

Farmers' Views on Cattle and Badger Vaccination to Control Bovine TB



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INTRODUCTION

Bovine tuberculosis (bTB) affects several member states of the EU, including the UK. Northern Ireland (NI) is one region of the UK with intensive cattle production and a current bTB herd incidence of 7.3% (DARD, 2013). Despite a statutory control programme, disease eradication remains elusive.

European badgers (*Meles meles*) are a wildlife reservoir of the disease, and badger vaccination is one possible strategy for reducing transmission to cattle (Robinson *et al.* 2012). A parenteral BCG vaccine is already being deployed in some parts of the UK. Research continues to develop a suitable TB vaccine for cattle (Siddiqui *et al.* 2012), but any future use would require changes in EU legislation.

As part of an ongoing social science study of bTB control in NI, farmers were interviewed on TB vaccination of cattle and badgers, and its potential usefulness in the drive towards future disease eradication.



METHODS



Vaccination was discussed in 27 semi-structured interviews which were conducted between September 2012 and January 2013 involving dairy and beef farmers from both high and low bTB incidence areas of NI. They formed a sub-sample of a larger group of 70 farmers and vets interviewed for the overall study, and these are preliminary findings.

The participants were specifically asked about, or had spontaneously offered, their opinions on vaccination as part of a wider-ranging interview on bTB. The interviews were audio-recorded, fully transcribed using F4 transcription software (audiotranskription.de), and coded using a grounded theory approach to qualitative analysis (Bryman, 2008).

RESULTS

• Awareness of vaccination to control disease is high amongst farmers in NI, and it is widely used to control a range of endemic diseases (e.g. BVD, IBR, Leptospirosis), especially in the dairy industry: 'We vaccinate for nearly everything under the sun' (Dairy farmer A11).

• Despite the acceptance and use of vaccination, knowledge about TB vaccination was generally low, with a typical response being: '[I have] a very minimal amount of knowledge about that. I have seen some of it on TV ... I would still have to ask a lot of questions about vaccination' (Dairy farmer A18).

• Several farmers were keen to see a cattle TB vaccine being introduced, and were puzzled as to why it had not been deployed already: 'They're [vets] getting thousands of pounds for testing cattle ... now if that was put into a vaccine ... it can't be a very hard thing to do?' (Dairy farmer A5). They linked this opinion to their experience of other cattle vaccines and human BCG: 'I often wonder ... you vaccinate for everything else, and humans are vaccinated for TB...' (Beef farmer A21).

• A few were more cautious, and believed that it may hinder future export markets: 'The answer ... is to vaccinate cattle, but then the EU won't allow us to sell them ... we are under rules and regulations all the time.' (Beef farmer A53). 'I would be aware that it would maybe downgrade your product ... we are dependent on 80% of that milk being sold all over the world, and that has to be taken into consideration.' (Dairy farmer A23).

• The farmers had very strong agreement on the need for action to control the disease in wildlife, but there was scepticism about the usefulness of badger vaccination: 'It's all to be proved, or all to be tried. There are no answers' (Beef farmer A7). Culling was more strongly supported as an alternative control measure.

• Doubts were expressed about the feasibility of locating and trapping badgers to administer vaccine: 'Some of these so-called experts say that the badgers should be vaccinated, but I don't think that's practical ...' (Dairy farmer A9). There was a belief that it was necessary to vaccinate all badgers to have an effect: 'How can you go out there and try and trap one of them, never mind all of them, to vaccinate them?' (Dairy farmer A3).

• Some farmers were concerned about whether the vaccine would be effective in preventing transmission to cattle, especially if badgers were already infected: 'If a badger is rotten with TB and it's spreading it round, what good is vaccinating it?' (Dairy farmer A24).

• One interviewee saw badger vaccination as a deception and 'a PR thing' (Beef farmer A53) to deflect attention away from culling, but others saw it as the way forward given public opposition to culling: 'If someone was able to tell me that it is a good vaccine and it works, I think that is an easier route to take.' (Dairy farmer A50).

• In the midst of the angst and serious concern expressed about bTB, there was still room for humour: 'Interviewer: If there was a vaccine, who should pay for it? Farmer: The badgers' (Dairy farmer A6).

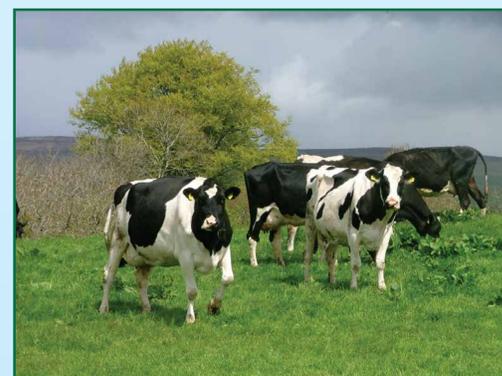


DISCUSSION

Previous research in Great Britain (GB) has demonstrated that farmers would be willing to pay for a cattle TB vaccine, but there was doubt as to whether it was the best solution to the problem, and they were also concerned about whether it would affect trade (Bennett & Balcombe, 2012).

Enticott *et al.* (2012) found that farmers in GB were cautious and lacked knowledge of badger vaccination. Sixty-one per cent of those surveyed doubted its practicality and the same percentage favoured culling over vaccination.

The findings from this research in NI broadly concur with these studies, and demonstrate that there is a knowledge deficit amongst farmers about TB vaccination. Opinions range between cautious optimism and deep scepticism about the benefits of these strategies. Knowledge transfer with the presentation of more scientific evidence would be necessary to raise awareness and convince farmers of the merits of implementing a TB vaccination policy in either species in the future.



REFERENCES

- Bennett, R. & Balcombe, K. (2012) Farmers' willingness to pay for a tuberculosis cattle vaccine. *Journal of Agricultural Economics*, 63, 408-424.
- Bryman, A. (2008) *Social Research Methods*. 3rd edition. Oxford: Oxford University Press.
- DARD (2013) Tuberculosis disease statistics in Northern Ireland – December 2012. Available online at: <http://www.dardni.gov.uk/index/dard-statistics/animal-disease-statistics/pubs-tb-stats-dec-2012.htm>. Accessed 22 February 2013.
- Enticott, G., Maye, D., Ilbery, B., Fisher, R. & Kirwan, J. (2012) Farmers' confidence in vaccinating badgers against bovine tuberculosis. *Veterinary Record*, 170, 204. doi: 10.1136/vr.100079.
- Robinson, P.A., Corner, L.A.L., Courcier, E.A., McNair, J., Artois, M., Menzies, F.D. & Abernethy, D.A. (2012) BCG vaccination against tuberculosis in European badgers (*Meles meles*): a review. *Comparative Immunology, Microbiology and Infectious Diseases*, 35, 277-287.
- Siddiqui, N., Price, S. & Hope, J. (2012) BCG vaccination of neonatal calves: Potential roles for innate immune cells in the induction of protective immunity. *Comparative Immunology, Microbiology and Infectious Diseases*, 35, 219-226.

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