An Investigation of the Prevalence of *Campylobacter* spp. in Flies (Diptera) on Broiler Farms.


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Introduction

- It has been hypothesised that the emergence of fly populations and their ingress into broiler houses over the spring and summer periods contribute to the transmission and infection of broiler chickens with *Campylobacter* spp.
- Whilst data are available from Denmark to support this, there is little data available in the UK on the prevalence of *Campylobacter* spp in flies on and around broiler farms.
- To investigate this, flies were caught around broiler houses on four farms in the North West of England, identified and cultured for *Campylobacter* spp.

Aim of the study

- To investigate the prevalence of *Campylobacter* spp caught on broiler farms in the North West of England.
- To correlate the prevalence in flies with colonisation of broiler flocks with *Campylobacter* spp.

Methods

- Live flies were collected individually in sterile bags on four standard broiler farms, July to September 2011 by repeat visits to farms (once or twice weekly).
- In the laboratory they were chilled then identified to at least the family level.

**Sampling**

- Insert plastic bag into jar
- Catch fly
- Seal bag
- Transport to lab
- Place in freezer (-18°C) for 1h
- Identify fly to family level (species if possible) under microscope

**Results**

- In total, 902 flies were caught and cultured for *Campylobacter* spp.
- Wide diversity of flies caught on farms, as illustrated in Table 1. with 695/902 flies only associated with faeces or carrion.
- 2/902 flies were positive for *Campylobacter* spp.
- The flies were caught on two separate farms
- Broilers on those farms were negative for *Campylobacter* spp.

Discussion and further work

- A high diversity of flies was caught on broiler farms, however the prevalence of *Campylobacter* in flies was very low (0.22%).
- This compares to 8.2% in studies in Denmark, however the diversity of flies tested was much lower with a greater number of house flies sampled than in this study (Hald et al, 2004).
- The chilling of the flies to allow identification may have reduced the recovery of *Campylobacter* spp., however experimental inoculation of the surface of flies and chilling for one hour did not prevent recovery of *Campylobacter* spp.
- However, although the risk may be low, work is needed to determine the number and types of flies entering broiler house and work in Denmark has estimated that up to 30, 000 flies enter a broiler house during one crop cycle (Hald et al, 2004).
- More targeted ways of catching flies is needed on farms to target species, which are associated with carrion and faeces, and therefore more likely to carry *Campylobacter* spp.

Table 1: Number of flies in family and species captured in broiler house surroundings (<10 m from broiler house) from July to September 2011, and the number of *Campylobacter* spp. positive in parentheses.

**References**


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