

# EVALUATION OF HOUSING AS A MEANS TO PROTECT CATTLE FROM *CULICOIDES* BITING MIDGES, THE VECTORS OF BLUETONGUE VIRUS

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Light-trap catches of *Culicoides* biting midges were compared inside and outside animal housing, in the presence and in the absence of cattle. A three-time replicated 4x4 Latin square design was used at four farms in Bala, North Wales, over 12 nights in May and June; the experiment was repeated in October. In the two studies, over 70,000 and over 4500 *Culicoides* were trapped of which 93% and 86%, respectively, belonged to *C. Obsoletus* complex. Across the four farms, in May and June, the presence of cattle increased catches of *C. obsoletus* by 2.3 times, and outside traps caught them 6.5 times more than inside traps. Similar patterns were apparent in October, but the difference between inside and outside catches was reduced. Catches were strongly correlated with minimum temperature and maximum

wind speed, and these two variables explained a large amount of night-to-night variation in catch. Outside catches were reduced to a greater extent than inside catches by colder minimum temperatures and stronger maximum wind speeds. These conditions occurred more frequently in October than in May and June, thereby suppressing the outside catches more than the inside catches, and reducing the apparent degree of exophily of *C. obsoletus* in autumn. The results suggest that the risk of animals receiving bites from *C. obsoletus* is reduced by housing at both times of year, but the benefit would be greatest on warm, still nights when outside catches are at their greatest.

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