

A survey of badger activity carried out in high and low TB cattle herd incidence areas

Menzies F.D., Abernethy D.A., Stringer L.A., Honhold N.

Veterinary Epidemiology Unit, Veterinary Service, Department of Agriculture and Rural Development (DARD), Northern Ireland. Email: fraser.menzies@dardni.gov.uk

Introduction

The association between badger population density and activity and infection of cattle with *Mycobacterium bovis* is an area currently under close examination. To examine this association, a field survey of badger activity was carried out to evaluate differences between two areas with different levels of bovine tuberculosis and to assess the awareness and perceptions of herd keepers in relation to badgers. A random selection of herd keepers was interviewed and their farm land surveyed for the presence of badger activity.

Method

- Cross-sectional survey with random selection (participation voluntary)
- Initial telephone questionnaire, with a follow up personal interview and a survey of the farm land
- Herd keepers participation was sought during the telephone interview and information was collected in relation to badger and badger sett sightings over the previous two years
- During the farm survey, the presence of badger setts was recorded and whether the sett was active or inactive along with signs of badger activity
- The survey end point was the discovery of an active badger sett
- Annual bovine TB herd incidence areas were 15.8% and 3.7% for the high (**H**) and low (**L**) incidence areas, respectively

Results

- Participation was high in both areas (>80% with H = 193 farms; L = 168 farms)
- Farm area (H = 34.4; L = 38.4 hectares) and herd size (83 and 78 cattle, respectively) were similar
- Farm survey showed farms in area H had:
 - Higher levels of active badger setts (56% v 43%; $P < 0.05$; χ^2 test)
 - Higher levels of badger activity (77% v 61%; $P < 0.01$; χ^2 test)
- 74% of badger setts were found in hedges
- Positive predictive value for a herd keeper correctly stating a badger sett present on the land was 97%
- Negative predictive value for a herd keeper correctly stating that there were no badger sett was 23% (H) & 43% (L)



Inactive badger sett entrance

Photo by Kathryn McBride

Conclusions

- There is evidence of increased badger activity in the H area.
- Herd keepers can accurately state if badger setts are present on their land, however, the reverse is an invalid assumption (i.e. badger setts may be present even if the herd keeper says there are none on their land).