

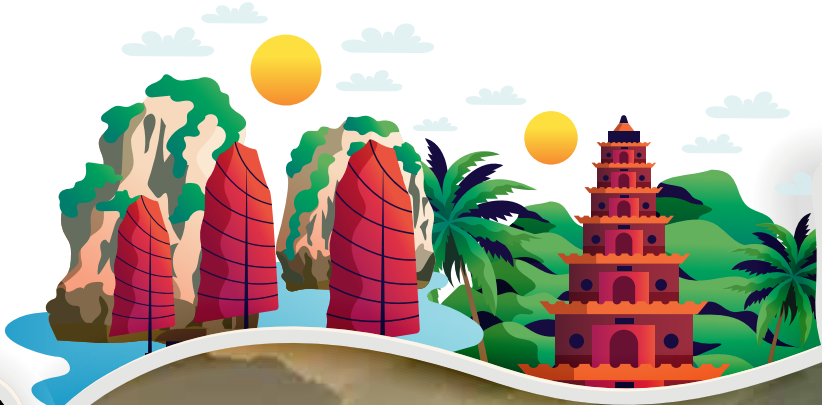


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## COINFECTION OF PCV2, PCV3, PCV4 AND PRRSV IN FARMS IN JALISCO, MEXICO

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### Introduction and Objectives

Porcine circovirus (PCV) is a ubiquitous viral agent in pigs, belonging to the genus *Circovirus*. Currently, the genus *Circovirus* comprises four species: PCV1-4. Problems associated with the presence of new *Circovirus* types have recently been described on farms, so the objective of this study was to identify coinfection with PCV2, PCV3, PCV4, and PRRSV in pig farms in the state of Jalisco.

### Materials and Methods

In Jalisco, 80 commercial farms participated in the study, distributed across four regions according to pig density. A total of 4,207 serum samples were taken from clinically healthy pigs. An average of 35 samples were obtained per farm, distributed by production stage: unweaned piglet, weaned, growing, fattening, finishing, and pregnant sows (71/80 farms vaccinated against PCV2 and 53/80 farms vaccinated against PRRSV). The samples were pooled into groups of 5 serum samples (n = 844). DNA and RNA were extracted from each pool using commercial kits (QIAGEN). The DNA was analyzed by qPCR to detect ORF2 for PCV2 and PCV4, ORF1 for PCV3, and ORF7 for PRRSV, in order to identify positive samples, defined as those with a Ct < 35.

### Results and Discussion

The most frequently detected virus was PRRSV with 305/844 pools (36.1%), followed by PCV2 with 235/844 (27.2%), PCV3 with 205/844 (24.2%) and PCV4 3/844. Coinfections involving PCV2 and PCV3 were present in 55/844 pools analyzed. Dual detection of PCV2/PRRSV was identified in 9.4% (80/844 pools), while identification of PCV3/PRRSV occurred in 81 pools (9.5%). The triple detection (PCV2-PCV3-PRRSV) occurred in 2.72% (23/844). The highest proportion of positive pools was found in the weaning stage for PRRSV (61.07%), the fattening stage for PCV2 (39.47%), and the growing stage for PCV3 (32.91%). The three positive samples for PCV4 were found in each of the aforementioned stages.

### Conclusion

This study represents the first regional survey involving PCV4 in Mexican swine farms PCV4 was detected in three pool serum samples from clinically healthy pigs. Genetic characterization of PCV4 detected in this and other regions of the country will continue. PCV2-PCV3-PRRSV coinfection is an event identified in low percentages, but present in pigs without clinical signs.

**Keywords:** Co-infection, Porcine circovirus, PRRSV.

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