# TUBERCULOSIS BREAKDOWN IN CATTLE HERDS IN NEW ZEALAND
## A CASE-CONTROL STUDY

D.U. PFEIFFER, S. ZEWDIE, R.S. MORRIS AND T.J. RYAN[1]
Department of Veterinary Clinical Sciences,
Massey University, Palmerston North, New Zealand
1 Ministry of Agriculture and Fisheries, Hamilton, New Zealand

In New Zealand tuberculosis infection in the common brushtail possum (*Trichosurus vulpecula* Kerr) is a major wildlife reservoir of infection for cattle. A case-control study was conducted in a region where infection has recently become established in possums. The objective was to identify risk factors which are associated with the establishment of infection in herds (breakdowns).

Ninety five case herds (newly infected with tuberculosis within the last five years) were matched with 95 nearby control herds which had the same type of cattle production system (management controls). A further 95 herds were chosen as a second control group by randomly selecting rural properties from the same county (random control). A questionnaire was administered to the herd manager. It covered the production system on the farm, the geographical characteristics of the property, types of livestock owned, movements of animals on to and off the farm, the management style of the farmer as expressed in personality characteristics, and the knowledge and attitudes of the farmer concerning tuberculosis.

Case herd managers were less favourably inclined towards the use of records than controls, and considered themselves less favourably disposed towards new ideas than did control farmers. Case managers favoured working with livestock in preference to machinery, to a greater extent than controls. Case managers considered themselves less talkative, less sociable and more persevering than did controls. Both control groups, chosen on different criteria, had remarkably similar personality profiles. Case farms on average owned a lower proportion of young stock than did controls, but were more likely to have bought stock from more than three different herds than were controls. Multivariate logistic regression and logistic path analysis have been used to explore in more detail the relationships among various factors which may influence the entry of infection to herds.