

Identification of the causative agents for diarrhea in piglets from a Taiwanese pig farmJiann-Hwa Chen¹, Chuan-Shun Lin², Chiao-Hsia Huang¹ and Yen-Ti Cheng¹¹National Chung Hsing University, Taiwan²Agricultural Technology Research Institute, Taiwan

Post-weaning diarrhea (PWD) of weaned piglets was found to frequently occur in a commercial pig farm in western Taiwan. The purpose of this study was to find and characterize the causative agents. From September 11, 2014 to February 11, 2015, 15 stool samples from healthy piglets and 58 rectal swab specimens from diarrheic piglets were collected from the pig farm, and 26 and 100 *E. coli* strains were isolated independently. These 126 strains were checked by PCR for genes of six virulence factors: heat-labile enterotoxin (LT; encoded by *eltAB*), heat-stable enterotoxin A (STa; encoded by *estA*), heat-stable enterotoxin B (STb; encoded by *estB*), enteroaggregative *E. coli* heat-stable enterotoxin 1 (EAST1; encoded by *astA*) and Shiga toxin 2e (Stx2e; encoded by *stx2e*), and F18 fimbriae (encoded by *fedA*); secretion of LT and ST were also examined by ELISA-based commercial kits. None of the 126 strains were carrying *stx2e*. Of the 26 strains recovered from healthy piglets, none carried *fedA* nor secreted LT, 23% (6/26) secreted ST, and 50% (13/26) carried *astA*. In contrast, of the 100 *E. coli* strains recovered from diarrheic piglets, 41% (41/100) carried *fedA*, of which 88% (36/41) secreted both LT and ST, but none carried *astA*. Thus, the main causative agent for PWD in this Taiwanese pig farm was identified to be the F18 fimbriae-positive, LT and ST secretion-positive enterotoxigenic *E. coli*, which were carrying *fedA*, *eltAB*, *estA* and *estB*, but not *astA* nor *stx2e*.

jhchen@dragon.nchu.edu.tw