水禽場坦布蘇病毒的檢測

疫學研究組

陳燕萍 副研究員

摘要

坦布蘇病毒屬於黃病毒科的黃病毒屬，最早於 1955 年在馬來西亞的庫蚊中被發現。2000 年，在馬來西亞分離到雞源坦布蘇病毒，稱為實兆遠病毒，該病毒會導致肉雞腦炎與生長遲緩。自 2010 年以來，中國蛋鴨場或種鴨場均有報告由變異的鴨坦布蘇病毒引起的嚴重產蛋下降症候群疫情。由鴨坦布蘇病毒引起的疾病之後蔓延到馬來西亞和泰國的養鴨場。坦布蘇病毒除了造成鴨隻嚴重的產蛋下降外，還會導致食慾下降、抑鬱、生長遲緩、腹瀉和神經功能障礙。其發病率為 90%~100%，死亡率為 10%~30%。先前的報告指出，坦布蘇病毒也會在雞和鵝中引起類似的臨床症狀，並且該病毒也已從蚊子、鴿子和麻雀中被分離到。2019 年在臺灣從庫蚊中發現一種新型坦布蘇病毒，TP1906 株，同時，亦從臺灣的一鴨場中檢測出坦布蘇病毒。在本報告中，我們描述了檢測坦布蘇病毒核酸的 RT-PCR、nested RT-PCR 和 real-time RT-PCR，其檢測限分別為 1,000、100 和 20 個複製數。我們還描述了坦布蘇病毒感染鴨和鵝的臨床表現和坦布蘇病毒的特徵。

Detection of Tembusu Virus in Waterfowl Farms

Yen-Ping Chen

Abstract

Tembusu virus (TMUV) belongs to the genus *Flavivirus* within the family *Flaviviridae* and was first identified from *Culex* mosquitoes in Malaysia in 1955. In 2000, a TMUV strain was isolated from chicken in Malaysia and was shown to cause encephalitis and retarded growth in broiler chicks. Since 2010, several outbreaks caused by a variant TMUV, duck TMUV, have been reported on egg-laying duck farms and breeder duck farms in China, with significant effects on egg production. This series of outbreaks of TMUV eventually spread to duck farms in Malaysia and Thailand. In addition to causing significant decreases in duck egg production, TMUV infection in ducks can also result in decreased appetite, depression, retarded growth, diarrhea and neurological dysfunction. Upon infection morbidity rates are typically 90% to 100% and mortality rates range from 10% to 30%. TMUV has also been shown to cause similar clinical symptoms in TMUV-infected chicken and geese and has also been isolated from pigeons and sparrows. In 2019, a novel TMUV, strain TP1906, was identified from *Culex* mosquitoes in Taiwan. In the same year, a TMUV was identified from a diseased duck flock in Taiwan. In the current report, we describe the establishment of RT-PCR, nested RT-PCR and real-time RT-PCR for detecting of nucleic acids of TMUV with the detection limit of 1,000 copies, 100 copies and 20 copies, respectively. We also describe the clinical manifestations of TMUV infection in ducks and geese as well as the characteristics of the TMUV strain.