

194 Net energy requirements for maintenance in growing and finishing pigs. D. Y. Kil*¹, F. Ji¹, R. B. Hinson², A. D. Beaulieu³, L. L. Stewart¹, G. L. Allee², J. F. Patience³, J. E. Pettigrew¹, and H. H. Stein¹, ¹*University of Illinois, Urbana*, ²*University of Missouri, Colombia*, ³*Prairie Swine Centre, Saskatoon, SK, Canada*.

An experiment was conducted to estimate the operational NE requirement for maintenance (ONEm) for growing and finishing pigs and to investigate if ONEm is different among pigs kept at different locations. The experiment was conducted at the University of Illinois (UIUC), the University of Missouri (MO), and the Prairie Swine Centre (PSC). Forty eight growing (initial BW: 23 kg) and 48 finishing (initial BW: 83 kg) barrows were used at each location. Within each stage of growth and location, pigs were allotted to 8 outcome groups of 6 pigs according to BW and pigs in each outcome group were then randomly allotted to 1 of 6 treatment groups. Two treatment groups served as an initial slaughter group and all pigs in these 2 groups were harvested at the start of the experiment. The remaining pigs were assigned to 4 dietary treatments and slaughtered after 28 (growing pigs) or 35 d (finishing pigs). Growing pigs at all locations and finishing pigs at MO and PSC were fed 1.40, 1.90, 2.40, or 2.90 times the estimated requirement of ME for maintenance (MEM), but finishing pigs at UIUC were fed 1.85, 2.20, 2.55, or 2.90 times MEM. The daily MEM was assumed to be 191 kcal/kg BW^{0.6}. Energy retention in each pig was calculated using the comparative slaughter method. Linear regression analyses were used to estimate the ONEm for each pig, which was defined as the y-intercept for the regression line. The slope of the regression line was assumed to represent the efficiency (NE:DE) of energy utilization in each pig. Results showed that the daily ONEm was different ($P \leq 0.05$) among locations and greater ($P \leq 0.05$) for finishing pigs than for growing pigs (219, 123, and 270 vs. 128, 115, and 78 kcal/kg BW^{0.6} for growing and finishing pigs at UIUC, MO, and PSC, respectively). The NE:DE were different ($P \leq 0.05$) among stations and between growing and finishing pigs (0.56, 0.41, and 0.46 for growing pigs and 0.72, 0.54, and 0.78 for finishing pigs at UIUC, MO, and PSC, respectively). These results show that ONEm and NE:DE are not consistent among pigs kept at different locations and also depend on the stage of growth of the pigs.

Key Words: maintenance requirement, net energy, pigs