265 Standardized Ileal Digestibility of Amino Acids in Three Sources of Hybrids of Rye and in Barley, Wheat, and Corn Fed to Growing Pigs.

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An experiment was conducted to determine the apparent ileal digestibility (**AID**) and the standardized ileal digestibility (**SID**) of AA in 3 varieties of hybrid rye and in one source of barley, wheat, and corn. Seven growing barrows (initial BW = 26.09 ± 2.41 kg) were randomly allotted to a 7 × 7 Latin square design with 7 periods and 7 experimental diets. Six diets included one of the grains as the sole source of AA and an N-free diet was used to determine basal endogenous losses of CP and AA. In each period, ileal digesta were collected for 8 h on d 6 and d 7 following a 5 d adaptation period. At the conclusion of the experiment, all ingredients, diets, and ileal digesta samples were analyzed for CP and AA. Wheat and barley contained more CP and indispensable AA than rye, but rye had greater concentrations of most indispensable AA compared with corn. The SID of CP and all indispensable AA were greater ($P < 0.001$) in barley, wheat, and corn than in the 3 varieties of rye (Table 1). It is likely that the reason for this observation is that rye contains more fructans and soluble dietary fiber than the other cereal grains, which may increase viscosity and reduce the efficiency of endogenous peptidases. In conclusion, hybrid rye has greater concentrations of most AA than corn, but the digestibility of AA in rye is less than in other cereal grains.

Key Words: cereal grains, hybrid rye, amino acid digestibility

Table 1. Standardized ileal digestibility of CP and indispensable AA in hybrid rye, barley, wheat, and corn

	Diet							
Item	Rye Bono	Rye Daniello	Rye Brasetto	Barley	Wheat	Corn	SEM	*P*-value
CP, %	75.2[b]	79.7[b]	76.4[b]	87.1[a]	89.5[a]	89.2[a]	2.2	<0.001
Indispensable AA, %	72.4[b]	76.5[b]	72.4[b]	85.3[a]	86.7[a]	89.0[a]	1.9	<0.001
Arg	79.3[c]	83.3[c]	82.1[c]	90.4[b]	93.4[ab]	97.2[a]	1.9	<0.001
His	75.6[b]	76.2[b]	74.8[b]	86.2[a]	89.4[a]	88.8[a]	1.8	<0.001
Ile	71.7[c]	76.1[b]	74.5[bc]	84.1[a]	86.9[a]	87.4[a]	1.7	<0.001
Leu	74.2[c]	77.2[c]	73.1[c]	85.8[b]	88.2[ab]	92.2[a]	1.7	<0.001
Lys	62.1[bc]	67.4[bc]	60.9[c]	77.3[a]	79.3[a]	78.4[a]	2.7	<0.001
Met	76.4[d]	79.4[c]	78.3[cd]	85.6[b]	89.3[a]	90.9[a]	1.3	<0.001
Phe	77.4[b]	80.2[b]	77.2[b]	87.1[a]	89.0[a]	90.0[a]	1.5	<0.001
Thr	64.0[c]	70.6[b]	628[c].	81.0[a]	80.4[a]	82.1[a]	2.3	<0.001
Trp	71.6[c]	79.5[b]	76.2[bc]	87.8[a]	89.6[a]	88.9[a]	2.5	<0.001
Val	72.4[bc]	76.5[bc]	72.4[c]	85.3[a]	76.7[a]	89.0[a]	1.9	<0.001