the equine body; IgGb, IgGt, IgGa, and IgGc. These 4 subclasses of IgG and IgM were included in testing. The immune response to each of these diseases was measured separately through Enzyme Linked Immunosorbent Assays (ELISA). ELISAs were completed using IDEXX BRSV IgG Antibody Test Kits, IDEXX BVDV Antibody Test Kits, and IDEXX Infectious Bovine Rhinotracheitis Virus Antibody Tests Kits, respectively. Manufacturer's instructions were followed with the exception of using our own detection antibodies at a dilution of 1:20,000. IgGb, IgGt, IgGa, IgGc, and IgM antibodies were pooled and included in each ELISA. No difference of antibody response was found between horses from the 3 dietary groups, with the exception of an elevated antibody response to BVDV in horses fed TD1 and 2 compared to the control group on d 21 post-vaccination ($P < 0.05$). Therefore, IgGb, IgGt, IgGa, and IgM isotypes were tested individually from the d 21 BVDV sample. No differences were observed between the groups for individual isotypes, although there was a trend for enhanced antibody response in horses fed test diets. The test diets may support elevated antibody response in the horse.

Key Words: equine, antibody, immune, diet, vaccine response

408 Determining the standardized ileal digestible lysine requirement of 6.8 to 15.9 kg pigs.

C. M. Vier*, I. B. De Souza, J. A. De Jong, M. A. D. Goncalves, A. M. Jones, R. D. Goodband, M. D. Tokach, J. M. DeRouchey, J. C. Woodworth, S. S. Dritz, *Kansas State University, Manhattan.*

A total of 300 maternal line barrows (DNA; 200 × 400, initially 6.75 ± 0.23 kg BW) were used in a 21d trial to determine the standardized ileal digestible (SID) Lys requirement of nursery pigs from 6.8 to 15.9 kg. Pigs were randomly allotted to pens at weaning based on BW and were fed a common diet for 9 d after weaning. There were 10 replicate pens/treatment and 5 pigs/pen. Pens of pigs were allotted to experimental diets based on average BW, in a completely randomized design. The 6 dietary treatments consisted of 1.05, 1.15, 1.25, 1.35, 1.45, and 1.55% SID Lys and were achieved by increasing the inclusion of crystalline amino acids, allowing soybean-meal to stay constant across dietary treatments. Experimental data was analyzed using general linear and nonlinear mixed models with heterogeneous residual variances and pen as the experimental unit. Competing models included linear (LM), quadratic polynomial (QP), broken-line linear (BLL), and broken-line quadratic (BLQ). The best-fitting model for each response was selected using Bayesian information criterion (BIC). Increasing SID Lys linearly improved ($P = 0.001$) G:F. There was a marginal quadratic response for ADG ($P = 0.067$) with increasing SID Lys. The ADFI increased in a quadratic manner ($P = 0.019$) from 1.05 to 1.25% SID Lys. For ADG, the best-fitting comparable models were BLL [predicted equation: 462– 271 × (1.29– Lys), if SID Lys < 1.29%] and BLQ [predicted equation: 465– 372 × (1.47– Lys)^2, if SID Lys < 1.47%], estimating the requirement at 1.29% (95% CI: [1.23, 1.35]%) and 1.47% (95% CI: [1.31, > 1.55]%), respectively. For G:F, the best-fitting models were QP [predicted equation: 0.750– 0.317 × (Lys) + 0.214 × (Lys)^2] and LM [predicted equation: 0.392 + 0.241 × (Lys)], estimating the requirement at greater than 1.55% for both models. In conclusion, the estimated mean SID Lys required for nursery pigs from 6.8 to 15.9 kg ranged from 1.29% for maximum ADG to at least 1.55% for maximum G:F.

Table 408. Effect of SID Lys on growth performance of 6.8 to 15.9 kg pigs

	SID Lys, %							Probability, $P <$	
Item	1.05	1.15	1.25	1.35	1.45	1.55	SEM	Linear	Quadratic
ADG, g	404	404	453	444	458	458	9.07	0.001	0.067
ADFI, g	616	621	653	635	612	599	13.61	0.158	0.019
G:F	0.651	0.652	0.699	0.704	0.752	0.768	0.009	0.001	0.349

Key Words: growth, lysine, nursery pig

409 Comparison of delayed weaning on lamb growth and parasitism while grazing red clover.

K. Nickles*[1], J. S. McCutcheon[2], D. Clevenger[3], G. Lowe[3], M. Sword[3], F. L. Fluharty[3], *[1]The Ohio State University, Columbus, [2]The Ohio State University, Mount Gilead, [3]The Ohio State University, Wooster.*

The objective of this study was to compare weaning at 60 versus100 d of age on lamb growth and parasitism while grazing red clover, followed by a feedlot phase where lambs were taken to a similar final weight. Each weaning treatment consisted of 3 replicate fields of 6 lambs per field, blocked by initial starting weight. Single lambs were used. Treatments were weaned (WEAN) lambs and lambs left with its mother for the pasture phase (NURSE). Paddock size matched stocking density between ewes with lambs and weaned lambs. At 100 d of age lambs were moved into a feedlot and finished on an 85% grain 15% forage diet to approximately 59 kg. Statistics were run using SAS Proc Mixed with PDIFF for mean separation. At the end of the pasture phase, lamb live weight was greater ($P < 0.05$) for the NURSE lambs (LSM ± SEM) (38.92 ± 2.09 kg) compared with the WEAN lambs (31.82 ± 2.09 kg). When grazing pasture, ADG was greater ($P < 0.05$) for the NURSE (360 ± 27 g/d) compared with the WEAN (196 ± 27 g/d) lambs. Packed Cell Volumes were lesser ($P < 0.05$) for the WEAN lambs (30.9 ± 0.5) at 35 d than the NURSE lambs (34.2 ± 0.5). Fecal egg counts were not different for the WEAN lambs (66.4 ± 12.3) at 35 d compared to the NURSE lambs (31.9 ± 12.3) ($P > 0.05$). Weaning at 100 d produced greater gains and lower measures of parasitism on red clover compared to weaning at 60 d.

Key Words: Lamb, Growth, Weaning