

Effect of virginiamycin on apparent ileal digestibility of amino acids by growing pigs

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Virginiamycin (VIR) improves the digestibility of energy and phosphorus, but effects of VIR on AA digestibility have not been documented. Thus we investigated the influence of VIR on apparent ileal digestibility (AID) of AA in growing pigs. A total of 15 barrows with an initial BW of 35 ± 2.7 kg were surgically equipped with a T-cannula in the distal ileum. Animals were randomly allotted to 3 dietary treatments during a 4-wk experiment. Dietary treatments included: 1) basal diet based on corn-soybean meal, 2) basal plus 11 ppm VIR, and 3) basal plus 22 ppm VIR. During wk 1, pigs were fed only a basal diet; during wk 2 to 4, treatment diets were provided. Ileal samples were collected on d 6 and 7 of each week. As presented in Table 1, the AID for most indispensable AA were improved in pigs fed 11 ppm VIR (Ile, Leu, Lys, Met, Phe, Trp, and Val; $P < 0.05$) or 22 ppm VIR (Ile, Leu, Met, Phe, Thr, Trp, and Val; $P < 0.05$) during wk 2 to 4. The AID for some dispensable AA were also increased in pigs fed 11 ppm VIR (Ala, Asp, and Tyr; $P < 0.05$) or 22 ppm VIR (Ala, Cys, Glu, Pro, and Tyr; $P < 0.05$). However, the AID of AA was indifferent between pigs fed 11 ppm VIR and those fed 22 ppm VIR. The present results indicate that dietary VIR improves ileal digestibility of most indispensable AA and that this effect is not further enhanced by providing more than 11 ppm VIR.

Table 1. Apparent ileal digestibility of indispensable AA during wk 2 to 4

Item	Virginiamycin, ppm			SEM	P-values	
	0	11	22		0 vs. 11	0 vs. 22
Arg	88.2	89.1	88.7	0.53	0.27	0.53
His	82.1	83.5	83.5	0.57	0.08	0.08
Ile	80.0	81.8	82.2	0.57	0.04	0.01
Leu	81.0	83.1	83.5	0.56	0.01	<0.01
Lys	81.5	84.1	83.2	0.75	0.01	0.12
Met	83.1	85.6	85.3	0.62	<0.01	0.02
Phe	80.3	82.4	82.6	0.57	0.01	<0.01
Thr	71.6	73.4	73.9	0.80	0.11	0.05
Trp	73.2	78.3	79.3	0.90	<0.01	<0.01
Val	76.0	78.7	79.8	0.71	0.01	<0.01

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