358 **Effects of reducing the particle size of corn on growth performance of weanling pigs.** O. J. Rojas*, H. H. Stein, *University of Illinois, Urbana-Champaign.*

Results of a previous experiment indicated that reduction of corn particle size from 865 to 339 μm linearly increased the concentration of ME in corn. Two experiments were conducted to test the hypothesis that addition of lipids can be reduced if corn particle size is reduced without affecting growth performance of weanling pigs. In both experiments, pigs were fed a common diet for 14 d post-weaning. Pigs were randomly allotted to 4 different diets in a randomized complete block design. There were 4 pigs per pen and 8 replicate pens per treatment. The same batch of soybean meal and fish meal were used in all diets for both experiments, but the corn used was ground to different particle sizes (i.e., 339, 485, 677, or 865 μm). In Exp. 1, 128 weaned pigs (initial BW: 9.95 ± 1.95 kg) were used. In addition to corn, SBM, and fish meal, soybean oil was added to diets in increasing amounts to compensate for reduced ME in corn with increased particle size. Diets were formulated to contain 3413 kcal ME per kg. In Exp. 2, 128 weaned pigs (initial BW: 9.41 ± 1.54 kg) were used. All diets had the same ingredient composition and no attempt was made to compensate for the reduced ME in diets containing corn ground to a greater particle size. The only difference among diets was the particle size of corn. The G:F for Exp. 1 was 0.65, 0.63, 0.63, and 0.62 and for Exp. 2 was 0.69, 0.70, 0.66, and 0.65 for pigs fed diets containing corn ground to a mean particle size of 339, 485, 677, and 865 μm, respectively. In Exp. 1 and Exp. 2, the final BW, ADG, and ADFI were not different among dietary treatments (linear, $P > 0.05$). However, the G:F decreased (linear, $P < 0.05$) as particle size of corn increased in both experiments, which indicated that the ME of the diets with the greater particle size of corn was reduced compared with the ME of diets with smaller particle sizes of corn. The increased addition of oil to diets with corn ground to the greater particle sizes in Exp. 1 was not effective in compensating for the reduced particle size. In conclusion, weanling pigs utilize more energy from corn ground to a smaller particle size than if corn is ground to a greater particle size.

Key Words: corn, particle size, pigs