

Study on monitoring pathogen and classical swine fever vaccine efficacy of Lanyu pigs⁽¹⁾

Yu-Ling Huang⁽²⁾⁽⁵⁾ Han-Sheng Wang⁽³⁾ Yi-Long Chen⁽⁴⁾
Shih-Sin Li⁽⁴⁾ and Chia-Chieh Chang⁽⁴⁾

Received: Aug. 25, 2023; Accepted: Oct. 4, 2024

Abstract

The objectives of this study were to investigate disease surveillance and evaluate the vaccine efficacy in Lanyu pigs. Samples were collected from 281 Lanyu pigs at Taiwan Livestock Research Institute – Eastern Region Branch at different stages, including lactation, nursery, growing-finishing and, breeding stock, through stratified random sampling. Pathogen tests were conducted for porcine reproductive and respiratory syndrome virus (PRRS), porcine circovirus type 2 (PCV2), pseudorabies virus (PR), and Japanese encephalitis virus (JEV). Additionally, the antibody titers of piglets vaccinated with classical swine fever (CSF) vaccine were monitored. The results showed that 3 out of 137 cases of pigs' blood samples collected in 2020 were tested PCV2 qPCR positive (2.19%) while the retaining samples were not tested with any pathogen. One out of 139 cases of pigs' blood samples collected in 2021 tested PRRS qPCR positive (0.78%) and 6 cases tested PCV2 qPCR positive (4.65%), respectively, while the remaining samples were not tested with any pathogen. As for the monitoring of ELISA antibody (blocking percentage, %) after CSF vaccination at the age of 9, 12, 15, and 18 weeks, the ELISA antibody were $14.0 \pm 12.2\%$, $60.5 \pm 7.1\%$, $79.8 \pm 7.0\%$, and $84.9 \pm 7.9\%$, respectively. It revealed the constant rise of antibody titer in Lanyu pigs after CSF vaccination. In conclusion, this study detected the presence of PRRS and PCV2 using qPCR in Lanyu pigs. In sum of the above, the monitoring results showed that Lanyu pigs were primarily subject to infection by two pathogens, namely PRRS and PCV2, while piglets showed a better specific antibody response after CSF vaccination at the age of 9 week and booster vaccination at the age of 12 weeks.

Key words: Lanyu pig, Disease monitoring, Vaccine efficacy..

(1) Contribution No. 2804 from Taiwan Livestock Research Institute (TLRI), Ministry of Agriculture (MOA).
(2) Kaohsiung Branch, Animal and Plant Health Inspection Agency (APHIA), Ministry of Agriculture.
(3) Guansi Township Office, Hsinchu County.
(4) Eastern Region Branch, MOA-TLRI, Ilan 26846, Taiwan, R. O. C.
(5) Corresponding author, E-mail: khyhluang@khaphia.gov.tw.