

Farmers' Beliefs about the Effectiveness of Biosecurity Measures are the Strongest Predictor of bTB Prevention Behaviour^{1, 2}

Deirdre A. Robertson*, Ciarán Lavin, Alexandros Papadopoulos, and Peter D. Lunn

ESRI Research Bulletins provide short summaries of work published by ESRI researchers and overviews of thematic areas covered by ESRI programmes of research. Bulletins are designed to be easily accessible to a wide readership.

INTRODUCTION

Bovine tuberculosis (bTB) remains endemic in Ireland. Despite decades of progress, herd incidence remains above the EU threshold for the status of “officially tuberculosis free.” Eradication programmes rely on routine testing, movement controls, wildlife management and farm-level biosecurity. However, little is known about how farmers perceive these measures and what drives them to adopt, or not adopt, recommended practices. This study used interviews and a survey experiment to identify the beliefs, perceptions and knowledge most closely associated with on-farm biosecurity behaviour.

DATA AND METHODS

The research had two parts: qualitative interviews and a survey experiment.

We conducted semi-structured interviews with 60 farmers from different herd types and across different regions of Ireland. These interviews explored perceptions of bTB, experiences of outbreaks, barriers to eradication, attitudes to biosecurity, and views of official communications.

The findings were used to design a survey experiment to test what predicts whether farmers introduce biosecurity measures onto their farms. We measured the level of biosecurity on each farm using a specially designed series of questions. We then measured whether the farmers were aware of actions they could take to

¹ This Bulletin summarizes the findings from: Robertson D.A., Papadopoulos A., Lavin, C., and Lunn P.D. “Linking farmers’ views of bovine tuberculosis to biosecurity behaviours”, *Journal of Rural Studies*. Available at:

<https://doi.org/10.1016/j.jrurstud.2026.104028>

* Correspondence: Deirdre.Robertson@esri.ie

² This research was funded by the Department of Agricultural, Food and the Marine.

reduce risk of bTB, how effective and worthwhile they thought those actions would be, and how much they knew about how bTB is spread. Participants were 824 farmers in Ireland taken from a probability-based sample split across herd types.

RESULTS

A dominant theme from the interviews was the mental toll that bTB takes as well as a sense of fatalism about preventing the disease from spreading. There was some frustration with what were perceived to be long or overly complex official communications. Some farmers queried the effectiveness of some recommended measures.

The survey found that the strongest predictor of a farmer's biosecurity score was how effective they believed the recommended actions to be. Knowledge of bTB, awareness of the recommended actions and previous experience with bTB were not associated with biosecurity behaviour.

Actions to keep bTB from entering the farm were perceived to be most effective, including keeping a closed herd, stopping cattle accessing badger setts, fencing boundaries and buying from herds with a recent TB test. The top-ranked barriers to eradication were perceived to be too little culling of wildlife and purchasing from herds with a history of TB. Most farmers in the sample were pessimistic about the likelihood that bTB would be eradicated in the next 10 years. Most (80%) of those sampled thought that it should be mandatory to provide information on the bTB history of the herd when selling.

An embedded experiment found that a combination of different actions, including changes to behaviour (avoiding sharing machinery and buying cattle once per year), infrastructure (raising drinking troughs, securing housing from wildlife and double fencing), and knowledge (finding out the bTB herd history before purchasing), were perceived to be the most worthwhile and risk-reducing measures.

CONCLUSIONS

The study shows that belief in the effectiveness of recommended biosecurity measures has a stronger link to biosecurity behaviours than simply knowledge or awareness. Communications could focus on evidence-based narratives about the effectiveness of recommended measures while avoiding lengthy or overly technical material. Supporting peer-to-peer engagement and transparency around herd bTB history could also be helpful.