Please note that these draft minutes are subject to approval by the Advisory Committee on the Microbiological Safety of Food at its next meeting, on 26 June 2003

ACM/MIN/47

DRAFT MINUTES OF THE FORTY-SEVENTH MEETING OF THE ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD HELD ON 20 MARCH 2003 AT AVIATION HOUSE, 125 KINGSWAY, LONDON, WC2B 6NH AT 10.30 AM

Present

Chairman :	Professor D L Georgala
Members :	Dr G R Andrews Ms S Davies Dr K M Hadley Professor P R Hunter Mrs P Jefford Professor A M Johnston Mr A Kyriakides Dr S J O'Brien Mr B J Peirce Dr Q D Sandifer
Assessors :	Mr P J R Gayford (DEFRA) Dr R Skinner (FSA)
Secretariat :	Dr J Hilton (Medical Secretary) Mr C R Mylchreest (Administrative Secretary) Mrs E A Stretton Miss C L Wilkes
Others	Dr J P Back (FSA) : agenda item 8 Miss G V Hoad (FSA) : agenda item 10 Dr P E Cook (FSA) : agenda item 11

1 Chairman's introduction

1.1 The Chairman welcomed Members to the Committee's forty-seventh meeting. He also extended a warm welcome to members of the public and others present (see Annex I).

1.2 The Chairman dealt with a number of housekeeping matters and also drew attention to one additional item, on avian influenza, which had been added to the agenda since the provisional agenda had been

published. He explained that the meeting would be in 2 parts. The Committee would first deal with its normal business, after which there would be an opportunity for members of the public to ask questions and make statements.

1.3 The Chairman noted that the current meeting would be the final ACMSF meeting for Mrs Jefford and Professor Mensah. He asked that the minutes should reflect his gratitude to both Members for their contribution to the work of the Committee and record his best wishes for the future.

1.4 The Chairman also asked that the minutes should record his congratulations to Ms Lewis, Mr Peirce and Mr Piccaver who were being re-appointed from 1 April 2003, and to one new Member – Mr Philip Mepham – who was being appointed from 1 April 2003.

1.5 Finally, the Chairman expressed his thanks and best wishes to Dr Skinner who was retiring after many years as first Department of Health, and latterly FSA, Assessor.

2. Apologies for absence

2.1 Apologies were received from a number of Members - Ms Lewis and Dr Wyatt (for medical reasons), and Dr Brown, Professor Gasson, Professor Humphrey, Professor Mensah and Mr Piccaver.

2.2 Apologies were also received from 2 Assessors – Dr Doherty (NIDHSSPS) and Dr McIlroy (NIDARD).

3. Declarations of interest

3.1 The Chairman reminded Members of the need to declare any interests arising from any of the agenda items. He reminded Members that their more general interests were recorded in the Committee's Annual Reports. The 2002 Annual Report would be published shortly.

3.2 Mr Kyriakides declared an interest in agenda item 11. He said that Sainsbury's had participated in the FSA's retail chicken survey.

4. Minutes of the 46th meeting (ACM/MIN/46 (REV.1))

4.1 Members had commented in advance of the meeting on the draft minutes of the 46th meeting. One amendment had been suggested – in paragraph 8.3 – to make it clear that the figure in the sewage sludge risk assessment for *Campylobacter* related to potential (not actual) human infections. Members approved the draft minutes, as amended, as a correct record of the Committee's forty-sixth meeting.

5. **Matters arising (ACM/607)**

5.1 Members noted the Secretariat summary (ACM/607) of action taken on matters arising from the forty-sixth meeting.

6. **Avian Influenza (ACM/631)**

6.1 By way of introduction, the Chairman noted that there had been an outbreak of a highly contagious and fast spreading influenza amongst poultry in the Netherlands and, possibly, Belgium. That had prompted the Food Standards Agency to seek the ACMSF's views on any possible risk to human health through food chain exposure pathways. He invited Dr Hilton to introduce ACM/631.

6.2 Dr Hilton said that the FSA's interest in Avian Influenza (AI) actually pre-dated the recent outbreaks. European Union control measures for AI currently only applied to highly pathogenic strains. However, it had become clear in recent years that low pathogenicity strains could mutate and develop into highly pathogenic strains. A European Commission Decision (2002/649/EC) therefore obliged all Member States to survey AI in poultry and wild birds to enable a view to be taken on whether control measures should be applied to more AI strains. The survey was designed to detect the presence of AI strains and to give an idea of the distribution of AI within the EU.

6.3 Turning to the recent outbreaks, Dr Hilton said that AI was widespread among laying flocks in the Netherlands. There had been 87 suspected outbreaks of which 51 had been confirmed. 35 were thought extremely likely to be AI. There had been 1 possible case of infection in a flock in Belgium, still to be confirmed. Various measures had been introduced to control the spread of the disease. Virological testing had shown the virus to be an H7N7 strain of AI which could give (indeed, had given) rise to conjunctivitis in humans. Of 22 patients with conjunctivitis in the Netherlands (mostly persons engaged intensively with the culling of infected flocks), 19 had been confirmed virologically as having been infected with H7N7 AI. Preliminary data suggested that 75 of 1,100 exposed personnel had developed conjunctivitis, an attack rate of 7%. Those in high risk groups (and close family contacts) were being prescribed antivirals against conjunctivitis and were being vaccinated against influenza as a safeguard against the possibility of co-infection with human influenza strains (thus reducing the risk of recombination). There had been no indications of systemic illness in humans.

6.4 Dr Hilton said that she had sought a preliminary view from the ACMSF's virologist Member, Dr Brown, on the possible risk to human health, including through food chain exposure pathways. Evidence from past cases suggested that the virus was not easily spread amongst humans and that the handling or consumption of poultry meat had not been implicated in illness. While the species barrier was not absolute, there

were a number of factors which suggested that the risk from consuming eggs or meat from AI-infected poultry would be extremely small. Clinically-affected poultry would be excluded from the food chain. Proper cooking would destroy any virus present in meat or eggs and non-specific barriers like saliva and gastric juices would provide a primary barrier against infection following ingestion of viruses. Studies of people occupationally exposed to chickens with a significant prevalence of apathogenic AI strains had failed to show antibodies, although the haemagglutination inhibition tests use were insensitive for detecting AI antibodies so were inconclusive. While receptors in the gut of chickens were able to accept virus, spread was largely respiratory and the risk of intestinal infection was regarded as low.

6.5 Dr Hilton said that, whilst the FSA's initial view was that there was a small risk to human health through food chain exposure pathways, the Agency would find it helpful to have the ACMSF's formal assessment. It was proposed in ACM/631 that Dr Brown should convene an *ad hoc* group of experts to provide this formal advice. Members were asked to agree this approach, and to give their opinion on the preliminary risk assessment.

6.6 The following points emerged from the ensuing discussion :-

- the vast majority of the Dutch conjunctivitis cases had been seen in those occupationally-exposed to known infected flocks. 1 or 2 cases appeared to have resulted from close contact with an affected person;

- all that was known about the virus suggested that it was not foodborne. Indeed, something of such low infectivity to humans was thought unlikely to pose a food chain exposure risk;

- the virus had a dramatic effect on poultry, affecting whole houses rather than individual birds. Infected birds would be profoundly viraemic. Absolute silence among infected birds was a striking manifestation of the disease. It was thus unlikely that infection would go undetected, and AI-infected birds could not be slaughtered for the food chain;

- the virus was probably spread by wild fowl, so extensively-reared chickens were likely to be more at risk of infection than housed birds;

- affected layers would be expected to go off lay very rapidly, reducing the risk of human exposure to AI through the consumption of eggs, although it was noted that, on the basis of past experience, there could be no guarantee that infected eggs would, in practice, be cooked sufficiently well to guarantee the destruction of all virus present;

- recombination events were probably rare but potentially catastrophic. History suggested that they were more likely in those parts of the World where there was a much closer daily interface between humans and animals.

6.7 Summing up, the Chairman said that the Committee's preliminary conclusion supported that of the FSA, that the risk to human health from exposure to AI through food chain pathways was probably very low. The Committee was nevertheless alert to the potential for risk and so supported the suggestion that one of its Members, Dr Brown, should carry out a more formal risk assessment. The Chairman proposed that Dr Hilton should request Dr Brown to consult experts in the field and prepare a formal risk assessment. **Action : Dr Hilton** This approach would mirror that adopted by the Committee in 1999 in dealing with a similar request for advice on the risk from Infectious Salmon Anaemia. On that occasion, in the absence of in-house virological expertise at the time, one Member, assisted by the Secretariat, had consulted orthomyxovirus specialists about exposure risks and the possibilities of recombination with other orthomyxoviruses to form reassortments.

6.8 To avoid having to wait until the June meeting for Members to discuss the matter further, the Chairman asked for Dr Brown's risk assessment to go to the Secretariat for clearance with the Chair and Members in correspondence. A formal ACMSF view could then go to the FSA. **Action : Dr Brown and Secretariat**

7. *Campylobacter* Working Group progress report (ACM/617)

7.1 The Chairman introduced ACM/617 charting progress on the deliberations of the *Campylobacter* Working Group. The Chairman reminded those present that tackling *Campylobacter* was a major element in the FSA's foodborne disease and chicken strategies, given the organism's importance in human foodborne illness. ACMSF had had a long-term interest in *Campylobacter* and had issued an Interim Report in 1993. The ACMSF was feeding advice into the FSA as and when it was developed, rather than waiting until a final report was ready, reflecting the fact that the FSA's targets were time-bound.

7.2 The Chairman said that the *Campylobacter* Working Group had taken wide-ranging written and oral evidence. At the one meeting of the Group held since the last meeting of the full Committee, Nottingham University had made a presentation on the potential use of bacteriophage to control *Campylobacter* spp. in poultry production. This had been extremely interesting. Much scientific work remained to be done in developing this possibility still further and there were also regulatory implications to be assessed. The FSA had also shared with the Working Group some initial thoughts on how control of *Campylobacter* in chickens on-farm might best be achieved. The Committee would be returning to this subject under agenda item 8.

7.3 An ACMSF report had been sent to the FSA on the visit by a *Campylobacter* Working Group sub-group to Denmark and Norway (ACM/618). The Working Group had also received information from its Swedish member on the situation in that country. The Working Group

had concluded that on-farm control of *Campylobacter* in housed poultry was a practical proposition. This had been borne out by the experience of the Scandinavian industries.

7.4 The Chairman said that the Working Group had begun to prepare initial drafts of elements of what would eventually form the ACMSF's Second *Campylobacter* Report. This would follow a focussed and streamlined format, mapping scientific and other progress since 1993 (when the Interim Report was published), and covering in greater detail areas such as on-farm control, detection and typing, hygiene in the home and in catering, and research.

8. FSA *Campylobacter* action plan (ACM/619)

8.1 The Chairman invited Dr Jonathan Back (FSA) to introduce ACM/619 summarising the Agency's proposed strategy for controlling *Campylobacter* in chickens.

8.2 Dr Back reminded Members that he had outlined for them at their December 2002 meeting the FSA's thinking on tackling *Campylobacter*. He hoped that Members would find it helpful to have the further progress report contained in ACM/619. The FSA's aim was to reduce the amount of *Campylobacter* entering kitchens via chicken. The organism presented a particularly difficult challenge, given the numbers of broilers infected, the high number of organisms carried by individual birds, and the low infectious dose. The FSA's strategy for tackling *Campylobacter* in chicken was focused on the farm and at the slaughterhouse. Total elimination of the bacterium was not considered feasible at the present time so the objective of the strategy was to achieve a significant reduction in the presence of *Campylobacter* in/on UK-produced retail chicken. If an effective strategy could be developed for tackling *Campylobacter* in chicken production, this would make a significant contribution to reducing the burden of foodborne disease in the UK. A 5% reduction in contamination levels could be expected to result in 40 million fewer *Campylobacter*-positive birds entering domestic and catering kitchens. In developing its strategy, the FSA had taken account of advice from the ACMSF, the output from research and stakeholder consultation, and the experience of other countries. The strategy contained no radical new ideas; rather it was firmly founded on a common sense approach to the *Campylobacter* problem.

8.3 Dr Back said that the main objectives of the first 3 years (2003-2006) of the strategy would be to improve biosecurity in intensive chicken production; provide guidance to farmers to help them achieve the desired improvement; develop an efficient delivery platform for information on biosecurity and *Campylobacter* control; and develop an effective measure of the strategy's effectiveness. The first 3 years of the strategy would be expected to help all intensive broiler farms to reach satisfactory standards of biosecurity and to pave the way for other

control measures like the scheduling and testing of flocks, and the diversion of positive flocks for heat treatment or freezing.

8.4 Dr Back said that much of the information on biosecurity contained in *Salmonella* Codes of Practice would be relevant to *Campylobacter*. The challenge would be to ensure that producers not only knew what measures they were supposed to be taking but were actually taking them. The initial focus of the Agency's strategy would therefore be a campaign to promote biosecurity on the broiler farm. Technical workshops were seen as an effective medium for delivering key messages. A second phase of the campaign would look to identify areas where additional guidance was required. Guidance could then be produced and appropriate delivery platforms could be developed.

8.5 Dr Back said that a third phase would concentrate on *Campylobacter*-specific measures. He outlined a number of elements which might feature in this third phase. The Agency would encourage the use of physical hygiene barriers and would develop any necessary technical guidance on the type of barrier and usage. Consideration would be given to how the practice of thinning could be modified so as to minimise the effect on biosecurity. Further attention would be given to the question of whether crate washing could be done more hygienically. The link between good husbandry practice, general bird health and susceptibility to *Campylobacter* infection would also be studied.

8.6 Dr Back said that, although the strategy would focus principally on the broiler farm, the importance of control at the slaughterhouse would not be overlooked. The possibility of scheduling positive flocks for slaughter at the end of the day, and the use of heat treatment or freezing for positive carcasses would be considered. The success of Scandinavian countries in using novel processing aids would be monitored closely.

8.7 Dr Back said that evaluation would be an important feature of the strategy. One means of measuring the success of the strategy would be a rolling retail survey which would provide data over time on whether contamination levels in the finished product were falling and on any seasonal effect. Progress on-farm might be measured by a flock prevalence survey, although it would first be necessary to develop appropriate sampling and testing methods.

8.8 Dr Back said that the FSA had no legal powers to compel the industry to adopt the various elements of the strategy. However, there seemed to be a genuine willingness on the part of industry to confront the *Campylobacter* problem. However, it was recognised that a school of thought existed in parts of the industry that the various measures should not be embraced until their effectiveness could be demonstrated. The FSA did not share this view not least because, in some cases, the efficacy of the measures concerned could only be demonstrated through their implementation. The Assured Chicken Production Scheme (by virtue of its coverage – 85% of UK chickens – audit arrangements, etc)

was seen as a possible vehicle for the introduction of parts of the strategy. Indeed, some biosecurity aspects were already a feature of ACP arrangements. The economic concerns of the poultry industry, including the threat of increased import penetration, were recognised but many of the measures advocated in the strategy could be introduced at minimal cost. The main focus of the strategy was intensive production, where infection could be better addressed. However, the Agency was considering funding research on how *Campylobacter* might be effectively tackled in extensive production systems. The Agency would also be monitoring the need for *Campylobacter* research, bearing in mind national and international developments in this area.

8.9 In conclusion, Dr Back said that he sought the ACMSF's views on 4 questions. Two of these (whether the main focus of the strategy should be on improving biosecurity in the broiler farm environment; and whether improving general biosecurity measures was a prerequisite to promoting *Campylobacter*-specific measures) he regarded as rhetorical, given the Committee's earlier advice. However, he would appreciate Members' views on the merits of undertaking a rolling retail survey and on the importance of establishing flock prevalence.

8.10 The following were among the points made in discussion :-

- evaluation was regarded as an important element of the strategy. Support was expressed for a rolling retail survey. It was noted that a retail survey would not capture the output from all slaughterhouses and that there might be advantages in having a slaughterhouse-based survey. ACMSF Surveillance Working Group assistance was offered in the planning phase of any survey;

- the British Poultry Council, which was among the stakeholders consulted by the FSA, was seen as a possible platform for the delivery of advice to producers. It was suggested that the State Veterinary Service might contribute usefully in promoting the use of hygiene barriers;

- there were clear economic implications in improving the design and construction of poultry houses to improve biosecurity. Guidance on the improvement of existing buildings might provide a useful compromise;

- there was some scepticism about whether high levels of biosecurity (including changing footwear and clothing each time staff entered a house) would be sustained over time;

- given the capacity for thinning to compromise biosecurity, a reasonable case could be made for banning it, notwithstanding the economic implications and its use in providing producers with supply flexibilities. However, as the Agency currently had no powers to introduce a ban, the emphasis in the strategy for the time being at least

should be on ensuring that, where thinning was carried out, it was done with the least damage to biosecurity;

- the Agency would be seeking to establish a minimum, common, acceptable level of biosecurity across the industry. Some producers were already achieving the required standard. Not all measures implied high costs. There was already pressure from retailers and others for producers to supply a microbiologically better product. The Agency would assess the costs and benefits of any action and would certainly not ignore the economic impact. Indeed, one of the FSA's governing principles was that its action should be proportionate;

- measures aimed at reducing the microbiological contamination of chicken should not be regarded as an on-cost. The food industry was improving the microbiological status of its product across the board and there was no reason in principle why the poultry industry should not be expected to do the same. Foodborne disease gave rise to significant public health costs.

8.11 The Chairman thanked Dr Back for his presentation and for his replies to Members' questions.

9. **Codex (ACM/620)**

9.1 The Chairman recalled that the Codex Committee on Food Hygiene had met at the end of January 2003 in Orlando, Florida. Extracts of the report of the meeting (ACM/620) had been provided for the information of Members. Professor Georgala invited Dr Roger Skinner (FSA) to give his impressions of the meeting.

9.2 Dr Skinner pointed out that, although the report was entitled as a report of the 34th session, it actually related to the 35th session of the Committee on Food Hygiene.

9.3 Dr Skinner provided a brief background introduction to Codex, for the benefit of Members. The Codex Alimentarius Commission was a joint WHO/FAO body set up in 1962. Its purpose was to protect consumer health, to promote fair trade and to develop commodity standards. Codex outputs had effect throughout Europe and the rest of the World. The Codex Committee on Food Hygiene (CCFH) was an important horizontal committee of Codex which met roughly once a year. Dr Skinner briefly outlined the Codex step system for advancing codes of hygiene practice. There were 8 steps. At Step 5, a proposal attained international status. Proposals were adopted at Step 8. Dr Skinner said that the World Trade Organisation looked to Codex in the event of world trade disputes. Codex had thus gained an important political status in recent years.

9.4 Turning to the 35th session of the CCFH, Dr Skinner drew attention to two of the decisions which had been made in areas of interest to the

ACMSF. First, revised draft guidelines for the application of a HACCP system, adapted to meet the requirements of small and medium size enterprises, had been cleared for forwarding to the 26th Session of the Codex Alimentarius Commission for final adoption at Step 8. Second, a proposed draft code of hygiene practice for milk and milk products had been approved for forwarding to the 26th Session of Codex for preliminary adoption at Step 5. Amongst other items of interest to ACMSF were reports on FAO/WHO *ad hoc* expert consultations on risk assessment of microbiological hazards in food, and related matters. Four risk assessments were in various states of completion. A risk assessment for *Salmonella* in eggs and poultry had been published. One on *Listeria* in ready-to-eat foods was well advanced and should be published within a few months. Risk assessments for *Campylobacter* spp. in broiler chickens and *Vibrio* spp. in seafood were expected to be finalised in 2003. The outcomes of the risk assessments would provide CCFH with a valuable resource for use in the elaboration of risk management tools. It was now for CCFH to decide how best to use these outputs in developing risk management options. The UK was pressing for strategies and guidance to be developed based on current knowledge. However, some countries had argued that risk management options could only be developed once a farm to fork probabilistic risk model was available.

9.5 Dr Skinner said that work was continuing on developing guidelines for the control of *Listeria monocytogenes* in foods. The UK had been pressing for the development of common sense advice structured on sound food hygiene principles, and was trying to avoid a microbiological criteria-based approach. Foodborne illness seemed to result from exposure to high numbers of organisms. Reducing exposure could thus be expected to result in a significant reduction in illness.

9.6 Dr Skinner reported that, among other items considered by CCFH, work was continuing on developing a code of hygiene practice for egg products, and on revising the code for foods for infants and children, particularly for dried infant formula. The risk profile on *Enterobacter sakazakii* was being revised, and the UK had successfully pressed for other pathogens of concern which might be present in powdered infant formula, notably *Clostridium botulinum* , to be given appropriate attention.

9.7 The growing importance of Codex in relation to consumer interests was noted. Dr Skinner pointed out that, whether or not consultations within Codex continued to be carried out on an *ad hoc* basis or became subject to a more formalised, committee-based structure, the Food Standards Agency would continue to be involved in this area of work. There would thus be a direct route into Codex for the ACMSF via the Agency.

9.8 The Chairman thanked Dr Skinner for his very helpful report.

10. **Report of FSA national study on the microbiological quality and heat processing of cows' milk (ACM/621)**

10.1 The Chairman welcomed Ms Geraldine Hoad (FSA) and invited her to introduce the final report of the Agency's national study on the microbiological quality and heat processing of cows' milk.

10.2 Ms Hoad said that the ACMSF had already seen the results relating to *Mycobacterium avium* subsp. *paratuberculosis* (MAP), as well as the non-MAP results. The part of the report that the Committee had not seen was that relating to methodology and processing data. A copy of the pro forma which survey participants had been asked to complete was at Annex D of ACM/621. A great deal of information had been provided. This was discussed in Section 3.7 of the Report. Statistical analysis of process variables did not explain observed variability in the microbial quality of milk. However, possible links might have been obscured by the cross-sectional nature of the survey design, or as a result of problems in interpreting and responding to questions on the Dairy Form.

10.3 Ms Hoad said that the main conclusion was that most samples were of satisfactory microbiological quality, although a small percentage had contained coliforms or *E. coli*. Expressing concern that a number of pasteurised milk samples had been found to contain coliforms, *E. coli* and potential pathogens, the ACMSF had asked the FSA to pursue with industry the unsatisfactory nature of some of the results. Ms Hoad said that the industry had tried to address this through the development, with FSA assistance, of a Code of Practice on Pasteurisation.

10.4 Ms Hoad also noted that the ACMSF had advised that the long-term aim should be to eliminate 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.

10.5 Ms Hoad said that the FSA intended to repeat the survey, not least as a means of gauging the success of the MAP strategy.

10.6 Among points to emerge from discussion were that :-

- the FSA had attempted, through follow up visits to processors' premises, to eliminate the possibility of MAP-positive results being due to post-pasteurisation contamination. Notwithstanding a small degree of uncertainty over MAP, the ACMSF had nevertheless previously been able to satisfy itself that viable MAP had indeed been found in samples of pasteurised milk and that a strategy was thus needed to get MAP out of milk;

- the aim of breaking down the MAP results for pasteurised milk samples in Table 9 of the Report had been to attempt to correlate

microbiological quality with fat content. No statistically significant trend had been established;

- FSA efforts to improve process controls had targeted on-farm pasteurisers and were a feature of the Agency's foodborne disease strategy;

- *E. coli*-positive pasteurised milk samples were not confined to the smaller processors, but had come from the larger dairies too. It was therefore important that the FSA maintained pressure on the industry to ensure that pasteurisation was being carried out effectively and that appropriate steps were being taken to avoid post-pasteurisation contamination;

- surprise was expressed over the number of non-SMEs who did not have HACCP arrangements in place. Dr Hilton reported that the FSA had commissioned work to look at HACCP uptake in the manufacturing sector. Her offer to provide an information paper on the position in relation to dairies for the next meeting was gratefully accepted. **Action : Dr Hilton**

10.7 The Chairman thanked Ms Hoad for her presentation and her responses to Members' questions.

11. **FSA UK survey of *Salmonella* and *Campylobacter* contamination of fresh and frozen chicken on retail sale (ACM/622)**

11.1 The Chairman welcomed Dr Paul Cook (FSA) and invited him to introduce the final report of the FSA's UK survey of *Salmonella* and *Campylobacter* contamination of retail chicken. The Chairman reminded Members that the ACMSF had been consulted on the draft survey protocol and had also been informed by Dr Cook in October 2001 of the preliminary results.

11.2 Dr Cook said that the headline data had been released in August 2001. Since then, follow up work had been undertaken eg. to trace the origins of the chicken samples, to cross-check UK samples, and to type some 2,000 isolates. The final report had been published at the end of February 2003. The headline figures remained unchanged. 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 1996 in its Report on Poultry Meat) 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". Dr Cook noted that there had been a dramatic reduction in *Salmonella Enteritidis*, to the point where most *S. Enteritidis* found was from non-UK sources.

11.3 Dr Cook said the *Campylobacter* figure (50% of UK samples positive) represented the first national survey figure. This represented a significant level of contamination. Detailed analyses had been carried out for contamination of the different chicken portions and of the strains involved.

11.4 The following points emerged in discussion :-

- Dr Cook thought it unlikely that there was any correlation between the introduction of the EU ban on the chlorination of poultry carcasses from May 2001 and the increase in *Campylobacter*-positive samples purchased in England and Wales in the last 3 weeks of the 8-week sampling period (because the increase had not been seen across the UK as a whole);

- given the seasonality of *Campylobacter* infection, Members would support in principle any FSA proposal to conduct a rolling survey of contamination of retail chicken;

- the FSA had not thus far conducted any analysis based on combining the data for *Campylobacter* serotypes and phage types. However, the predominant serotypes and phage types found in chicken samples had reflected human isolates.

11.5 Professor Georgala thanked Dr Cook for his presentation and noted that the *Campylobacter* baseline figure underlined the ACMSF's interests in the organism and the need for further work to tackle *Campylobacter*.

12. **Agricultural disposal of sewage sludge (ACM/623)**

12.1 The Chairman invited Mr Kyriakides (in the absence of Dr Wyatt, Chairman of the *Ad Hoc* Group on Sewage Sludge) to bring Members up-to-date with developments on the Committee's peer review of the water industry risk assessment for pathogens in biosolids.

12.2 Mr Kyriakides recalled that Dr Wyatt had provided Members with an oral progress report in December 2002. Although issues outstanding at that time had not been wholly resolved in the intervening period, it seemed appropriate at this stage that Members should be brought up-to-date on developments. The *Ad Hoc* Group had therefore prepared a progress report (ACM/623).

12.3 Mr Kyriakides reminded Members that the objective of the risk assessment was to estimate the risks to humans of infection from consuming root crops grown on soil to which sewage sludge has been applied. The parameters used in the risk assessment reflected the conditions of the Safe Sludge Matrix and the proposed statutory controls for the agricultural use of sewage sludge. Quantitative risk assessments had been performed for *Salmonella*, *E. coli* O157, *Campylobacter*,

Listeria monocytogenes, *Cryptosporidium parvum*, *Giardia* and enteroviruses.

12.4 The *Ad Hoc* Group had met the contractors on 8 November. The contractors had taken the Group through the risk assessments for all seven pathogens. Among a number of interesting points to emerge from this presentation, and the ensuing discussion, were that :-

- pasteurisation, which was a treatment option permitted under the Safe Sludge Matrix, was little used in practice for the treatment of sewage sludge. To extend its use would be hugely expensive;

- there were comprehensive HACCP-based controls in place at sewage treatment plants to ensure that appropriate treatment took place;

- there was also a variety of monitoring on-farm for compliance with conditions on sludge application;

- controls on the agricultural disposal of sewage sludge generally seemed robust and were in stark contrast to the disposal of sludge from waste water treatment plants associated with abattoirs which was less well regulated.

12.5 Mr Kyriakides said that, as Dr Wyatt had explained in his oral report on 5 December 2002, the *Ad Hoc* Group had been able to satisfy itself that the risk assessment was based on a very conservative approach embodying large margins of safety. The Group had concluded that the risk to human health from consuming root crops grown on agricultural land on which treated sewage sludge had been spread was very small. Indeed, the Group considered the risk to be much lower than that posed by animal wastes and manures, which were not controlled.

12.6 Mr Kyriakides said that the one substantive issue remaining to be resolved concerned the risk assessment for *Campylobacter*. The contractors' current draft risk assessment estimated that around 37,000 potential human *Campylobacter* cases a year could result from the consumption of crops grown on land to which sewage sludge has been applied. However, the *Ad Hoc* Group was satisfied that this figure was unrealistically high because the risk assessment took no account of secondary storage, which would help reduce campylobacters present in the sludge. Secondary storage followed on from mesophilic anaerobic digestion, which appeared not to reduce campylobacters present. In addition, the model allowed for only 16 days' decay in or on soil (whereas the Safe Sludge Matrix imposed delays of a year or 30 months, depending on the crop involved, between application of sludge and the harvesting of a crop).

12.7 The *Ad Hoc* Group had raised this with the contractors and had now received their proposals for building these factors into the *Campylobacter* risk assessment. What the contractors proposed

seemed reasonable and the Group had told them that their approach was acceptable, subject to the necessary paper work being produced. It was the Group's intention to report back to the Committee once further progress had been made.

12.8 Mr Kyriakides said that the contractor had also asked to be allowed to use ACMSF peer review comments in the foreword to their report. The *Ad Hoc* Group intended to make recommendations on this, and on the form of any ACMSF contribution, once it has seen the contractors' finished draft report.

12.9 In conclusion, Mr Kyriakides said that the Group would find it helpful to have an indication from ACMSF Members that they were content with the way the *Ad Hoc* Group proposed that matters should be taken forward.

12.10 The Chairman thanked Mr Kyriakides for his report and confirmed that the Committee was content with the proposals for taking matters forward. He said that it was important for the Committee to retain editorial control over what was included in the foreword to the contractor's report about the ACMSF's involvement in the peer review process.

13. **Any other business**

13.1 There was none.

14 Dates of future meetings (ACM/624)

14.1 The Chairman reported that the dates for the Committee's meetings for remainder of 2003 were 26 June, 18 September and 4 December. The June and September meetings would be held in Aviation House. The December meeting would be held in Trinity House. All three would be open to members of the public and others.

15. Public Questions and Answers

15.1 The Chairman invited members of the public present to ask any questions they might have on the day's business or any other aspects of the Committee's work.

15.2 **Mr Alan Long (VEGA)** asked whether, in the context of risk assessment for the agricultural disposal of sewage sludge, any account had been taken of prions present. He also asked whether there had been any Government-funded *Campylobacter* surveillance of pheasants, which were intensively reared for food, or of deer.

15.3 The Chairman said that the ACMSF's involvement with the sewage sludge risk assessment was restricted to certain bacterial pathogens and enteroviruses. Prions fell within the remit of the Spongiform

Encephalopathy Advisory Committee. Mr Gayford explained that there was no active DEFRA surveillance of pheasants and little data on *Campylobacter* in pheasants. The only surveillance of deer was animal disease-related.

15.4 **Mr Alan Proctor (Zhitz International)** asked why poultry meat was not routinely heat-treated to kill pathogens; what was considered an acceptable level for faecal contamination of cows' milk; whether the sulphite-reducing bacteria test of water quality could be applied to other food testing; and whether the ACMSF had any concerns about the results of recent Japanese work to investigate the existence of *Helicobacter pylori* in cows' milk.[1]

15.5 The Chairman said that cooked chicken prepared under strict HACCP conditions was available at retail. In addition, as explained in ACM/619, work was being undertaken in Scandinavia on heat-treating chicken carcasses. However, there was still consumer demand for fresh chicken. Mr Kyriakides said that Sainsbury's had unsuccessfully investigated the feasibility of producing pasteurised raw chicken.

15.6 The Chairman said that the presence of *E. coli* in pasteurised milk was unacceptable. While not all *E. coli* were pathogenic, the organism's presence in milk gave serious cause for concern. Mr Kyriakides said that coliforms were used as an indicator of under processing or post-process contamination and might not, of themselves, constitute a hazard.

15.7 Professor Hunter explained that the presence of sulphite-reducing bacteria had a specific application, for example as an indicator of faecal contamination of water that had been stored over long periods in eg aquifers. The age of such waters meant that traditional indicators of faecal contamination like *E. coli* were likely to have died off, and sulphite-reducing clostridia were used instead. They would not be an appropriate indicator for faecal contamination in food because of the comparative short time scale over which food rotted.

15.8 Professor Hunter said that *Helicobacter pylori* was one of the most hazardous organisms world-wide and a major cause of cancer globally, although not in the UK. Information about transmission was incomplete although there was a good deal of evidence that spread was person-to-person via vomitus. There was also good epidemiological evidence of waterborne transmission. There appeared to be no major animal reservoir and food appeared not to be a major risk factor, other than through infected food handlers.

15.9 **Mrs Sheila Lakes** expressed disappointment that only 34% of approved UK dairy establishments had participated in the FSA's milk survey and

[1] Fujimura S, Kawamura T, Kato S, Tateno H, Watanabe A. Detection of *Helicobacter pylori* in cow's milk. Lett Appl Microbiol 2002; **35 :** 504-507.

asked whether such surveys should be compulsory. She also drew attention to a report in the national press that chickens on retail sale had been found to contain excessive amounts of water and wondered what the FSA was doing about it.

15.10 The Chairman said that the milk survey had been undertaken to gather information, not as an enforcement measure. As such, it had been voluntary and, in those circumstances, a response rate of 34% was respectable. The Chairman said that the question of the water content of poultry meat was not a matter for the ACMSF, and should be addressed to the FSA. He stressed that the Committee was, in any event, completely independent of the Agency and could not answer questions of FSA policy.

ANNEX I

LIST OF MEMBERS OF THE PUBLIC AND OTHERS ATTENDING THE ACMSF'S 47TH MEETING

Mr Phil Banks	DEFRA
Ms Rosemary Brook	National Dairy Council
Ms Sinead Guckian	Safe Food
Mr John Harvey	BBC
Mr Simon Kane	Kraft Foods (UK) Ltd
Dr Ed Komorowski	Dairy Industry Association
Mrs Sheila Lakes	Zhitz International
Dr Christine Little	Public Health Laboratory Service
Mrs June Lock	FSA
Mr Alan Long	VEGA
Dr Barbara Lund	Institute of Food Science and Technology
Mr Alan Lyne	ADAS
Ms Helen McDermott	Food and Drink Federation
Dr Sonia Molnar	FSA
Ms Gemma Mulholland	DEFRA
Mrs Florence Opesan	FSA
Mr Alan Proctor	Zhitz International
Mr Shaun Whelan	Food Standards Agency
Mr Michael Wood	Norpath Laboratories Ltd