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Management of warning system and national surveillance of *Culicoides* biting midges transmitting arboviruses on cattle farm, 2014-2015

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A nationwide vector surveillance program with early warning system, the 5 bovine arthropod-borne viruses (arboviruses), was initiated in the Republic of Korea. Bovine arboviruses are mainly transmitted by blood-sucking arthropods, such as, *Culicoides* biting midges and ticks. *Aino virus* (AINOV) and *Akabane virus* (AKAV), in the family *Bunyaviridae*, are among the arboviruses that cause disease outbreaks in cattle. Bovine ephemeral fever virus (BEFV) is classified into the family *Rhabdoviridae* and is known to cause an acute febrile disease. *Chuzan virus* (CHUV) and *Ibaraki virus* (IBAV) belong to the family *Reoviridae* and cause reproductive disorders, fever and anorexia. This study described results of the arboviruses surveillance conducted by collecting *Culicoides* biting midges in 2014-2015. Arboviruses vector surveillance was conducted by collecting from 4 sites nationwide in cattle farms. *Culicoides* biting midges were caught on a weekly basis using a light trap (SNC, Korea). *Culicoides* species (~60) were pooled into 1 sample and the sample tubes were subjected to RT-PCR for detecting 5 arboviruses. The PCR was performed on by RT-PCR kit (Arbovirus RT-PCR, Median diagnostic, Korea). *C. punctatus* was the most commonly collected species (51.1%), followed by *C. arakawae* (40.0%) and *C. maculatus* (8.6%). A total of 174 pooled samples of *Culicoides* biting midges were tested to detect the presence of arboviruses: CHUV was detected in July, Jeonju City; but it did not provide the precautionary attention level at detection rate. The detection rate of the *Culicoides* biting midges is one of the important factors to predict the possibility of outbreak of arbovirus diseases. By analyzing the surveillance data, the livestock producer can be provided with vital information on when and where arboviruses are active, which may be helpful to prevent potential outbreaks.

Biography

Yeon Hee Kim has completed her PhD from Seoul National University, South Korea. She is currently a Researcher in Animal and Plant Quarantine Agency, South Korea.

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