

**Table S1.** Effects of the fibrous root of *P. cyrtoneura* Hua on growth performance of white-feather.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
<b>1~21d</b>						
Initial weight (g)	46	46	46	46	46	46
Final weight (g)	708.57±34.83 <sup>Aa</sup>	637.17±99.81 <sup>ABab</sup>	573.62±95.66 <sup>ABbc</sup>	511.30±96.62 <sup>Bc</sup>	552.31±51.58 <sup>Bbc</sup>	569.91±84.46 <sup>ABbc</sup>
ADG (g)	31.81±1.85 <sup>Aa</sup>	27.02±5.56 <sup>ABab</sup>	24.93±4.67 <sup>ABbc</sup>	20.78±5.59 <sup>Bc</sup>	23.64±2.91 <sup>Bbc</sup>	24.51±4.37 <sup>ABbc</sup>
ADFI (g)	42.59±2.57 <sup>a</sup>	41.29±8.39 <sup>bc</sup>	36.17±5.60 <sup>bc</sup>	34.14±6.44 <sup>c</sup>	36.35±4.84 <sup>bc</sup>	36.80±6.72 <sup>bc</sup>
F/G	1.34±0.05 <sup>Bc</sup>	1.54±0.51 <sup>ABab</sup>	1.47±0.17 <sup>ABbc</sup>	1.67±0.14 <sup>Aa</sup>	1.54±0.08 <sup>ABab</sup>	1.50±0.12 <sup>ABabc</sup>
<b>22~42d</b>						
Final weight (g)	2476.67±70.90 <sup>ABa</sup>	2712.08±321.42 <sup>Aa</sup>	2559.49±108.56 <sup>ABab</sup>	2275.04±215.72 <sup>Bc</sup>	2350.89±158.60 <sup>Bbc</sup>	2541.91±237.20 <sup>ABab</sup>
ADG (g)	83.70±3.21 <sup>Bb</sup>	97.80±12.10 <sup>Aa</sup>	91.11±4.08 <sup>ABab</sup>	83.96±6.90 <sup>Bb</sup>	84.86±6.57 <sup>ABbc</sup>	92.81±10.26 <sup>ABab</sup>
ADFI (g)	134.03±11.67 <sup>ab</sup>	145.68±16.01 <sup>a</sup>	130.74±16.26 <sup>ab</sup>	126.56±14.18 <sup>b</sup>	129.85±12.16 <sup>ab</sup>	140.00±13.05 <sup>ab</sup>
F/G	1.60±0.16	1.50±0.15	1.43±0.16	1.51±0.18	1.53±0.16	1.52±0.14
<b>1~42d</b>						
ADG (g)	63.30±3.66 <sup>Aa</sup>	63.48±7.65 <sup>Aa</sup>	59.85±2.58 <sup>ABab</sup>	53.07±5.14 <sup>Bc</sup>	54.88±3.78 <sup>ABbc</sup>	59.43±5.65 <sup>ABab</sup>
ADFI (g)	88.31±6.86	93.48±9.37	80.60±10.73	88.55±15.47	83.38±5.61	88.84±9.39
F/G	1.39±0.07 <sup>Bb</sup>	1.48±0.08 <sup>ABb</sup>	1.35±0.19 <sup>Bb</sup>	1.67±0.22 <sup>Aa</sup>	1.52±0.13 <sup>ABab</sup>	1.50±0.09 <sup>ABab</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P < 0.05$ ), and with different capital letter superscripts mean significant difference ( $P < 0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P > 0.05$ ).

**Table S2.** Effects of the fibrous root of *P. cyrtoneura* Hua on slaughter performance of white-feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
Dressing percentage	90.57±2.36 <sup>B</sup>	91.30±1.89 <sup>B</sup>	94.23±2.05 <sup>A</sup>	95.14±1.28 <sup>A</sup>	95.63±1.70 <sup>A</sup>	94.97±1.32 <sup>A</sup>
Semi-eviscerated rate	82.19±3.34 <sup>b</sup>	83.93±3.14 <sup>ab</sup>	85.09±2.12 <sup>ab</sup>	86.25±1.52 <sup>a</sup>	86.25±1.38 <sup>a</sup>	84.87±2.98 <sup>ab</sup>
Eviscerated rate	71.61±3.62	72.16±2.80	73.68±2.08	74.28±1.45	74.45±1.04	73.48±2.33
Breast muscle rate	22.18±1.68	21.26±1.34	22.68±1.79	22.72±1.11	22.88±1.09	20.91±2.39
Thigh muscle rate	14.65±0.91 <sup>ab</sup>	13.59±0.87 <sup>ab</sup>	14.16±1.83 <sup>ab</sup>	14.35±0.99 <sup>ab</sup>	13.41±1.91 <sup>b</sup>	15.45±1.08 <sup>a</sup>
Abdominal fat rate	1.52±0.46 <sup>Aa</sup>	0.74±0.26 <sup>Bb</sup>	1.01±0.49 <sup>ABb</sup>	1.03±0.32 <sup>ABb</sup>	0.64±0.33 <sup>Bb</sup>	0.91±0.25 <sup>ABb</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ )

**Table S3.** Effects of the fibrous root of *P. cyrtoneura* Hua on leg muscle of white-feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
L*	52.57±5.54	49.13±7.66	51.41±3.48	53.32±4.37	49.66±4.16	49.64±2.14
a*	17.00±4.48 <sup>ab</sup>	18.77±4.36 <sup>ab</sup>	18.84±1.69 <sup>ab</sup>	16.80±2.41 <sup>b</sup>	19.67±2.31 <sup>Ab</sup>	21.18±2.79 <sup>a</sup>
b*	11.22±3.18	11.20±1.98	10.73±1.13	9.64±1.74	10.50±1.31	11.13±1.73
pH45min	6.29±0.33	6.50±0.16	6.34±0.28	6.30±0.18	6.46±0.16	6.28±0.09
pH24h	5.74±0.39 <sup>b</sup>	6.00±0.16 <sup>ab</sup>	6.02±0.09 <sup>a</sup>	6.10±0.22 <sup>a</sup>	6.06±0.16 <sup>a</sup>	5.97±0.04 <sup>ab</sup>
pH reduction	0.55±0.52	0.49±0.10	0.32±0.26	0.33±0.21	0.40±0.15	0.30±0.06
Shear force/N	25.38±3.78 <sup>Bb</sup>	41.68±15.95 <sup>ABa</sup>	40.42±8.61 <sup>ABa</sup>	42.12±9.90 <sup>ABa</sup>	47.33±10.03 <sup>Aa</sup>	37.81±10.64 <sup>ABa</sup>
Drip loss	11.65±6.7 <sup>ab</sup>	12.38±3.83 <sup>a</sup>	10.38±9.94 <sup>ab</sup>	4.35±2.40 <sup>b</sup>	4.64±1.27 <sup>b</sup>	9.34±5.58 <sup>ab</sup>
Pressure loss	11.40±6.16 <sup>a</sup>	9.87±5.00 <sup>a</sup>	10.57±2.35 <sup>a</sup>	8.61±6.76 <sup>ab</sup>	5.56±2.47 <sup>b</sup>	11.37±3.96 <sup>a</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ ).

**Table S4.** Effects of the fibrous root of *P. cyrtoneura* Hua on breast muscle of white-feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
L*	52.06±4.87	51.70±5.20	51.13±3.70	52.61±2.61	53.69±1.98	52.01±4.35
a*	14.15±5.32	20.80±10.26	16.86±5.57	21.70±5.70	20.12±4.22	21.65±4.19
b*	9.03±1.61 <sup>b</sup>	13.42±4.28 <sup>a</sup>	10.24±3.33 <sup>ab</sup>	11.86±2.04 <sup>ab</sup>	11.39±1.83 <sup>ab</sup>	12.29±2.16 <sup>ab</sup>
pH45min	6.26±0.46	6.45±0.37	6.45±0.25	6.53±0.09	6.54±0.23	6.41±0.19
pH24h	5.77±0.12	5.82±0.16	5.84±0.15	5.81±0.11	5.84±0.09	5.81±0.10
pH reduction	0.49±0.43	0.63±0.40	0.62±0.29	0.71±0.13	0.69±0.26	0.60±0.22
Shear force/N	25.44±9.94	33.20±13.64	35.02±5.75	32.10±6.57	35.62±15.90	35.92±15.66
Drip loss	9.00±3.93 <sup>ABabc</sup>	12.02±3.38 <sup>ABab</sup>	17.44±13.71 <sup>Aa</sup>	2.17±1.60 <sup>Bc</sup>	4.49±0.83 <sup>Bbc</sup>	9.67±6.05 <sup>ABabc</sup>
Pressure loss	9.86±4.98 <sup>ab</sup>	8.81±4.11 <sup>ab</sup>	11.94±5.72 <sup>a</sup>	5.00±3.73 <sup>b</sup>	4.94±2.41 <sup>b</sup>	12.40±6.38 <sup>a</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ ).

**Table S5.** Effects of the fibrous root of *P. cyrtoneura* Hua on immune organ index of white-feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
<b>0~21d</b>						
Liver	26.54±2.50	29.54±3.38	27.48±2.83	26.73±7.10	27.64±2.01	27.42±1.92
Thymus	3.32±0.76 <sup>ab</sup>	3.52±1.27 <sup>ab</sup>	2.79±0.59 <sup>b</sup>	3.94±1.06 <sup>ab</sup>	4.16±0.40 <sup>a</sup>	3.33±0.97 <sup>ab</sup>
Spleen	0.78±0.24	1.01±0.38	1.07±0.47	0.73±0.10	1.03±0.20	0.99±0.18
Bursa	2.27±0.66	1.74±0.24	2.24±0.75	2.26±1.11	2.13±0.53	2.36±0.50
<b>22~42d</b>						
Liver	20.53±2.63	19.07±2.02	20.90±2.66	19.83±3.08	22.27±2.27	21.50±4.55
Thymus	1.34±1.02 <sup>Bc</sup>	2.39±0.78 <sup>ABabc</sup>	3.47±1.28 <sup>Aa</sup>	2.76±1.11 <sup>ABab</sup>	1.93±0.89 <sup>ABbc</sup>	2.14±0.69 <sup>ABbc</sup>
Spleen	1.19±0.44	1.40±0.51	1.24±0.18	1.36±0.24	1.65±0.72	1.61±0.71
Bursa	0.63±0.29 <sup>b</sup>	0.69±0.21 <sup>b</sup>	0.66±0.24 <sup>b</sup>	0.63±0.14 <sup>b</sup>	1.16±0.73 <sup>a</sup>	0.67±0.18 <sup>b</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ ).

**Table S6.** Effects of the fibrous root of *P. cyrtoneura* Hua on immunoglobulin levels in white-feather.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
<b>1~21d</b>						
IgG (μg/mL)	63.20±3.77 <sup>A</sup>	54.65±3.17 <sup>B</sup>	54.90±3.40 <sup>B</sup>	48.35±5.04 <sup>C</sup>	61.96±3.87 <sup>A</sup>	56.83±3.51 <sup>B</sup>
IgM (ng/mL)	2544.77±184.00 <sup>Bc</sup>	2663.69±184.02 <sup>Bbc</sup>	2552.57±123.20 <sup>Bc</sup>	3122.16±227.34 <sup>Aa</sup>	2870.51±158.54 <sup>ABb</sup>	2659.01±279.02 <sup>Bbc</sup>
IgA (ng/mL)	7936.40±396.41 <sup>B</sup>	8894.81±492.69 <sup>A</sup>	8754.30±462.51 <sup>A</sup>	7482.38±401.43 <sup>B</sup>	6455.75±350.24 <sup>C</sup>	8967.50±322.62 <sup>A</sup>
C3 (μg/mL)	804.88±37.57 <sup>A</sup>	768.10±29.70 <sup>A</sup>	671.56±36.36 <sup>B</sup>	810.09±39.57 <sup>A</sup>	777.67±28.35 <sup>A</sup>	785.36±34.30 <sup>A</sup>
C4 (μg/mL)	431.24±20.01 <sup>CDd</sup>	454.43±11.62 <sup>BCcd</sup>	480.50±23.96 <sup>ABbc</sup>	515.00±18.53 <sup>Aa</sup>	401.03±25.94 <sup>De</sup>	485.13±26.08 <sup>ABb</sup>
<b>22~42d</b>						
IgG (μg/mL)	76.61±4.27 <sup>D</sup>	63.70±3.43 <sup>E</sup>	83.60±4.06 <sup>C</sup>	93.52±2.84 <sup>B</sup>	103.47±3.90 <sup>A</sup>	100.03±4.92 <sup>A</sup>
IgM (ng/mL)	4429.94±256.11 <sup>Ab</sup>	3098.34±238.85 <sup>Bc</sup>	4554.18±236.18 <sup>Aab</sup>	4654.23±239.74 <sup>Aab</sup>	4783.50±196.50 <sup>Aa</sup>	4712.24±177.53 <sup>Aab</sup>
IgA (ng/mL)	9438.17±163.53 <sup>ABb</sup>	9789.05±240.38 <sup>Aa</sup>	9281.64±335.69 <sup>Bb</sup>	8466.90±223.08 <sup>Cc</sup>	8647.87±368.56 <sup>Cc</sup>	8314.88±300.74 <sup>Cc</sup>
C3 (μg/mL)	847.80±35.13 <sup>ABb</sup>	865.49±13.91 <sup>Aab</sup>	795.98±40.14 <sup>Bc</sup>	900.88±46.10 <sup>Aa</sup>	881.62±38.15 <sup>Aab</sup>	860.32±41.10 <sup>Aab</sup>
C4 (μg/mL)	578.89±31.99 <sup>ABa</sup>	572.60±27.10 <sup>ABa</sup>	587.90±20.31 <sup>Aa</sup>	541.35±23.53 <sup>Bb</sup>	600.77±28.48 <sup>Aa</sup>	600.56±15.00 <sup>Aa</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P < 0.05$ ), and with different capital letter superscripts mean significant difference ( $P < 0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P > 0.05$ ).

**Table S7.** Effects of the fibrous root of *P. cyrtonema* Hua on mRNA expression levels of cytokines in serum of white-feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
<b>1~21d</b>						
IL-2	1.37±1.09 <sup>Bb</sup>	2.90±2.17 <sup>Aa</sup>	0.21±0.18 <sup>Bbc</sup>	0.15±0.06 <sup>Bc</sup>	0.10±0.02 <sup>Bc</sup>	0.52±0.20 <sup>Bbc</sup>
IFN-γ	1.40±1.22 <sup>ABb</sup>	2.62±2.19 <sup>Aa</sup>	0.19±0.13 <sup>Bbc</sup>	0.19±0.10 <sup>Bbc</sup>	0.12±0.05 <sup>Bc</sup>	0.53±0.26 <sup>Bbc</sup>
<b>22~42d</b>						
IL-2	1.18±0.78 <sup>BCc</sup>	1.49±0.72 <sup>BCc</sup>	0.62±0.39 <sup>Cc</sup>	4.41±3.19 <sup>Aa</sup>	3.54±1.62 <sup>ABab</sup>	2.27±1.02 <sup>ABCbc</sup>
IFN-γ	1.18±0.79 <sup>BCc</sup>	1.63±0.82 <sup>BCbc</sup>	0.59±0.39 <sup>Cc</sup>	4.42±2.90 <sup>Aa</sup>	3.40±1.78 <sup>ABab</sup>	2.00±0.69 <sup>BCbc</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ ).

**Table S8.** Effects of the fibrous root of *P. cyrtonema* Hua on antioxidant function of white - feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
<b>1~21d</b>						
T-AOC (U/mL)	0.72±0.10 <sup>Aa</sup>	0.72±0.12 <sup>Aa</sup>	0.65±0.07 <sup>ABab</sup>	0.58±0.07 <sup>Bbc</sup>	0.55±0.05 <sup>Bc</sup>	0.57±0.07 <sup>Bbc</sup>
SOD (U/mL)	85.29±5.38	91.53±4.01	89.57±2.86	87.19±8.74	87.33±6.55	89.40±6.98
MDA (U/mL)	12.58±2.50 <sup>B</sup>	22.48±4.07 <sup>A</sup>	4.99±0.82 <sup>C</sup>	6.38±1.59 <sup>C</sup>	4.46±0.82 <sup>C</sup>	5.10±1.11 <sup>C</sup>
GSH-Px (U/mL)	39.38±4.18 <sup>B</sup>	40.69±3.68 <sup>B</sup>	39.13±3.36 <sup>B</sup>	38.09±4.15 <sup>B</sup>	47.39±4.59 <sup>A</sup>	39.19±2.92 <sup>B</sup>
<b>22~42d</b>						
T-AOC (U/mL)	0.85±0.06 <sup>ABab</sup>	0.93±0.04 <sup>Aa</sup>	0.85±0.02 <sup>ABab</sup>	0.77±0.12 <sup>Bb</sup>	0.85±0.05 <sup>ABab</sup>	0.82±0.08 <sup>ABb</sup>
SOD (U/mL)	76.97±6.76	80.38±13.18	76.40±5.81	79.76±3.14	81.56±9.90	79.75±4.99
MDA (nmol/mL)	7.88±1.82 <sup>C</sup>	30.37±2.68 <sup>A</sup>	15.15±5.50 <sup>B</sup>	12.30±8.90 <sup>B</sup>	12.11±3.80 <sup>B</sup>	16.73±4.60 <sup>B</sup>
GSH-Px (U/mL)	26.11±2.48 <sup>B</sup>	34.06±4.17 <sup>A</sup>	31.02±0.52 <sup>A</sup>	25.30±3.86 <sup>B</sup>	33.45±2.79 <sup>A</sup>	34.27±1.67 <sup>A</sup>

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ ).

**Table S9.** Effects of the fibrous root of *P. cyrtonema* Hua on intestinal morphology of white-feather broilers.

Items	CON Group	ANT Group	LD Group	MD Group	HD Group	PR Group
<b>1~21d</b>						
VH	937.98±196.54 <sup>b</sup>	930.34±130.80 <sup>b</sup>	1083.30±65.23 <sup>ab</sup>	1282.60±295.95 <sup>a</sup>	1179.47±215.31 <sup>ab</sup>	1075.23±213.74 <sup>ab</sup>
CD	217.11±29.46 <sup>ABb</sup>	218.80±38.49 <sup>ABb</sup>	270.40±32.21 <sup>Aa</sup>	226.97±32.63 <sup>ABb</sup>	224.44±44.47 <sup>ABb</sup>	205.19±35.94 <sup>Bb</sup>
V/C	4.33±0.70 <sup>ABbc</sup>	4.29±0.49 <sup>ABbc</sup>	4.05±0.48 <sup>Bc</sup>	5.63±0.95 <sup>Aa</sup>	5.37±1.13 <sup>ABa</sup>	5.26±0.78 <sup>ABab</sup>
<b>22~42d</b>						
VH	1038.94±109.00 <sup>b</sup>	1220.22±203.99 <sup>ab</sup>	1138.63±177.49 <sup>ab</sup>	1333.47±195.97 <sup>a</sup>	1362.66±146.43 <sup>a</sup>	1255.72±310.82 <sup>ab</sup>
CD	221.97±22.22 <sup>b</sup>	245.17±18.80 <sup>ab</sup>	227.35±48.02 <sup>ab</sup>	245.68±38.10 <sup>ab</sup>	267.30±32.36 <sup>a</sup>	210.33±21.92 <sup>b</sup>
V/C	4.71±0.61	5.05±1.21	5.13±1.00	5.50±0.93	5.14±0.63	6.41±1.32

Note: In the same row, values with different small letter superscripts mean significant difference ( $P<0.05$ ), and with different capital letter superscripts mean significant difference ( $P<0.01$ ), while with the same or no letter superscripts mean no significant difference ( $P>0.05$ ).