

Table 1. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on growth performance in weaned pigs<sup>1</sup>

Items	CON	T1	T2	SE	p-value
BW, kg					
Initial	9.39	9.39	9.40	0.39	1.000
2w	14.45	14.19	14.37	0.41	0.901
4w	23.34	22.71	23.03	0.68	0.812
6w	34.64	33.99	34.81	1.05	0.843
0-2w					
ADG, g	361.38	343.25	355.13	10.03	0.445
ADFI, g	495.63	486.00	490.00	14.03	0.889
G:F	0.73	0.71	0.72	0.02	0.731
2-4w					
ADG, g	634.88	608.50	618.50	23.97	0.738
ADFI, g	1034.50	993.50	1005.00	23.47	0.457
G:F	0.61	0.61	0.62	0.02	0.986
4-6w					
ADG, g	807.13	805.25	842.00	67.07	0.910
ADFI, g	1526.00	1510.63	1564.38	61.66	0.819
G:F	0.53	0.53	0.54	0.03	0.941
0-6w					
ADG, g	601.13	585.63	605.13	22.65	0.815
ADFI, g	1018.50	998.88	1019.75	21.73	0.708
G:F	0.59	0.59	0.59	0.01	0.922

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; BW, body weight; ADG, average daily gain; ADFI, average daily feed intake; G:F, feed efficiency; SE, standard error.

Table 2. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on nutrient digestibility in weaned pigs<sup>1</sup>

Items, %	CON	T1	T2	SE	p-value
2w					
DM	83.70	82.39	82.42	0.63	0.290
CP	71.85 <sup>a</sup>	70.43 <sup>a</sup>	68.00 <sup>b</sup>	0.75	0.016
GE	73.72	73.09	72.25	0.85	0.494
4w					
DM	83.02	81.73	82.17	0.70	0.447
CP	71.96	70.10	70.11	1.01	0.363
GE	73.73	72.93	72.27	1.02	0.615
6w					
DM	83.95	82.67	82.75	0.96	0.590
CP	72.57 <sup>a</sup>	71.63 <sup>ab</sup>	70.51 <sup>b</sup>	0.43	0.023
GE	74.37	72.50	71.54	0.82	0.095

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; DM, dry matter; CP, crude protein; GE, gross energy; SE, standard error.

<sup>a,b</sup>Means with different letters are significantly differ ( $p < 0.05$ ).

Table 3. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on amino acid digestibility in weaned pigs at 2 w<sup>1</sup>

Items. %	CON	T1	T2	SE	p-value
Indispensable amino acids					
Threonine	65.20	67.88	68.01	1.375	0.332
Valine	50.02	53.63	52.72	2.823	0.662
Isoleucine	45.63	48.35	47.81	3.725	0.864
Leucine	59.55	64.28	62.81	1.609	0.185
Phenylalanine	59.63	62.45	61.50	2.506	0.732
Histidine	64.09	64.04	67.55	3.043	0.664
Lysine	74.35 <sup>b</sup>	76.65 <sup>a</sup>	76.07 <sup>ab</sup>	0.432	0.022
Arginine	85.01	76.52	78.51	3.791	0.323
Methionine	72.67	72.96	77.98	2.805	0.383
Tryptophan	69.26	66.72	67.19	3.057	0.827
Dispensable amino acids					
Aspartic acid	66.10	68.25	68.79	0.877	0.151
Serine	65.18	67.37	68.55	1.778	0.446
Glutamic acid	71.83	73.23	74.76	0.708	0.070
Proline	66.36	67.31	68.71	1.629	0.616
Glycine	59.19	59.32	60.53	1.610	0.816
Alanine	53.55	56.24	54.38	2.045	0.655
Tyrosine	51.21	55.18	54.53	4.700	0.820
Cystein	61.92	65.23	69.82	2.375	0.139

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; SE, standard error.

<sup>a,b</sup>Means with different letters are significantly differ ( $p < 0.05$ ).

Table 4. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on amino acid digestibility in weaned pigs at 6 w<sup>1</sup>

Items. %	CON	T1	T2	SE	p-value
Indispensable amino acids					
Threonine	68.21	69.19	71.66	0.995	0.114
Valine	54.00	53.79	57.76	2.279	0.435
Isoleucine	51.67	48.14	54.16	2.673	0.344
Leucine	64.38	64.03	67.62	1.564	0.278
Phenylalanine	64.31	64.13	65.74	1.809	0.796
Histidine	64.22	65.23	70.09	2.416	0.263
Lysine	76.02 <sup>b</sup>	77.33 <sup>ab</sup>	79.05 <sup>a</sup>	0.448	0.009
Arginine	78.40 <sup>b</sup>	81.30 <sup>a</sup>	81.25 <sup>a</sup>	0.490	0.008
Methionine	67.29 <sup>b</sup>	69.91 <sup>ab</sup>	72.26 <sup>a</sup>	0.824	0.015
Tryptophan	80.59	72.01	74.39	2.031	0.058
Dispensable amino acids					
Aspartic acid	70.50	71.28	73.26	1.072	0.251
Serine	67.60	69.21	71.71	1.944	0.383
Glutamic acid	75.95	76.52	78.86	1.088	0.216
Proline	68.66	69.09	72.91	1.880	0.287
Glycine	61.96	59.72	62.98	1.013	0.145
Alanine	58.29	56.75	60.26	2.009	0.504
Tyrosine	58.72	59.34	60.75	3.409	0.913
Cystein	53.92	56.43	59.74	3.634	0.558

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; SE, standard error.

<sup>a,b</sup>Means with different letters are significantly differ ( $p < 0.05$ ).

Table 5. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on blood profile in weaned pigs<sup>1</sup>

Items	CON	T1	T2	SE	P-value
2 w					
RBC, 10 <sup>6</sup> /μl	6.85	7.04	6.87	0.22	0.801
WBC, 10 <sup>3</sup> /μl	19.24	18.64	18.65	1.26	0.929
Lymphocyte, %	62.75	60.05	59.25	4.15	0.826
TP, g/dL	4.88	4.90	4.88	0.19	0.994
BUN, mg/dL	8.50	8.75	9.00	0.97	0.936
4 w					
RBC, 10 <sup>6</sup> /μl	7.24	6.95	6.86	0.28	0.622
WBC, 10 <sup>3</sup> /μl	18.57	18.69	18.45	2.47	0.998
Lymphocyte, %	59.20	58.15	59.08	8.01	0.995
TP, g/dL	5.05	4.98	4.83	0.10	0.303
BUN, mg/dL	11.50	10.00	11.50	1.41	0.698
6 w					
RBC, 10 <sup>6</sup> /μl	7.03	7.26	6.82	0.15	0.850
WBC, 10 <sup>3</sup> /μl	20.18	21.77	20.56	2.05	0.164
Lymphocyte, %	60.50	60.65	58.75	4.07	0.935
TP, g/dL	5.28	5.25	5.23	0.09	0.929
BUN, mg/dL	6.75	7.25	7.50	0.89	0.835

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; RBC, red blood cell; WBC, white blood cell; TP, total protein; BUN, blood urea nitrogen; SE, standard error.

Table 6. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on gas emission in weaned pigs<sup>1</sup>

Items	CON	T1	T2	SE	P-value
2 w					
NH <sub>3</sub>	7.52	7.98	7.38	0.33	0.445
H <sub>2</sub> S	5.13	5.48	5.63	0.30	0.504
VFA	3.40	3.53	3.50	0.25	0.931
4 w					
NH <sub>3</sub>	8.43	8.28	8.78	0.33	0.572
H <sub>2</sub> S	5.25	5.60	5.63	0.55	0.866
VFA	3.25	3.63	3.45	0.32	0.723
6 w					
NH <sub>3</sub>	8.28	8.53	8.68	0.31	0.663
H <sub>2</sub> S	5.53	5.30	5.65	0.55	0.902
VFA	3.50	3.60	3.30	0.16	0.428

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; NH<sub>3</sub>, ammonia; H<sub>2</sub>S, hydrogen sulfide; VFA, volatile fatty acid; SE, standard error.

Table 7. The effect of replacement dietary of animal protein with insect meal (*Hermetia illucens*) on the fecal microbial in weaned pigs<sup>1</sup>

Items, log <sub>10</sub> cfu/g	CON	T1	T2	SE	P-value
2 w					
<i>E. coli</i>	6.45	6.48	6.38	0.05	0.346
<i>Lactobacillus</i>	7.49	7.45	7.45	0.07	0.932
4 w					
<i>E. coli</i>	6.40	6.48	6.40	0.06	0.556
<i>Lactobacillus</i>	7.52 <sup>ab</sup>	7.47 <sup>b</sup>	7.64 <sup>a</sup>	0.04	0.032
6 w					
<i>E. coli</i>	6.42	6.40	6.41	0.05	0.973
<i>Lactobacillus</i>	7.51	7.51	7.55	0.08	0.916

<sup>1</sup>Abbreviation : CON, basal diet; T1, basal diet without a fish meal and substitute with defatted *Hermetia illucens* (HI) powder; T2, basal diet without a fish meal and substitute with hydrolyzed HI powder; *E. coli*, *Escherichia coli*; SE, standard error.

<sup>a,b</sup>Means with different letters are significantly differ ( $p < 0.05$ ).