

1 **Table 1:** Effects of dietary threonine, tryptophan, and glycine supplementation on growth  
 2 performance of broiler chickens raised under normal and multiple stress conditions.<sup>1</sup>

Item <sup>3</sup>	Dietary treatments <sup>2</sup>					SEM	P-value
	PC	NC	Thr	Trp	Gly		
BW, g	2,229 <sup>a</sup>	2,012 <sup>b</sup>	2,012 <sup>b</sup>	2,024 <sup>b</sup>	1,981 <sup>b</sup>	15.6	<0.01
BWG, g	1,264 <sup>a</sup>	1,047 <sup>b</sup>	1,047 <sup>b</sup>	1,059 <sup>b</sup>	1,015 <sup>b</sup>	15.7	<0.01
FI, g	2,012 <sup>a</sup>	1,773 <sup>b</sup>	1,659 <sup>c</sup>	1,740 <sup>b</sup>	1,676 <sup>c</sup>	17.3	<0.01
FE, g/kg	628 <sup>a</sup>	590 <sup>c</sup>	631 <sup>a</sup>	609 <sup>b</sup>	606 <sup>bc</sup>	6.2	<0.01

3 <sup>a-c</sup>Means within a variable with no common superscript differ significantly ( $P < 0.05$ ).

4 <sup>1</sup>Data are least squares means of 8 observations per treatment.

5 <sup>2</sup>Dietary treatments = PC, positive control (basal diet; normal condition); NC, negative  
 6 control (basal diet; multiple stress condition); Thr, NC + 100% L-threonine (99%, CJ bio, Seoul,  
 7 Republic of Korea); Trp, NC + 100% L-tryptophan (99%, CJ bio, Seoul, Republic of Korea);  
 8 Gly, NC + 100% L-glycine (99%, Samin chem, siheung-si, Republic of Korea).

9 <sup>3</sup>BW, body weight, BWG, body weight gain; FI, feed intake; FE, feed efficiency.

10 **Table 2:** Effects of dietary threonine, tryptophan, and glycine supplementation on intestinal  
 11 barrier function of broiler chickens raised under normal and multiple stress conditions.<sup>1</sup>

Item <sup>3</sup>	Dietary treatments <sup>2</sup>					SEM	P-value
	PC	NC	Thr	Trp	Gly		
PD, mV	373 <sup>a</sup>	223 <sup>c</sup>	327 <sup>ab</sup>	284 <sup>bc</sup>	333 <sup>ab</sup>	26.2	<0.01
Isc, $\mu\text{a}/\text{cm}^2$	0.63	0.62	0.60	0.58	0.68	0.038	0.43
TEER, $\Omega/\text{cm}^2$	595 <sup>a</sup>	362 <sup>c</sup>	541 <sup>ab</sup>	499 <sup>b</sup>	492 <sup>b</sup>	28.7	<0.01

12 <sup>a-c</sup>Means within a variable with no common superscript differ significantly ( $P < 0.05$ ).

13 <sup>1</sup>Data are least squares means of 8 observations per treatment.

14 <sup>2</sup>Dietary treatments = PC, positive control (basal diet; normal condition); NC, negative  
 15 control (basal diet; multiple stress condition); Thr, NC + 100% L-threonine (99%, CJ bio, Seoul,  
 16 Republic of Korea); Trp, NC + 100% L-tryptophan (99%, CJ bio, Seoul, Republic of Korea);  
 17 Gly, NC + 100% L-glycine (99%, Samin chem, siheung-si, Republic of Korea).

18 <sup>3</sup>PD, trans-epithelial voltage; Isc, short circuit current; TEER, trans-epithelial electrical  
 19 resistance.