T189 Importance of sampling diets on the precision of ME studies with swine. G. J. M. M. Lima*, L. C. Ajala, and C. M. Marques, *Embrapa, Brazil.*

Energy balance studies with swine provide data of high variability. The main sources for it are animals and feed. Most studies are done with number of replicates (barrows) per treatment varying from 4 to 12 to improve energy estimate. However, there are no references of how many feed samples should be collected and analyzed. Errors in feed mixing and feed analysis can affect ME estimation. This study was carried out to evaluate the error of determining ingredient ME considering just one feed sample. Therefore, 16 energy balance studies were carried out with 32 ingredients. A total of 384 barrows (50 kg wt, in average) were used. Pigs were kept in individual conventional metabolic cages. Each trial (24 barrows, progeny of the same boar) consisted of one basal diet and 3 test ingredients replacing part of the basal diet. Tested ingredients, number of different batches of each ingredient and inclusion levels in the basal diet were, respectively: poultry viscera and feather meal (VFM), 5 batches, 20%; dry yeast from sugarcane fermentation (DY), 4 batches, 30%; yellow corn (C), 21 batches, 30%; and heated whole soybeans (WSB), 2 batches, 10%. The adaptation period lasted 7 d, followed by 5 d of total collection of urine and feces, separated. Iron oxide was added to feed as marker. Five samples of each test diet were gathered during the collection period. Ingredient ME values were calculated using each individual analyzed feed sample. Based on each sample, estimated ME values for the same batch were different ($P < 0.0001$), regardless the ingredient. Range among batch ME (kcal/kg DM) varied from: 3925 to 4326 for VFM; 3369 to 3572 for DY, 3668 to 4287 for C and 3933 to 4334 for WSB. The difference between the smallest and largest ME estimate (kcal/kg DM), considering individual sampling from a single ingredient batch, reached up to 1811 for VFM, 529 for DY, 236 for C and 1116 for WSB. These results demonstrate the importance of repeating sampling of test diets and use their average value to improve precision of ME estimate of feed ingredients.

Key words: digestibility, feedstuffs, methodology