**Table S1.** Histological inflammation scores of each organization in newly hatched chicks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Items** | **C** | **S** | **P+S** | **P** |
| Appearance | 0.33±0.21c | 3.00±0.26a | 1.67±0.33b | 0.17±0.17c |
| Severity of diarrhea | 0.17±0.17c | 3.00±0.37 a | 1.50±0.22b | 0.50±0.22c |
| Hepatic inflammatory | 0.33±0.21c | 3.50±0.22 a | 1.80±0.31b | 0.17±0.17c |
| Duodenal enteritis | 0.17±0.17c | 3.83±0.17 a | 1.00±0.37b | 0.17±0.17c |
| Cecal colitis | 0.17±0.17c | 3.67±0.21 a | 1.33±0.33b | 0.17±0.17c |
| Crypt damage | 0.17±0.17c | 3.67±0.21 a | 1.67±0.21b | 0.17±0.17c |

Values with different letters (a, b, c) differed significantly within an item (P < 0.05).

The data were expressed as mean ± SEM.

**Table S2.** Determination of duodenal villus length (μm), crypt depth (μm), microvilli length(nm) and villus height / crypt depth ratio in chicks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Items** | **C** | **S** | **P+S** | **P** |
| Villus height | 747.90±23.93a | 536.10±13.97b | 621.60±21.49a | 758.00±12.23a |
| Crypt depth | 100.70±5.36a | 117.40±7.89b | 98.30±3.76 a | 94.70±3.15 a |
| Villus height / Crypt depth | 7.67±0.59 a | 4.74±0.31 c | 6.38±0.27 b | 8.09±0.32a |
| Microvilli length | 955.7±12.00b | 255.2±18.81d | 835.9±23.65c | 1208.4±28.02a |

Values with different letters (a, b, c) differed significantly within an item (P < 0.05).

The data were expressed as mean ± SEM.

**Table S3.** Contents of D-lactic acid (nmol/mL) and endotoxin (EU/mL) in serum of chicks under different treatment methods.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Items** | **C** | **S** | **P+S** | **P** |
| D-lactic acid | 38.32+9.54d | 317.17±27.47a | 209.33±20.85 b | 88.77±4.75c |
| Endotoxin | 0.04±0.01b | 0.54±0.13a | 0.10±0.06 b | 0.04±0.01 b |

Values with different letters (a, b, c, d) differed significantly within an item (P < 0.05).

The data were expressed as mean ± SEM.

**Table S4.** Contents of IL-1β (pg/mL) and IL-18 (pg/mL) in serum of chicks under different treatment methods.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Items** | **C** | **S** | **P+S** | **P** |
| IL-1β | 1003.67±79.64d | 2960.00±203.73a | 2178.17±126.63b | 1142.83±67.35c |
| IL-18 | 221.33±31.51 d | 1321.67±123.18a | 872.17±49.83 b | 379.33±31.65 c |

Values with different letters (a, b, c, d) differed significantly within an item (P < 0.05).

The data were expressed as mean ± SEM.