**Additional file 2: Statistical analysis of alpha diversity measures for comparing different breeds or line**

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| --- | --- | --- | --- |
| Metrices | Mean values | Kruskal-Wallis test (P-value) | Dunn post hoc test –FDR adjusted P values |
| Broiler | Aseel | Ghagus | Nicobari | Broiler vs Aseel | Broiler vs Ghagus | Broiler vs Nicobari | Aseel vs Ghagus | Aseel vs Nicobari | Ghagus vs Nicobari |
| Richness |
| Observed richness | 818.4 | 3392.6 | 1898.5 | 1747.4 | <0.001 | <0.001 | 0.021 | 0.023 | 0.022 | 0.016 | 0.769 |
| Chao1 | 1186.4 | 5001.9 | 3031.6 | 2806.4 | <0.001 | <0.001 | 0.010 | 0.030 | 0.030 | 0.010 | 0.576 |
| ACE | 1220.6 | 5214.3 | 3197.0 | 2999.5 | <0.001 | <0.001 | 0.014 | 0.023 | 0.023 | 0.014 | 0.729 |
| Diversity |
| Simpson | 0.937 | 0.974 | 0.972 | 0.976 | 0.009 | 0.018 | 0.014 | 0.030 | 1.00 | 1.00 | 0.897 |
| Shannon | 4.03 | 5.02 | 5.03 | 4.91 | 0.006 | 0.040 | 0.021 | 0.024 | 0.827 | 0.891 | 0.894 |
| Fisher | 166.5 | 617.3 | 451.7 | 388.8 | <0.001 | 0.024 | 0.021 | 0.040 | 0.894 | 0.891 | 0.826 |