

Epidemiological Evaluation of African Swine Fever Spread in the Dominican Republic

Rachel Schambow¹, Syed Hussain¹, Maria C. Antognoli², Silvia Kreindel², Raysa Reyes³ and Andres Perez¹

¹Center for Animal Health and Food Safety, University of Minnesota, St. Paul, MN;

²International Services Action Programs, Animal Plant Health Inspection Service, United States Department of Agriculture;

³Instituto del Estudio de las Enfermedades Zoonóticas, Universidad Autónoma de Santo Domingo, Santo Domingo, Dominican Republic

Key Points:

- 155 ASF outbreaks were reported in the Dominican Republic from Nov 2022-June 2023.
- Outbreaks were mainly reported in backyard farms and mostly located in the central provinces of the country, consistent with where most swine production occurs.
- Lack of biosecurity, management practices, and proximity to neighboring outbreaks are implicated in ASF spread.

Introduction

Since African Swine Fever (ASF) was detected in the Dominican Republic (DR) in July 2021, it has negatively impacted the country's swine industry. In 2022, local production decreased by an estimated 21% compared to 2021 [1]. From June 2021 to September 2023, approximately \$28.7 million USD have been spent by Banco Agricola and USDA APHIS on indemnification to affected producers [2]. Assessing the epidemiological situation is crucial to provide baseline information to help local authorities and industry stakeholders control ASF.

Methods

Data on 155 passively reported outbreaks in the DR from November 2022 to June 2023 were made available for analysis by the DR Ministry of Agriculture. Data were collected as part of their outbreak verification process and included information on the date, location, pig inventory, farm type (as defined in the 2022 census [3]), clinical signs, and biosecurity measures. Descriptive spatiotemporal analysis was performed to characterize disease distribution and spread, and clustering of outbreaks was assessed. Data on clinical presentation, biosecurity measures, and suspected reasons for introduction were categorized and summarized.

Results & Discussion

The majority (78%) of outbreaks occurred on small backyard farms (≤ 24 pigs) which generally had low biosecurity. Across farm types, the majority of pigs were still alive at the time of depopulation. Spatiotemporal findings suggest an endemic, or consistently present, pattern of disease geographically located centrally within the country. Clustering was detected even at small timeframes and spatial distances due to outbreaks amongst neighboring backyard farms. Underreporting may be an important limitation for this dataset as case reporting in DR is likely influenced by economic factors, such as the price of indemnity versus market price of hogs. These results provide critical information on the current state of the ASF epidemic in the DR and will aid government officials and swine industry leaders in developing effective ASF control strategies.

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<https://doi.org/10.3390/pathogens12121414>

References

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