

Exposure Assessment of Occupational Leptospirosis

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The leptospirosis incidence increased in New Zealand recently, with 64.7% of cases being reported in meat processing workers in 2004. While porcine and bovine carcasses are known exposure sources, little is known about sheep and deer. The objective of this study was to assess the exposure risk of meat workers to *Leptospira borgpetersenii* serovar Hardjobovis and *Leptospira interrogans* serovar Pomona from randomly sampled sheep and deer at slaughter. Based on 30 and 15 carcasses sampled from slaughter lines of sheep and deer, respectively, 44.2% sheep lines and 84.7% deer lines had one or more sero-positive carcasses. Clustering of sero-positives in lines was low in sheep and high in deer. The corresponding proportions of individual carcasses were 5.7% for sheep and 78.1% for deer. The total isolation rates of live organisms from kidneys were 20.9% and 1.0% from seropositive and sero-negative sheep carcasses, respectively, compared to 22.1% and 15.2% from deer. The overall proportion of carcasses shedding live *Leptospira* was 2.4% in sheep (95% stochastic interval 1.4–3.7%) and 21.3% in deer (95% stochastic interval 15.5–26.2%). At average processing rates of 1123 sheep and 200 deer carcasses/day, this suggested that each worker processing sheep was exposed to 5–27 (95% stochastic confidence interval 1–47) and that of deer to 21–42 (95% stochastic interval 13–59) shedding carcasses/day respectively. Shedding rate was much greater in sheep sampled from a farm with an apparent leptospirosis outbreak. This study suggested a moderate exposure risk from processing sheep and a high risk from deer.