



2012-12-29-196 CGN minireviews on mycobacteria: (08) A call for action against a proposal to remove paratuberculosis from the Terrestrial Animal Health Code

To: (04) Food-borne, water-borne and air-borne diseases; (05) Zoonoses, general; (08) Mycobacterial diseases; (22) Veterinary administration; (27) Scientific information

CGN minireviews on mycobacteria as a public health risk

A new series, aimed at stimulating discussion on published literature dealing with the threat to public health posed by mycobacteria. Although some information of global significance has been known for decades, the risk posed by mycobacteria remains underestimated.

Prepared by the [Reference Laboratory for Paratuberculosis and Avian Tuberculosis](#) of the World Organization for Animal Health (OIE) and [Biomedical Technology, Epidemiology and Food Safety Global Network](#) operating in the Veterinary Research Institute, Brno, Czech Republic

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(08) A call for action against a proposal to remove paratuberculosis from the Terrestrial Animal Health Code (A letter by Gilles R. G. Monif to Ramon A. Juste)

Re.: The World Association for Animal Health (OIE)'s proposal to remove paratuberculosis from the Terrestrial Animal Health Code

Attn.: The President of the International Association for Paratuberculosis
Ramon A. Juste, DVM, PhD, Dip.ECSRHM

Any decision by the World Organization for Animal Health OIE to remove paratuberculosis as a disease entity from the Terrestrial Animal Health Code lacks scientific merit. If enacted, the consequences will only exacerbate significant agricultural and societal public health issues that, if not addressed, will in time destroy the dairy industry.

To state that there is no satisfactory way to detect animals infected with Map is a distorted interpretation of the relevant scientific literature. The FUIDI #1 Map ELISA test specifically addresses the issue of whether detectable Map is present or not. What has adversely colored the diagnostic literature concerning *Mycobacterium avium* subspecies *paratuberculosis* (Map) is the fact that the current commercial Map ELISA tests certified by the United States Department of Agriculture (USDA) measure anti-Map antibodies, but the interpretation of a positive test is predicated on the identification of a level of antibody that predicts a high probability of a progression of Map infection to clinically overt enteritis (Johne's disease) or confirms its presence. A negative commercial Map ELISA test does not address the issue of whether or not a given animal has ever been infected by Map.

The decision by USDA to have the Map ELISA tests represent a statement of probability rather than a valid measurement of the amount of antibody present has permitted infected cows to be transported across state lines and national borders. The net result was not only the introduction of infected animals into uninfected herds, but a dramatic increased prevalence of Map infection in the national herds. In 2002, 30-40% of U.S. dairy herds had animals with Map. In 2007, USDA acknowledged that an estimated 70% of U.S. dairy herds contained one or more infected animals (USDA-APHIS Johne's Disease in U.S. Dairies 1991-2007. http://nahms.aphis.usda.gov/dairy/dairyo7/Dairy_2007-Johnes.pdf.2007). If a test is now used that truly measures the presence or absence of Map antibodies, the number of infected animals in a large, confined dairy operation may exceed the 2007 seventy per cent figure that identified merely one or more Map infected animals.

Central to the herd monitoring schema proposed by the 2008 National Johne's Disease Control Program for Johne's Disease was identification and removal of infected animals from the herd. Reducing the introduction of Map infection and potentially Johne's disease into uninfected herds is largely contingent upon the buyer having the proper information to go along with eyeball analysis of the animal's body condition score. Quality of merchandise is theoretically addressed through the animal's health certificate. In the United States, revision to parts 71 and 80 of the Code of Federal Regulations (CFR) is supposed to restrict the interstate movement of Map-infected animals except to recognized slaughter establishments (*United States Department of Agriculture Animal Plant Health Inspection Service. 9, Parts 71 and 80.2000. Johne's disease in domestic animals: interstate movement. Federal register 65:18875-188879*). With an artificially constituted threshold for a positive



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test, the pertinent CFR regulations do not truly address the quality of merchandise issue. By not stipulating on the animal's certificate of health its Map status in a manner comparable to *Mycobacterium bovis*, animals with subclinical disease animal are and have been transported across state and national boundaries. The decision by USDA not to require a statement as to an animal's Map status has been a prime factor that undermined its avowed intent to prevent dissemination of Map into uninfected herds. USDA's decisions have effectively masked the presence of infection in dairy cows, and by so doing exported disease across state and national boundaries.

The Japanese perception that Map constitutes a potential public health hazard has engendered a different schema (*Eiichi M.2012. Epidemiological situation and control strategies for paratuberculosis in Japan. Japanese J. Vrt. Res. 60:19s-29s*). In accordance with the Act on Domestic Animal Infectious Disease Control, after 1998, every Japanese dairy farm is examined for Map every five years. Imported cattle are subjected to quarantine in which they are screened using Map ELISA, fecal bacterial culture, analysis of feces for Map DNA and Johnin skin test. If a new cow is to be introduced into a herd, the recommended procedure is that the cow should be negative in more than two ELISA tests within three-month intervals during the last six months, negative at least once in culture for Map, and kept in quarantine until proven non-infectious. Fifty-four percent of diseased animals detected by the Japanese Animal Quarantine Service came from the United States. Owing to the high antibody threshold for a positive test of the current Map ELISA tests, the real number of exported infected cows from the United States escaping detection is open to speculation.

The cost of USDA's current policies has been the widespread dissemination of Map within the nation's dairy and beef herds in the name of protecting agriculture. In trying to placate a threat to the dairy and related industries, USDA has dramatically magnified the threat. Once introduced into the production area, eradication of Map from that environment is nearly impossible. Map dissemination within a herd has been documented to be progressive with time

In its attempt to insulate dairy producers from incurring added production costs embedded in implementing an effective herd management plan, USDA has cost producers money. Multiple studies have demonstrated a reduction in milk volume and fat content as well as impaired reproductive outcomes occur long before clinical signs become manifested. Instead of having occult losses from a few cows, the producer now had occult losses in milk production, unsuccessful reproductive outcomes, and decreased slaughter weight occurring in the majority of his cows. Once unidentified Map infection becomes prevalent within a large herd, by itself, small occult milk production losses can become very substantial over time owing to the number of animals now infected.

The more immediate threat to the dairy industry is not whether Map is the direct (cytokine/tumor necrosis factor) or indirect (induction of an autoimmune response) cause of irritable bowel syndrome and Crohn's disease; it is that milk and milk products may contain an element (the Map organism) that may be harmful to the public health. A statement to this effect is not on the labels of milk, of baby food made from milk, of products made from milk or powdered milk, etc. Knowledge that 1) Map is recognized as a zoonotic pathogen; 2) the organism has been identified significantly more frequently in disease tissue, milk, and blood from individuals with Crohn's disease than from individuals without gastrointestinal diseases; 3) the majority of individuals who consume milk regularly are projected to be infected; and 4) even killed Map release muramyldipeptides that are potent immunomodulators that trigger inflammation. To falsify a product label by deleting the inclusion or potential inclusion of a potentially harmful ingredient is inviting civil, if not criminal proceeding.

Recognizing USDA's administrative blunders, the World Organization for Animal Health (OIE) now seeks to whitewash the damage done on a global level using the rationale that because Map infection is so widespread, continued recognition of Map as an animal pathogen would only cause economic losses through the restrictions in international animal trade. Ethically, as well as scientifically, OIE has chosen to disregard the preponderance of scientific evidence incriminating Map in the pathogenesis of human diseases: in particular Crohn's disease and childhood autism.

To do nothing is to do something (*"In any moment of decision, the best thing you can do is the right thing, the next best thing is the wrong thing, and the worst thing you can do is nothing"*: Theodore Roosevelt - former U.S. President). The cost of USDA doing nothing has been the widespread dissemination of Map within the nation's dairy and beef herds in the name of protecting agriculture.



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OIE is to be congratulated for doing the next best thing to nothing, the wrong thing. Let the International Association for Paratuberculosis (IAP) do the best thing and speak out against a proposal that puts us and children's children all at a greater risk.

With kindest regards,
Gilles R. G. Monif, M.D.
19 December 2012

A note by the CGNI Editor:

The OIE and IAP representatives were applied for their opinions. The replies will be published in CGNI , if available.

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