56 Examination of the interactive effects of stocking density and marketing strategies in a commercial production environment. J. C. Woodworth∗, S. S. Dritz, M. D. Tokach, R. D. Goodband, and J. L. Nelssen, Kansas State University, Manhattan.

A total of 1,272 pigs (initially 29 kg) was used to test the interactive effects of stocking density and marketing strategy on growth performance, carcass characteristics, and carcass value of pigs in a commercial environment. Experimental treatments were arranged in a 2×2×3 factorial with main effects of sex (barrows (B) vs. gilts (G)), stocking strategy (25 (0.67 m²/pig) vs. 28 (3.59 m²/pig) pens per pen), and marketing strategy (0 (0.05), 1 (1.05), or 2 (2.25) sorts before close out). Four pigs were marketed 21 d prior to close out for the 1S treatment and 2 pigs were marketed at 27 d and 3 pigs marketed at 14 d prior to close out for the 2S treatment with the remainder of the pigs marketed 117 d after placement. All diets were corn-soybean meal based and were formulated in five phase weight ranges for each gender with total dietary lysine levels of 1.22, 1.05, .90, .72, and .62; and 1.22, 1.10, .95, .75, and .65 for barrows and gilts for the five phases, respectively. No 2 or 3-way interactions were observed (P < .05). Growth performance (% ADG) from wk 0 to 12 was greater (P < .05) for pigs in 1S compared to pigs in 2S pens. Carcass characteristics were not influenced by marketing strategy; however, sort discount was greater (P < .05) for pigs from 0S pens compared to pigs from 1S or 2S pens (.76 vs. .49 and .48 $/cwt, respectively). In summary, pen densities did not influence growth performance or carcass characteristics in this trial. Marketing strategy influenced growth performance and weight discounts during the marketing period, but had no effect on carcass characteristics.

Key Words: Pig, Group Size, Pen Design


Few comparisons of electronic sow feeding (ESF) to conventional sow feeding systems have been conducted. Osborne Industries Inc. 300-sow Demonstration Farm compared ESF to conventional stalls. Sow breeding, gestation, and lactation performance were assessed from October 1994 to June 1997 over multiple parities. Treatments included ESF in gestation (EG), gestation in stalls (CG), ESF in lactation (EF), and lactation in stalls (CF). Sows were group housed in both gestation and lactation ESF treatments. Sows did change treatments from parity to parity based on the production schedule. Average lactation length over all parities was 20.9 d. Data analyses were completed by parity. Number born live and total number born were not affected by either gestation or lactation treatment. Litter birth weights in 1S and 2S were higher with EG than CG in parities 3 (19.23 vs 17.45; P < .05) and 6 (17.46 vs 15.63; P < .12). An interaction of lactation and gestation treatments was observed (P = .10) in parity 7 for LBW. Within CF, gestation treatment did not affect LBW. Within EF, EG sow had heavier LBW than CG sows (16.09 vs 14.53; P < .01). Number weaned was higher for CF compared to EG in parities 1 (22.3 vs 20.7; P < .05), 2 (9.43 vs 8.75; P < .14), 3 (9.35 vs 8.76; P < .10), and 5 (9.11 vs 7.31; P < .05), due to increased pre-weaning mortality with group housed sows. Return to estrus (%) after weaning was higher for sows in EG than CG in parities 2 (93.5 vs 87.2; P < .13) and 4 (98.2 vs 93.1; P < .10). Return to estrus within 7 d (% after weaning was higher for sows in EG than CG in parities 2 (66.4 vs 56.4; P < .11) and 6 (82.1 vs 69.1; P < .05). Sows housed in gestation ESF had similar or improved performance over conventional stall housed sows. Sows housed in lactation ESF had similar performance to conventional stall housed sows with the exception of number weaned, due to increased pre-weaning mortality in group housing. Ongoing research in farrowing pen design should improve pre-weaning mortality for group housed sows.

Key Words: Electronic Sow Feeding, Lactation, Gestation

59 Effects of off-sow rearing upon Campylobacter colonization in neonatal pigs. R.B. Harvey∗∗, R.E. Drakely∗, R.C. Anderson1, K.J. Genovese1, L.A. Egän2, and D.J. Nisbet3, 1Food and Feed Safety Research Unit, ARS, USDA, College Station, TX USA, 2College of Veterinary Medicine, Texas A&M University, College Station, TX USA.

There are increased concerns about the prevalence of Campylobacter in pigs and the potential public health risks for Campylobacter transmission to humans from pork products. We conducted a study to determine how Campylobacter colonization of the gastrointestinal tract is affected when piglets are removed from the sow within 24 h of birth. Twenty-nine, one-day-old piglets (80) from 9 different sows were purchased from a commercial swine operation and were reared in our laboratory on wire floored farrowing crates and fed commercial milk replacer for 21 days. Fifteen littermates (from the same 9 sows) of the above piglets were reared on their dams on the farm. Rectal swabs were collected daily for 21 days from the off-sow, laboratory-reared piglets and cultured for the presence of Campylobacter. Rectal swabs from the sow-reared piglets were collected on d 1, 12, and 20 and cultured for Campylobacter. Swabs were enriched in Bolton’s broth, incubated for 24 h at 42 C, 10 µL of broth were streaked onto Campy-Cephex agar plates, and plates were incubated at 42 C for 48 h under microaerophilic conditions. At d 1, 8 of 29 (28%) of the off-sow, and 4 of 15 (27%) of the on-sow piglets were positive for Campylobacter. By d 2, 12 of 29 (41%) of the off-sow piglets were positive. However, the prevalence of Campylobacter decreased steadily in the off-sow piglets from d 2 until d 21 when