

[6-1130-P]Other Categories (6th)

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11:30 AM - 12:30 PM

[6-1130-P-14]Relationships between the Number of Sneezes and Swine Influenza Infection Experiment Factors

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Swine influenza spread quickly because of respiratory infection. In dual infection with other diseases, infection symptom will be severe (Reeth et al., 1996). Furthermore, when the virus mutated, human pandemic occurred in 2009 (WHO, 2009). Hence, a lot of previous researches measured relationships between influenza virus titers and infection symptoms (Takemae et al., 2018); These results found influenza infection induced increasing sneezing. If we can detect influenza by sneezing, we can detect disease earlier than an antibody test (Mengeling, 1995) that is a general method. Although previous researches measured only once a day and 1-hour monitoring, we do not know what infection experiment's factors induced increasing sneezes. As for examples factors, there are a virus, human stimulus, eating meal and others. The purpose of this paper is discussing relationships between the number of sneezes and factors in swine influenza infection experiment. Because of this, we measure the number of sneezes around the clock during 2-week infection experiment using automatic sneeze detector. In the experiment, we use 3 virus groups and 1 healthy control group, and there are 4 pigs in each group. Regarding automatic sneeze detector, it performs feature extraction from acoustic signals for dimension reduction, and classify sneeze or not based on support vector machine (Mito et al., 2018). As a result, we can observe some relationships between increasing sneezes and factor. The number of sneezing increase after meal supply and infection check timing in each group. As regards this result, we guess these factors have stimuli to pig. Specifically, entering meal into a nasal cavity in a miss, and collecting mucous membranes from a nasal cavity. In addition, we observed increasing the number of sneezes at night, before virus titers cannot detect in 3 virus groups. That means, measuring the number of sneezes at night, we may be able to detect infection influenza or not. Moreover, the previous method cannot measure that time. Consequently, we could measure and discuss the relationship between the number of sneezes and factors in swine influenza infection experiment by a measurement around the clock automatically.