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DETECTION AND MOLECULAR CHARACTERIZATION OF PORCINE ASTROVIRUS STRAINS ASSOCIATED WITH SWINE DIARRHEA

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Abstract. Astrovirus has been reported to be associated with diarrhea in pigs. The current study was conducted for the detection and molecular characterization of astroviruses in diarrheic pigs submitted to the Veterinary Diagnostic Laboratory, University of Minnesota. Intestinal contents from 269 pigs were examined by reverse transcription polymerase chain reaction (RT-PCR), and 62% were found positive for astroviruses. Of the positive samples, 20% were positive for astrovirus alone while astrovirus with rotavirus was detected in 58% of the samples. The remaining 22% revealed the presence of astrovirus along with Porcine hemagglutinating encephalomyelitis virus, Transmissible gastroenteritis virus, or *Porcine circovirus type 2*. Sequencing the capsid gene of 56 randomly selected samples confirmed them to be Porcine astrovirus type 4 (PAstV-4) with 58–100% nucleotide identity within these viruses. Phylogenetic analysis revealed 2 possible subgroups. The results indicate that PAstV is present on swine farms in the United States and that it may be associated with diarrhea either alone or in combination with other enteric viruses. Further studies are needed to determine strain diversity among porcine astroviruses so that appropriate control strategies can be devised and implemented.