

## 出國報告-產食動物抗微生物藥物抗藥性監測實驗室培訓

生物組

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### 摘要

農業部獸醫研究所派員赴日本東京，參加 2024 年 11 月 11 日至 11 月 15 日由世界動物衛生組織（WOAH）和日本動物醫藥品檢查所（National Veterinary Assay Laboratory, NVAL）合作舉辦的抗生素抗藥性區域短期訓練，其餘受訓者來自菲律賓、新加坡、斯里蘭卡及萬那杜等國。訓練目的為提升各國實驗室對於產食動物抗藥性監測之技術及方法標準化。本培訓內容包含介紹日本抗藥性監測系統、抗藥性機制基本原理、各種抗藥性測試方法（如培養液微量稀釋法、紙錠擴散法、瓊脂稀釋法、黏菌素培養液紙錠洗萃法及抗藥性基因 PCR 檢測技術）、MALDI TOF-MS 應用、全基因定序及分析之經驗分享。藉由本次訓練的機會，提升實驗室對於抗藥性監控及研究技術，同時也能與各國研究人員交流實務經驗，有助於專業能力提升及應對抗藥性挑戰。

# **Report on “the Laboratory Training on AMR Surveillance in Food Animals”**

Nan-Ling Kuan

## **Abstract**

A colleague from Veterinary Research Institute, Taiwan, had participated the regional short-term training program, co-hosted by the World Organization for Animal Health (WOAH) and National Veterinary Assay Laboratory (NVAL) in Tokyo, Japan, lasted from November 11<sup>th</sup> to November 15<sup>th</sup>, 2024. Other participants included Philippines, Singapore, Sri Lanka, and Vanuatu trainees. The training aimed to enhance laboratory expertise in standardizing methods for monitoring antimicrobial resistance (AMR) in food animals. Key topics covered included an overview of AMR monitoring system in Japan, fundamental principles of resistance mechanisms, and diverse antimicrobial susceptibility testing techniques (including broth microdilution, disk diffusion, agar dilution, colistin broth disk elution, and PCR detection of AMR genes). The focus was also on applying matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI TOF-MS) and sharing knowledge and experiences in whole genome sequencing and analysis. By engaging in this program, laboratories can bolster their ability to monitor and study antimicrobial resistance while sharing practical insights with international professionals, contributing towards improved expertise and collaborative solutions to tackle AMR-related challenges.