

Guiding animal health policy in Ireland and across the European Union

Professor Simon More

UCD School of Veterinary Medicine



SCIENTIFIC



POLITICAL



SOCIAL

SUMMARY

Professor Simon More is Director of UCD's Centre for Veterinary Epidemiology and Risk Analysis (CVERA), which conducts scientific research to support policy decision-makers on a diverse range of issues relevant to animal health and welfare in the Irish agri-food industry. Bovine tuberculosis (bTB) is a key area of research focus.

He also chairs the Animal Health and Welfare (AHAW) Panel of the European Food Safety Authority (EFSA), which develops scientific opinions in support of the European Commission. The AHAW panel primarily influences policy decision-making within the EU, however these decisions are also relevant to all countries that seek to import animals and animal products into the EU.

To put this policy work in context, the UK Department for Environment, Food and Rural Affairs (DEFRA) has estimated the cost of bTB control in England at £1 billion over the next 10 years without taking further action, and the cost of bTB breakdown on a farm at £34,000. In Ireland the cost was estimated at €63m in 2010/11.

The underpinning research had wider impact in terms of generating significant public debate and enhancing public engagement. This is evidenced by the large number of social media mentions about Professor More's work with many of his individual papers being in the top 5% of all research outputs ever tracked by Altmetric. Professor More's papers account for over 50% of University College Dublin's total mentions in international policy documents.

The beneficiaries of the research undertaken by Professor Simon More and his team include farmers, consumers and the food industry, with positive environmental impact being an indirect benefit of the research. The reach of this impact is wide within the European Union, which has a population of 508 million people and 330 million livestock.

Of all mentions to policy documents that reference UCD publications, over 50% are from publications co-authored by Professor Simon More.

DESCRIPTION

Policies play a central role in modern society, as principles to guide the actions of governments and other bodies in achieving rational outcomes. Many factors shape policy decisions, including the scientific evidence, the finances available, and political considerations.

The Centre for Veterinary Epidemiology and Risk Analysis (CVERA) conducts scientific research – *the scientific evidence* – in animal health and welfare. This work influences policy decision-making within Ireland, by the Irish government and other national bodies, and also by the European Commission.





The Centre for Veterinary Epidemiology and Risk Analysis (CVERA) conducts scientific research in animal health and welfare. This work influences policy decision-making within Ireland, by the Irish government and other national bodies, and also by the European Commission.

CVERA addresses a wide range of issues, constraints in the eradication of bovine tuberculosis in cattle through to an improved understanding of biosecurity and disease threats within the farmed salmon industry.

CVERA has played a vital role in the establishment and ongoing success of Animal Health Ireland, a national partnership organisation that tackles animal health issues in Ireland that are outside the remit of government responsibility. The research of CVERA is generally highly applied and is undertaken in response to a clear policy need.

Professor More also chairs the Animal Health and Welfare Panel of the European Food Safety Authority (EFSA) where scientific evidence from EU member states and elsewhere is reviewed and distilled, to assist with policy decision-making by the European Commission.

DETAILS OF THE IMPACT

The work of CVERA is central to efforts towards superior product quality and animal health and welfare in the Irish agri-food industry. Agri-food is Ireland's primary indigenous industry, with exports of €10 billion in 2015.

Animal health and welfare policy in Ireland

Research from CVERA directly contributes to policy decision-making in animal health and welfare policy by the Irish government. Key areas of impact include bovine tuberculosis (bTB), animal health surveillance, cadmium mitigation, on-farm antimicrobial usage and the management of on-farm animal welfare incidents (More and Collins, 2016).

As illustrations:

- The cost of the national bovine tuberculosis (bTB) eradication programme is substantial (€63 million in 2010/11; Abernethy et al., 2013). In some areas in Ireland, bTB persists in specific herds and localities. bTB persistence has been an area of intensive research by CVERA and collaborating organisations, and there is improved understanding of the relative importance of different sources of infection (Griffin et al., 2005; More and Good, 2015). As prevalence falls, this problem can be increasingly attributed to the presence of infected cattle that test negative to current diagnostic methods. National policy is adapting to new scientific knowledge, and field veterinarians are increasingly aware of the potential for residually infected animals during the management of known infected herds.
- Cadmium (Cd) is an important public health hazard. Research conducted by CVERA has shown that Cd in bovine kidneys can exceed the current EU maximum limit of 1 mg/kg in older animals grazed in areas in Ireland with naturally occurring high Cd levels in soils (Canty et al., 2014). Kidneys of most cattle under three years of age will conform with EU requirements. As a direct consequence of this research, the Irish government implemented a policy to exclude kidney from selected animals from the food chain.

The research of CVERA is generally highly applied and conducted in response to a clear policy need.

Animal Health Ireland (AHI)

The work of CVERA has been central to the establishment and ongoing success of Animal Health Ireland (AHI), a national partnership organisation tackling animal health issues in Ireland, which is outside the remit of government responsibility. The case for AHI's establishment was made in key papers from CVERA (More, 2007, 2008). Since AHI's establishment in 2009, CVERA has conducted multiple studies in response to policy needs in most of AHI's programme areas, including:

- The national Bovine Viral Diarrhoea (BVD) eradication programme (Graham et al., 2016)
- CellCheck, the national mastitis control programme (Devitt et al., 2013)
- Johne's Disease (JD) voluntary control programme (More et al., 2013)

The potential national impact of AHI's work is substantial. Soon after AHI's formation, experts highlighted the ongoing cost and adverse impact of key infectious diseases of cattle, and the future threat to international perception and market access if no action were taken to address these diseases (More et al., 2010). In 2012, the estimated cost of BVD to Irish farmers was €102 million annually. These costs can be entirely avoided once BVD has been eradicated, hopefully by 2020.

Resolution of a mastitis problem in a dairy herd (leading to a somatic cell count [SCC] reduction from >400,000 to <100,000 cells/mL) is estimated to increase overall farm returns by 4.8 c/L, including the farm and processor related effects. Nationally, if the SCC was reduced by 10%, it would be worth €37.6 million annually for the Irish dairy industry.

Animal health and welfare policy in the European Union

The work of the Animal Health and Welfare Panel of European Food Safety Authority (EFSA) is focused in three broad areas:

- exotic and emerging animal health threats
- ongoing (endemic) animal health challenges
- animal welfare.

Panel outputs are developed specifically to support policy decision-making by the EU Commission. The potential impact of this work is substantial. To illustrate:

- Scientific opinion in support of African Swine Fever (ASF) control (including EFSA Panel on Animal Health and Welfare (AHAW), 2015). ASF is an extremely damaging disease of pigs. It entered the EU in 2014, and is currently present in domestic pigs and wild boar in four member states with a combined domestic pig population of >12 million animals.
- A scientific opinion in support of bTB control in Great Britain, in particular the use of vaccination in cattle (EFSA Panel on Animal Health and Welfare (AHAW), 2013). bTB control costs in Great Britain were estimated at £152 million in 2010/11 (Abernethy et al., 2013).
- Scientific opinion in support of improved methods for practical on-farm animal welfare assessment throughout the EU (including EFSA Panel on Animal Health and Welfare (AHAW), 2012). Improved animal welfare standards impact on the welfare of animals within the EU, but also in all countries seeking to import animals and animal products into the EU.

In addition, in other roles within EFSA, Professor More is contributing to working groups focusing on the impact of multiple stressors on bee colony health, and on strategies to sustainably reduce the on-farm use of antimicrobials in animal production.

RESEARCH REFERENCES

Abernethy, D.A., Upton, P., Higgins, I., McGrath, G., Goodchild, T., Rolfe, S., Broughan, J., Downes, S., Clifton-Hadley, R., Menzies, F., de la Rua-Domenech, R., Blissit, M., Duignan, A., More, S.J (2013) 'Bovine tuberculosis trends in the United Kingdom and Republic of Ireland, 1995 to 2010'. *Veterinary Record*, 172 (12):312. [doi:10.1136/vr.100969] *

Canty, M.J., Scanlon, A., Collins, D.M., McGrath, G., Clegg, T.A., Lane, E., Sheridan, M.K., More, S.J., 2014. Cadmium and other heavy metal concentrations in bovine kidneys in the Republic of Ireland. *Science of the Total Environment* 485-486, 223-231. [doi:10.1016/j.scitotenv.2014.03.065]

Devitt, C., McKenzie, K., More, S.J., Heanue, K., McCoy, F., 2013. Opportunities and constraints to improving milk quality in Ireland; enabling change through collective action. *Journal of Dairy Science* 96 (4), 2661-2670. [doi:10.3168/jds.2012-6001]

EFSA Panel on Animal Health and Welfare (AHAW), 2012. Scientific opinion on the use of animal-based measures to assess welfare of dairy cows. *EFSA Journal* 10, 2554. [doi:10.2903/j.efsa.2012.2554]

EFSA Panel on Animal Health and Welfare (AHAW), 2013. Scientific opinion on field trials for bovine tuberculosis vaccination. *EFSA Journal* 11 (12), 3475. [doi:10.2903/j.efsa.2013.3475]

EFSA Panel on Animal Health and Welfare (AHAW), 2015. Scientific opinion on African Swine Fever. *EFSA Journal* 13 (7), 4163. [doi:10.2903/j.efsa.2015.4163]

Graham, D.A., Clegg, T.A., Thulke, H.-H., O'Sullivan, P., McGrath, G., More, S.J., 2016. Quantifying the risk of spread of bovine viral diarrhoea virus (BVDV) between contiguous herds in Ireland. *Preventive Veterinary Medicine* 126, 30-38. [doi:10.1016/j.prevetmed.2016.01.017]

Griffin, J.M., Williams, D.H., Kelly, G.E., Clegg, T.A., O'Boyle, I., Collins, J.D., More, S.J., 2005. 'The impact of badger removal on the control of tuberculosis in cattle herds in Ireland'. *Preventive Veterinary Medicine*, 67 (4):237-266. [doi: 10.1016/j.prevetmed.2004.10.009] *

More, S.J., 2007. Shaping our future: animal health in a global trading environment. *Irish Veterinary Journal* 60, 540-545. [doi:10.1186/2046-0481-60-9-540]

More, S.J., 2008. A case for increased private sector involvement in Ireland's national animal health services. *Irish Veterinary Journal* 61, 70-78. [doi:10.1186/2046-0481-61-2-92]

More, S.J., Collins, D.M. (eds), 2016. *Biennial Report, 2014-15*, The Centre for Veterinary Epidemiology and Risk Analysis, The TB Diagnostics and Immunology Research Centre, The Badger Vaccine Project. University College Dublin and the Department of Agriculture, Food and the Marine, Dublin. 114 pp. ISBN 978-1-910963-01-2. http://www.ucd.ie/t4cms/Biennial_Report_20142015.pdf

More, S.J., Good, M., 2015. Understanding and managing bTB risk: Perspectives from Ireland. *Veterinary Microbiology* 176, 209-218. [doi:10.1016/j.vetmic.2015.01.026]

More, S.J., McKenzie, K., O'Flaherty, J., Doherty, M.L., Cromie, A.R., Magan, M.J., 2010. Setting priorities for non-regulatory animal health in Ireland: results from an expert Policy Delphi study and a farmer priority identification survey. *Preventive Veterinary Medicine* 95, 198-207. [doi:10.1016/j.prevetmed.2010.04.011]

More, S.J., Sergeant, E.S.G., Strain, S., Kenny, K., Cashman, W., Graham, D., 2013. The effect of alternative testing strategies and bio-exclusion practices on Johne's disease risk in test-negative herds. *Journal of Dairy Science* 96 (3), 1581-1590. [doi:10.3168/jds.2012-5918]

Websites

[Professor Simon More - Full Research Profile](#)
[Centre for Veterinary Epidemiology and Risk Analysis \(CVERA\)](#)
[Animal Health Ireland \(AHI\)](#)
[European Food Safety Authority \(EFSA\)](#)
[Animal Health and Welfare Panel of European Food Safety Authority](#)
[Controlling bovine TB in the UK by controlling badger numbers \(REF 2014 Case Study\)](#)
[Altmetric](#)

* As of November/December 2015, this highly cited paper received enough citations to place it in the **top 1% of the academic field of Plant & Animal Science based on a highly cited threshold for the field and publication year.** Data from Thomson Reuters Essential Science Indicators.