

and can live in both cold blooded and warm blooded animals *Salmonella* is a microorganism recognized as one of the most common causes of equine enteric disease and nosocomial infections of hospitalized horses. Infection with *Salmonella* spp can also develop without causing clinical signs of disease, which can be a potential threat of infection for other animals. Studies of salmonella detection in equine species are scarce compared to other animals. The purpose of this article is to identify and detect *salmonella* in horses currently inhabiting Jeju, which can be used as a baseline data to further equine *Salmonella* studies.

Materials and Methods: Total 81 samples from 18 different husbandries were collected. 9 samples were requested for disease analysis. Each sample was enriched in Selenite Cystine (SC) broth and plated in Xylose-Lysine-Tergitol 4 (XLT4) agars. Samples positive for *salmonella* were tested for antibiotic susceptibility.

Results: After a total of 81 samples tested, 4 samples from 3 different husbandries were detected as *salmonella*. The isolates were susceptible to most antibiotics. Some isolates showed resistance to Tetracyclin, Oxytetracyclin, and Streptomycin.

Conclusions: *Salmonella* detection was estimated 5% of total samples, 17% of the selected husbandries. Although the detection rate may seem low, it can not be ignored. Limited samples have been collected while detecting *salmonella*, and suggest a long term, wide scale research for a deeper understanding.

P-31

The development and evaluation of an immunochromatographic assay using a gp51 monoclonal antibody for the detection of antibodies against the bovine leukemia virus

Jun-Ju Kim¹, Kwang-Meon Cheong², In-Soo Cho¹, Yeun-Kyung Shin^{*1}

¹Viral Disease Division, Animal and Plant Quarantine Agency, Republic of Korea, ²Research Institution, MEDIAN Diagnostics Inc. Republic of Korea

Introduction: Infection of cattle with bovine leukemia virus (BLV) has been reported worldwide, including in Korea. The onsite identification of infected cattle would be a useful method for decreasing and eradicating BLV infections on farms. Here, we present a new immunochromatographic assay using monoclonal antibodies (MAbs) for the detection of antibodies against BLV in the field.

Materials and Methods: BLV envelope glycoprotein (gp) 51 was expressed in *E. coli*, and MAbs against recombinant BLV gp51 were generated for the development of an immunochromatographic assay to detect BLV antibodies in cattle. The sensitivity and specificity of the assay were determined by comparing these results with those obtained from a standard enzyme linked immunosorbent assay

(ELISA).

Results: A total of 160 bovine sera were used to evaluate the new immunochromatographic assay. Using ELISA as a reference standard, the relative specificity and sensitivity of this assay were determined to be 94.7% and 98%, respectively.

Conclusions: With its high sensitivity and specificity, this BLV antibody detection assay would be suitable for the onsite identification of BLV infection in the field.

References

- [1] Lee E, Kim EJ, Joung HK, Kim BH, Song JY, Cho IS, Lee KK, and Shin YK. Sequencing and phylogenetic analysis of the gp51 gene from Korean bovine leukemia virus isolates. *Virology* 2015, 12, 64.
- [2] OIE. Manual of diagnostic tests and vaccines for terrestrial animals. 2015, Chapter 2.4.11. Enzootic bovine leukosis
- [3] De Giuseppe A, Feliziani F, Rutili D, and De Mia GM. Expression of the bovine leukemia virus envelope glycoprotein (gp51) by recombinant baculovirus and its use in an enzyme-linked immunosorbent assay. *Clinical Diagnostic Laboratory Immunology* 2004, 11, 147-151.

P-32

Financial impact of foot-and-mouth disease (FMD) to pig farmers during the 2014/2015 epidemic in the Republic of Korea

Hachung Yoon^{*1}, Jeong Wooseog¹, Jida Choi¹, YongMyung Kang¹, Hongsik Park¹, Tim Carpenter²

¹Animal and Plant Quarantine Agency, Republic of Korea, ²EpiCentre, Massey University, New Zealand

Introduction: During the epidemic lasted from December 2014 through April 2015, animals showing clinical signs of FMD were depopulated. Although farmers are compensated for slaughtered animals, their losses due to foregone production losses is not covered.

Materials and Methods: Loss of income at FMD outbreak pig farm was estimated as net income per animal multiplied by number of animals slaughtered on the farm. Data necessary to the calculation were provided by the epidemiological investigation analysis report and the annual report of livestock statistics.

Results: On an average, 932 (Median 381) animals were slaughtered on 180 FMD outbreak pig farms. Loss of income due to slaughtered animals was on an average 78.7 million Korean won (range 84,000~1,414,972,000).

Conclusions: Economic loss due to outbreak of FMD varied according to the number of animals slaughtered. In the current strategy of vaccination and partial culling in Korea, reducing the number of slaughtered animals by early detection is the only way to minimize economic damage from the outbreak.