

Foot-and-Mouth Virus Detection in Asymptomatic Dairy Cows without Foot-and-Mouth Disease Outbreak

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Abstract : Animal management aims to provide a suitable environment for animals allowing maximal productivity in those animals. Prevention of disease is an important part of animal management. Foot-and-mouth disease (FMD) is a highly contagious viral disease in cattle and is an economically important animal disease worldwide. Monitoring the FMD virus in farms is useful management for the prevention of the FMD outbreak. A recent publication indicated collection samples from nasal swabs can be used for monitoring FMD in symptomatic cows. Therefore, the objectives of this study were to determine the FMD virus in asymptomatic dairy cattle using nasal swab samples during the absence of an FMD outbreak. The study was conducted from December 2020 to June 2021 using 185 asymptomatic signs of FMD dairy cattle in Chiang Mai Province, Thailand. By random cow selection, nasal mucosal swabs were used to collect samples from the selected cows and then were to evaluate the presence of FMD viruses using the real-time rt-PCR assay. In total, 4.9% of dairy cattle detected FMD virus, including 2 dairy farms in Mae-on (8 samples; 9.6%) and 1 farm in the Chai-Prakan district (1 sample; 1.2%). Interestingly, both farms in Mae-on were the outbreak of the FMD after this detection for 6 months. This indicated that the FMD virus presented in asymptomatic cattle might relate to the subsequent outbreak of FMD. The outbreak demonstrates the presence of the virus in the environment. In conclusion, monitoring of FMD can be performed by nasal swab collection. Further investigation is needed to show whether the FMD virus presented in asymptomatic FMD cattle could be the cause of the subsequent FMD outbreak or not.

Keywords : cattle, foot-and-mouth disease, nasal swab, real-time rt-PCR assay

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