
1349 (W167) Different corn hybrids fed to growing pigs.**II. Concentrations and digestibility of amino acids.**Y. Liu^{*1}, R. C. Sulabo¹, T. E. Sauber², and H. H. Stein¹,¹*University of Illinois at Urbana-Champaign, Urbana,*²*Pioneer Hi-Bred International Inc., Johnston, IA.*

A total of 42 barrows (initial BW: 28.2 ± 2.91 kg) were used in four experiments to determine the variability in concentration and digestibility of AA in corn hybrids sourced from DuPont Pioneer (Johnston, IA) and to develop prediction equations to estimate the concentration of digestible AA in corn hybrids fed to growing pigs. In Exp. 1, 12 ileal cannulated barrows were allotted to a 12×12 Latin square design with 12 diets and 12 7-d periods. In Exp. 2, 3, and 4, 10 ileal cannulated barrows were allotted to a 10×10 Latin square design with 10 diets and 10 7-d periods. All diets had the same composition with the only difference being that different corn hybrids were used in each diet. Corn was included as 97.0% (as-fed basis) of the diet and was the only AA-contributing ingredient. Descriptive statistics for each chemical component of corn hybrids were determined using PROC MEANS. Simple linear regression analyses were performed using PROC REG of SAS. On an as-fed basis, the average concentration of CP, Arg, His, Ile, Leu, Lys, Met, Phe, Thr, Trp, and Val in the corn hybrids was $7.95 \pm 0.79\%$, $0.36 \pm 0.03\%$, $0.22 \pm 0.02\%$, $0.30 \pm 0.03\%$, $1.00 \pm 0.14\%$, $0.21 \pm 0.04\%$, $0.16 \pm 0.02\%$, $0.41 \pm 0.04\%$, $0.28 \pm 0.03\%$, $0.05 \pm 0.01\%$, and $0.40 \pm 0.03\%$, respectively. The average standardized ileal digestibility (SID, %) of CP in the corn hybrids was $84.59 \pm 4.92\%$. The average SID of indispensable AA was $92.63 \pm 3.34\%$ for Arg, $87.75 \pm 3.99\%$ for His, $86.96 \pm 3.30\%$ for Ile, $89.87 \pm 2.58\%$ for Leu, $85.25 \pm 14.34\%$ for Lys, $91.93 \pm 2.49\%$ for Met, $89.29 \pm 2.74\%$ for Phe, $80.75 \pm 4.81\%$ for Thr, $79.46 \pm 6.74\%$ for Trp, and $86.02 \pm 3.89\%$ for Val, respectively. The concentrations of standardized ileal digestible AA is not accurately estimated from the concentration of CP ($0.11 \leq R^2 \leq 0.78$). However, the concentration of each AA can be used to predict the concentration of digestible AA in corn ($R^2 \geq 0.80$). In summary, the variability in AA composition and digestibility of corn hybrids differed between individual AA. The concentration of digestible AA cannot be predicted from CP, but the concentration of each AA can be used to predict the concentration of digestible AA in corn.

Key Words: amino acid digestibility, corn, pigs