

Supporting documentation

This dataset comprises one csv files entitled Ecolidatafaeces.csv. The file has 38 columns labelled left to right: Sample number. Sample type. Collection method; collected means freshly voided and collected from the floor, grab means from the rectum. Sampling date. Animal 1; animals are identified by their unique ear tag number. Animal 2, Animal 3, Animal 4, Animals 1 to 4 identify the group of pooled animals, samples were pooled at the initial sampling so that sequence libraries could be prepared, nine libraries from 30 animals grouped 3, 3 &4 per farmlet. Farmlet; identifies from which farmlet on the North Wyke farm platform animals came from (blue, green or red). Cohort 1 Or 2; identifies which cohort animals belonged to, cohort changed at slaughter, Date Medicated indicates date animal was medicated, Medication; common name of drug administered, Reason why drug administered, E.coli 10-1 indicates the colonies counted at that dilution, from 10-1 to 10-4, E.coli 10-2, E.coli 10-3, E.coli 10-4, Mean E.coli wet wt. CFU/g the arithmetic mean of the colonies per gram of fresh (wet) faeces, Mean Log E.coli CFU/g wet wt. The arithmetic mean value transformed, Log to base 10 value. Mean E.coli CFU g dry wt, the arithmetic mean presented as dry weight, by multiplying the mean value with % dry matter of that faecal sample. Mean Log₁₀ E.coli CFU/dry wt. g-1 The arithmetic mean value transformed, Log to base 10 value. The following columns are as per the 'straight E.coli counts with the addition of an antibiotic to the media; Tet is tetracycline, Ceph is Cephalexin, Marb is Marbofloxacin, Merop is Meropenem. Ecoli Tet 10-1. Ecoli Tet 10-2. Ecoli Tet 10-3. Mean Tet E.coli wet wt. CFU/g. Mean Log Tet E.coli CFU/g wet wt. Mean Tet E.coli CFU g dry wt. Mean Log₁₀ Tet E.c.oli CFU/drywt g-1. Ecoli Ceph 10-1. Ecoli Ceph 10-2. Ecoli Ceph 10-3. Mean Ceph E.coli wet wt CFU/g. Mean Log Ceph E.coli CFU/g wet wt. Mean Ceph E.coli CFU g dry wt. Mean Log₁₀ Ceph E.c.oli CFU/drywt g-1. Ecoli Marb 10-1. Ecoli Merop 10-1. % DM is the gravimetric dry matter of the faecal matter. TMC is too many colonies to count. NS is not sampled. ND is no data.

Methods

One gram of faecal material was aseptically transferred to 9 ml of sterile Ringers (Oxoid, Basingstoke, UK) and appropriate serial 10-fold dilutions were made. An aliquot (0.1 ml) was plated in duplicate on to Membrane Lactose Glucuronide Agar (MLGA) (Oxoid) and spread across the surface of the agar using a disposal plastic spreader (VWR). Antibiotics were added to the MLGA at suitable concentrations after autoclaving and prior to pouring the plates. Antibiotics were added at the following rates; 16 mg/l for tetracycline and cephalexin, 1.0 mg/l marbofloxacin, 8 mg/l meropenem. All plates were allowed to air dry prior to inversion and incubation, at 44.5 °C (±0.2 °C) for 18–24 h.

Gravimetric moisture content of faecal samples, approximately 50 g of faecal material was accurately weighed into a pre-weighed silver foil container and dried in an oven at 105 °C, until constant weight. To calculate % dry matter: $100 - (((\text{fresh wt.} - \text{Dry wt.}) / (\text{fresh wt.})) * 100)$, effectively 100 – moisture content.

The establishment licence under which the experiment was conducted was XA11784A2 and the project licence was P592D2677.