Flying insects and Campylobacter

Campylobacter in flies

Flies of the Muscidae family forage on all kind of faeces – various fly species have different preferences. M. domestica prefer pigs, horses and cattle faeces, animals which are all known to frequently excrete Campylobacter. As a result, the insects pick up pathogenic microorganisms, which may collect on their bodies or survive passage through the fly gut.

Campylobacter and other pathogens are then easily transferred to other surfaces, for instance peoples food – or to broiler houses where they may be swallowed by chickens or contaminate the environment. On a large material of several species of flies collected outside broiler houses, merely ~1% of the flies were found Campylobacter positive. However, the prevalence varied considerably with fly species, time of the year, and availability of Campylobacter sources. Influx of flies to broiler houses As the influx of flies to broiler houses may be counted in thousands per broiler rotation during summer periods, even a low prevalence of Campylobacter positive flies constitute a risk of introduction of Campylobacter to the chickens. M. domestica – the house fly is the most important vector fly for Campylobacter transmission according to our results. Fly control on broiler farms against Campylobacter To evaluate the effect of fly screens as a preventive measure against Campylobacter introduction, we have conducted a case-control study. In fly screened houses, the Campylobacter prevalence was reduced from ~50 % to 15% at slaughter.

The statistical analysis identified the fly screen as the significant protective factor. Length of the vector period of house flies for Campylobacter. It would be of interest to know, for how long swallowed Campylobacter survive in the fly gut, or even colonize the intestine. According to our findings the vector period was rather short, as even high doses of Campylobacter remained viable for less than 24 hours in flies, when they were incubated at temperatures from 20 ºC and higher. Lower temperatures are less- or irrelevant, as flies become slow or immobile below 15-20 ºC.

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