ACM/618

ADVISORY COMMITTEE ON THE MICROBIOLOGICAL SAFETY OF FOOD

Campylobacter Working Group : visits to Denmark and Norway

The Chairman wrote to the Acting Chief Executive of the Food Standards Agency on 24 January 2003 conveying the impressions drawn from the fact-finding mission to Denmark and Norway by 3 members of the *Campylobacter* Working Group in November 2002.

A copy of the Chairman's letter is attached for information.

Secretariat
March 2003

Advisory Committee on the Microbiological Safety of Food

Administrative Secretary, Room 813C, Aviation House
125 Kingsway, London WC2B 6NH
Telephone : 0207-276-8951 Fax : 0207-276-8907
E. mail : colin.mylchreest@foodstandards.gsi.gov.uk

Dr J R Bell
Acting Chief Executive
Food Standards Agency
Aviation House
125 Kingsway
London
WC2B 6NH

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, operated by Danpo, similar to most in the UK. Danpo do, 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. Danpo 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