

0.21-hectare plots as follows: control (CON), plants received no application; treatment 1 (V5), plants received one application at corn vegetative stage 5 (V5); treatment 2 (V5R1), plants received two applications at V5 and corn reproductive stage 1 (R1); treatment 3 (R1), plants received one application at R1. At reproductive stages R1 (TP1) and R5 (TP2), 12 corn plants per plot were evaluated and the number of yellow leaves was recorded. At TP2, corn plants in R1 and V5R1 had less ($P=0.0001$) yellow leaves (0.35 and 0.47; SEM=0.19, respectively) than CON and V5 (0.63 and 1.08; SEM=0.19, respectively). Ten random plants from each plot were evaluated for disease at stages V5, R1, and R5. Disease prevalence was recorded as percent of the total individual plant infected. Fungicide application had no effect ($P=0.5922$) on disease prevalence (1.62%, 1.07%, 1.23%, 1.48%; SEM=0.30 for CON, V5, V5R1, and R1, respectively). On August 30, 2017, WPCS was harvested at $34.0 \pm 1.6\%$ dry matter (DM). Each plot consisted of 16 rows; 8 of which were harvested at a cut height of 30.5 cm (LC) and 8 of which were harvested at a cut height of 56 cm (HC). Fungicide application had no effect on WPCS DM, gross yield, or DM yield ($P>0.51$). Dry matter of WPCS was higher ($P=0.0012$) in HC than LC (34.57% and 33.43%; SEM=0.39, respectively). Gross yield of WPCS was lower ($P=0.0023$) in HC than LC (38,281 and 41,931; SEM=1,050; kg/ha, respectively). Dry matter yield of WPCS was lower ($P=0.0284$) for HC than LC (13,234 and 14,004; SEM=362; kg/ha, respectively). Increasing the chop height from 30.5 cm to 56 cm resulted in an 8.70% gross yield loss, but only resulted in a 5.49% loss of dry matter yield content. In conclusion, fungicide application had no effect on disease prevalence in corn plants, but did reduce the number of yellow leaves. Additionally, fungicide application had no effect on DM, gross yield or DM yield of WPCS. Cut height reduced gross yield and DM yield of WPCS, but increased the DM of WPCS.

Key Words: Whole plant corn silage, Foliar fungicide, Yield

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An experiment was conducted to determine the standardized ileal digestible (SID) His:Lys ratio requirement for 7 to 11 kg pigs. A total of 360 pigs (DNA 600 × 241, initially 7.1 ± 0.31 kg BW) were fed experimental diets for 10 d with 12 replicates and 5 pigs per pen. Pens were blocked by weight and assigned in a randomized complete block design to 1 of 6 dietary treatments containing 24, 28, 32, 36, 40, or 44% SID His:Lys. Dietary SID Lys was 1.25% and all other AA met or exceeded the NRC (2012) requirement estimates. Diets were corn, spray-dried whey, and whey protein concentrate-based and treatments were formed by adding crystalline L-His at the expense of corn. Response variables ADG, ADFI, and G:F were fitted using general linear and nonlinear mixed models with heterogeneous variances and pen as the experimental unit. Competing models included quadratic polynomial, broken-line linear, and broken-line quadratic. For each response variable, the best fitting model was selected based on Bayesian Information Criterion. Increasing the His:Lys resulted in quadratic increases ($P < 0.01$) in ADG, ADFI, and G:F. The best fitting model for the three response variables was the broken-line linear. For ADG, the requirement was estimated at 29.7% SID His:Lys (95% CI: 27.8 to 31.6). For ADFI, the breakpoint occurred at 29.1% SID His:Lys (95% CI: 27.6 to 30.6). The maximum G:F was obtained at 29.8% SID His:Lys (95% CI: 27.6 to 32.1). In conclusion, the estimated SID His:Lys requirement for 7 to 11 kg pigs ranged from 29.1% to 29.8%.

Key Words: amino acids, nursery pigs, histidine

	SID His:Lys, %						SEM
	24	28	32	36	40	44	
BW d 0	7.1	7.1	7.1	7.1	7.1	7.1	0.306
BW d 10 ¹	10.3	11.3	11.8	11.8	11.5	11.7	0.415
ADG, g ¹	327	423	469	474	448	462	15.16
ADFI, g ¹	463	541	570	572	567	566	19.59
G:F ¹	0.709	0.782	0.826	0.829	0.791	0.818	0.013

¹ Quadratic, $P < 0.01$

POSTER SESSION I: GRADUATE STUDENT POSTER COMPETITION I: PHD

176 Effects of Standardized Ileal Digestible Histidine:Lysine Ratio on Growth Performance of 7 to 11 Kg Pigs. H. S. Cemin^{*,1}, M. D. Tokach¹, C. M. Vier¹, S. S. Dritz¹, J. C.

177 Effects of Metabolizable Protein Level on Mammary Gland Vascularity, Proliferation, and Alveoli Size during Late Gestation in Sheep. H. H. Mansour^{*,1}, A. Reyaz², V. A. Valkov³, L. Lekatz⁴, M. Van Emon⁵, C. S. Schauer⁶,