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# A Case-Control Study on the Association of Selected Risk Factors with the Occurrence of Bovine Tuberculosis within Selected Areas in the Republic of Ireland

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## Introduction

In a recent study carried out on herd breakdowns in the East Offaly area, an association was found between the tuberculosis status of herds and their distance to badger setts and/or distance to caught badgers (Dolan et al., 1994). The purpose of the present study was to examine the role of contact with badgers as well as exposure to other possible risk factors. These included herd size, breed and age structure, purchasing cattle, contiguity with other infected herds, history of previous breakdowns and the retention of cattle from previous breakdowns.

The characteristics of one hundred herds which had a confirmed outbreak of tuberculosis at a herd test in 1988 were compared to those from an equal number of herds which passed at least one tuberculin test during that year. The study base consisted of 1,379 herds mainly from the eastern part of County Offaly. The data were analysed at both herd and animal level.

## Results

Factors that were found to be associated with an increased risk of tuberculosis breakdowns at the herd level in this area were (i) the total number of animals in the herd and (ii) the restriction of a contiguous herd for tuberculosis within a period of six months prior to or following the herd under study.

A number of factors were also found to be significantly associated ( $P < 0.05$ ) with an animal having an increased risk of failing a tuberculin test. For animals that were comparable on all factors in the model except animal breed,

the relative odds of failing a tuberculin test associated with being a Friesian was 4.08.

That is, after adjusting for all other variables in the model, Friesian cattle were 4 times more likely to fail a tuberculin test than the referent breed, Charolais. In relation to animal type, cows, heifers and bullocks were 6.9, 13.9 and 7.4 times, respectively, more likely to fail a tuberculin test than the referent animal type, calf. Cattle that had been purchased since the previous herd test were less likely to fail a tuberculin test compared to cattle that had been present at the time of the preceding herd test.

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## Reference

Dolan, L.A., Hammond, R.F., Eves, J.A., Griffin, J.M., Martin, S.W. and Collins, J.D. 1994. The association between the bovine tuberculosis reactor status of herds in East Offaly county, and the distance to badger setts and badgers, 1988-1992. In press.

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