoring trends in the incidence and prevalence of zoonotic microorganisms;

- ensuring that animal occurrence can be related, where appropriate, to outbreaks of human disease;

- highlighting changes in human health risks through food chain exposure pathways.

8. Surveillance needs to be objective-driven because that will influence the type of surveillance to be conducted. Thus, the strategy needs to reflect more strongly the outputs which the FSA will need from surveillance in order to inform microbiological food safety policy development and interventions – and it bears restating that the microorganisms of concern for food safety may not at first appear to be of primary economic importance to the farming industry. Trend data, and repeat surveillance, will often be required. Farm or veterinary practice-based sentinel surveillance may convey significant advantages over *ad hoc* surveillance in terms of consistency and comparability of methodology (particularly sampling frames) and results, and in relation to repeatability.

9. Turning to the question of data collection, the concept of a data warehouse populated by contributions from myriad disparate groups is very ambitious. If it is to succeed, data collected must be both reliable and comparable. A prerequisite will therefore be a uniform approach to the design, methodology, sampling framework, validation and statistical aspects of surveillance. The ACMSF has consistently stressed the need to give proper attention to these elements and has set up a standing Surveillance Working Group to facilitate the provision of advice to

Government in connection with its microbiological food surveillance programme and other surveillance relevant to foodborne disease. Unless a standardised approach to surveillance can be agreed in principle and implemented in practice, the quality of data which defra envisages collecting in its data warehouse will be compromised, and meaningful comparisons across the animal-human-food spectrum will be impossible.

10. The fact that contributions to the database are to be voluntary is likely to mean that coverage will be less than comprehensive. The correct balance therefore needs to be struck between quality and quantity. In database terms, size is not, of itself, a virtue. Quality is the key. A very large database populated with unreliable data will offer very poor value. The task of quality assuring inputs will be considerable. A more targeted approach, based on the collection of reliable data to inform policy development, may thus be preferable. It should also be borne in mind that, if the microbiological safety of food is not an explicit component of the strategy, relevant data will not be collected.

11. Data quality will also be an important element in the prioritisation process. In order to engender confidence, the process will need to be transparent, scientifically sound, and reflect policy priorities. Consumer concerns and confidence will also be relevant considerations. It also needs to be recognised that the various contributors to the database will have different priorities, and even that there may well be different, geographical-based, priorities within single organisations.

12. Finally, the Committee expressed reservations about the implication which could be drawn from Question 8 of Defra's consultation letter that charging for surveillance outputs is a distinct possibility. There are strong public health reasons why such outputs should be both publicly-available and free. Even if this were not the case, charging for outputs is almost certain to result in charging for inputs and could seriously compromise the effectiveness of the surveillance process.

13. I hope you will find these comments helpful in enabling you to frame the Agency's response to the consultation document. Copies of this letter go, for information, to Jon Bell, Andrew Wadge, Judith Hilton and Peter Hewson.

Yours sincerely

COLIN MYLCHREEST
Administrative Secretary

References

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