Table S2. Effects of Virginiamycin and organic acids supplementation on the relative abundance (%) of the predominant microbiota at the phyla level in the cecal digesta of broilers at the age of 21 days in this experiment.

|  |  |  |  |
| --- | --- | --- | --- |
| Taxonomy | Groups 1 | SEM | *P* value |
| NC | PC | DOA | WOA | MOA |
| Firmicutes | 91.56 ab | 83.83 c | 85.88 bc | 95.63 a | 95.59 a | 1.36 | 0.004 |
| Proteobacteria | 4.75 bc | 11.22 a | 8.82 ab | 1.87 c | 1.19 c | 1.06 | 0.003 |
| Bacteroidetes | 0.296 b | 0.391 ab | 0.785 a | 0.286 b | 0.422 ab | 0.071 | 0.153 |
| F/B ratio  | 324.7 ab  | 297.8 ab  | 194.1 b  | 343.5 a  | 302.9 ab  | 22.1 | 0.240 |
| Tenericutes | 3.01 a | 3.94 a | 4.00 a | 1.74 a | 2.26 a | 0.47 | 0.482 |
| Actinobacteria | 0.103 b | 0.253 ab | 0.107 b | 0.329 a | 0.420 a | 0.036 | 0.007 |
| Acidobacteria | 0.0149 ab | 0.0060 b | 0.0325 a | 0.0114 ab | 0.0105 ab | 0.0037 | 0.178 |
| Chloroflexi | 0.0038 a | 0.0014 a | 0.0100 a | 0.0043 a | 0.0068 a | 0.0014 | 0.387 |
| Verrucomicrobia | 0.0062 b | 0.0019 b | 0.0189 a | 0.0060 b | 0.0051 b | 0.0019 | 0.035 |
| Saccharibacteria | 0.00054 b | 0.00081 b | 0.00541 a | 0 b | 0.00027 b | 0.00061 | 0.016 |
| Cyanobacteria | 0.00027 b | 0 b | 0.00271 a | 0 b | 0 b | 0.00039 | 0.111 |
| Gemmatimonadetes | 0.00027 a | 0.00054 a | 0.00189 a | 0.00081 a | 0.00027 a | 0.00027 | 0.284 |
| Planctomycetes | 0.00054 a | 0 a | 0.00189 a | 0.00000 a | 0 a | 0.00034 | 0.417 |
| Others | 0.265 a | 0.358 a | 0.339 a | 0.124 a | 0.097 a | 0.061 | 0.565 |

Notes: Superscript 1: NC = negative control, basal diet and basal drinking water with no antibiotic supplementation; PC = positive control, antibiotics supplementation; DOA = NC plus diet-administered OA supplementation; WOA = NC plus water-administered OA supplementation; MOA = NC plus diet-administered and water-administered OA supplementation. Values are expressed as means with pooled SEM values. *P* value is expressed combined significance. In the same line, values with different letters are significantly different for all possible combinations of these different groups (*P* < 0.05 or *P* < 0.01), n = 8.