Supplementary Table 11. Resistome and microbiome richness (R) and Shannon’s diversity (D).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Resistome level** |  | **Microbiome** |
|  |  | Class |  | Mechanism |  | Group |  | Phylum |
| **Factors and levels** |  | R1 | D2 |  | R | D |  | R | D |  | R | D |
| *Production practice* |  |  |  |  |  |  |  |  |  |  |  |  |
| Conventional |  | 7 | 1.1 |  | 15 | 1.4 |  | 45 | 2.5 |  | 35 | 1.2 |
| Without antibiotics |  | 6 | 1.0 |  | 12 | 1.2 |  | 34 | 2.3 |  | 36 | 1.3 |
| Significance3 |  | ns | ns |  | \* | \* |  | \* | ns |  | ns | ns |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Type of sample* |  |  |  |  |  |  |  |  |  |  |  |  |
| Feces, early on feed pens4 |  | 7 | 0.8 |  | 19 | 1.1 |  | 63 | 2.4 |  | 36 | 1.6 |
| Feces, late on feed pens4 |  | 7 | 0.8 |  | 20 | 1.1 |  | 67 | 2.4 |  | 36 | 1.5 |
| Feces, low producing cows5 |  | 7 | 1.4 |  | 15 | 1.7 |  | 43 | 2.6 |  | 35 | 1.4 |
| Feces, high producing cows5 |  | 7 | 1.4 |  | 17 | 1.7 |  | 59 | 2.3 |  | 36 | 1.5 |
| Wastewater |  | 4 | 0.8 |  | 9 | 1.2 |  | 20 | 2.0 |  | 35 | 1.0 |
| Soil |  | 7 | 1.2 |  | 12 | 1.3 |  | 21 | 2.3 |  | 36 | 0.9 |
| Significance |  | \* | \* |  | \* | \* |  | \* | \* |  | ns | \* |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| *Type of cattle* |  |  |  |  |  |  |  |  |  |  |  |  |
| Dairy |  | 6 | 1.1 |  | 12 | 1.4 |  | 32 | 2.3 |  | 36 | 1.2 |
| Feedlot |  | 7 | 0.9 |  | 16 | 1.2 |  | 46 | 2.5 |  | 36 | 1.2 |
| Significance |  | \* | \* |  | \* | ns |  | \* | ns |  | ns | ns |

1R (richness): number of different antibiotic resistance features in the resistome (class, mechanism and group level) and number of different phyla in the microbiome

2D (Shannon’s diversity): index that accounts for both abundance and evenness of the antibiotic resistance features or taxa present in the resistome and microbiome, respectively.

3*P*-value < 0.05: \* (significant); *P*-value > 0.05: ns (not significant)

4 Feces collected from beef cattle in feedlots

5 Feces collected from milking cows in dairy farms