surfaces (zone 1) contained PEDV RNA after production of the contaminated feed. Additionally, all swabs collected directly adjacent to direct feed contact surfaces (zone 2) were positive following production of the contaminated feed. Of the remaining swabs collected (zone 3), outside of zones 1 and 2, 88.9% had detectable RNA, emphasizing the potential role dust plays in cross-contamination of pathogens throughout a manufacturing facility. Application of the cleaner, sanitizer, and heat were effective at reducing PEDV RNA ($P < 0.05$), but did not completely eliminate it. Specifically, 29.6%, 14.8%, and 7.4% of zone 1 swabs had detectable PEDV RNA after decontamination with the cleaner, sanitizer and heat, respectively, during only replication 2. Due to this, decontamination was repeated with no PEDV RNA detected from subsequent swab collection. These findings do provide a method for facility decontamination of PEDV, however, the use of liquid cleaners, sanitizers, and/or facility heat-up may not be applicable for most commercial feed manufacturing facilities.

Key Words: PEDV, disinfection, feed mill
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218 Characterization of variability in the U.S. pork supply.

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Improving consistency in the U.S. pork supply has long been a goal of producers and processors, though factors contributing to variability in pork composition and quality are ill-defined. Therefore, variability in pork quality and composition and correlations among compositional and quality traits were characterized in multiple studies. In boneless loins destined for export to a quality focused market ($N = 154$), subjective color and marbling scores at 1 and 28 d postmortem were not correlated with sensory tenderness ($P \geq 0.47$), chewiness ($P \geq 0.18$), juiciness ($P \geq 0.43$), or off-flavor ($P \geq 0.07$). In-plant loin firmness measures did not account for variability in sensory characteristics ($P \geq 0.08$). In a larger study, 7864 pigs were used to quantify variability in carcass traits attributable to marketing group (MG), sex, season (hot or cold), and production focus (lean growth or superior meat quality). The Levene's test was used to determine differences in variability among MG, sex, season, and production focus. The mivque0 option of PROC VARCOMP was used to evaluate the proportion of variability each effect contributed to total variance. Marketing group contributed 4.1% and sex contributed 1.4% of the variation of HCW. Variation in fat depth was attributed to production focus (26.7%), sex (17.6%), and season (4.5%). Variation in loin depth was attributed to production focus (20.0%), season (16.1%), MG (2.0%), and sex (1.4%). Production focus (34.6%), sex (15.8%), and season (10.2%) were large contributors to total variation in percent lean. However, the random effect of pig contributed the greatest proportion of total variance to carcass traits (93.5% of HCW, 51.2% of fat depth, 60.5% of loin depth, and 39.4% of percent lean). Barrows had greater variability than gilts for fat depth and percent lean ($P \leq 0.01$), but variability between sexes was not different for HCW and loin depth ($P \geq 0.09$). Variability was greater in the hot season for HCW, but was less for fat depth and percent lean compared with variability of pigs from the cold season ($P \leq 0.01$); loin depth was not different ($P = 0.23$). Variability was greater in pigs from the quality production focus than the lean focus for HCW, fat depth, and loin depth ($P \leq 0.03$). Variability was different among MG for HCW, fat depth, and percent lean ($P \leq 0.01$) but not loin depth ($P = 0.20$). While segregating pigs by MG or production focus may limit variability in carcass composition, a larger amount of variability is attributed to sex, season, and pig, which are more difficult to control.

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219 Requirements for digestible Ca by growing pigs.

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Nine experiments were conducted toward developing a system for determining digestible Ca requirements in growing pigs. In Exp. 1, it was demonstrated that there is a considerable loss of absorbed Ca in the intestinal tract, which indicates that values for digestible Ca need to be based on standardized digestibility. Experiment 2 was conducted to determine where in the intestinal tract Ca is absorbed and results indicated that Ca is absorbed in the small intestine and no absorption of Ca takes place in the large intestine. No differences were observed between ileal and total tract digestibility values, therefore, total tract collections can be used to determine digestibility of Ca. Experiments 3, 4, and 5 were conducted to establish standard total tract digestibility (STTD) values of Ca in a number of feed ingredients without and with microbial phytase. Results indicated that microbial phytase increases STTD of Ca in calcium carbonate and fish meal, but not in dicalcium phosphate and monocalcium phosphate. Experiments 6 and 7 were conducted to determine the STTD Ca requirements by 11 to 25 kg pigs. Six diets were formulated to contain 0.32, 0.40, 0.48, 0.56, 0.64, or 0.72% STTD Ca and 0.36% STTD P. Results indicated that the concentration of STTD Ca in the diets needed to maximize bone ash was 1.33 times the concentration of STTD P. Experiments 8 and 9 were conducted to determine the requirement for STTD Ca and STTD P by 25 to 50 kg pigs. A total of 20 diets were formulated to contain 0.13, 0.27, 0.42, 0.57, or 0.72% STTD Ca and 0.15, 0.31, 0.39, or 0.47% STTD P. Results indicated that the concentration of dietary STTD Ca needed to maximize growth performance was between 1.06 and 1.43 times the concentration of STTD P, but to maximize