**Factors associated with pre-slaughter mortality in turkeys and end of lay hens**

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Supplementary Table S1. Output of the robustness/sensitivity analysis of the model on random subsets of the data. n =3 429 (10.00% of the original sample size). Results are expressed as regression coefficients (β) with the 95% confidence interval and *P*-value.

|  |  |  |
| --- | --- | --- |
| Variable | 1° subset of data | 2° subset of data |
|  | β | *P* | 95% CI | β | *P* | 95% CI |
| Sex |  |   |   |   |  |   |   |   |
| Female | ref |   |   |   | ref |   |   |   |
| Male | 0.202 | < 0.001 | 0.174 – 0.231 | 0.210 | < 0.001 | 0.193 – 0.228 |
| Travel duration (min) |   |   |   |  |   |   |   |
| < 30 | ref |   |   |   | ref |   |   |   |
| 30-60 | 0.018 | 0.220 | - 0.011 – 0.047 | 0.002 | 0.791 | - 0.013 – 0.018 |
| > 60 | 0.036 | 0.015 | 0.007 – 0.065 | 0.016 | 0.102 | - 0.003 – 0.035 |
| Temperature (°C) |   |   |   |  |   |   |   |
| ≤ 2 | ref |   |   |   | ref |   |   |   |
| > 2; ≤ 12 | 0.000 | 1.000 | - 0.011 – 0.011 | - 0.002 | 0.763 | - 0.016 – 0.012 |
| > 12; < 26 | 0.018 | 0.044 | 0.001 – 0.036 | 0.038 | < 0.001 | 0.021 – 0.056 |
| ≥ 26 | 0.441 | < 0.001 | 0.256 – 0.626 | 0.565 | < 0.001 | 0.222 – 0.908 |
| Genetic code |  |   |   |   |  |   |   |   |
| A | ref |   |   |   | ref |   |   |   |
| G | 0.000 | 1.000 | - 0.016 – 0.016 | 0.014 | 0.165 | - 0.006 – 0.033 |
| H | - 0.018 | 0.180 | - 0.044 – 0.008 | 0.000 | 1.000 | - 0.017 – 0.017 |
| I | 0.000 | 1.000 | - 0.012 – 0.012 | 0.000 | 1.000 | - 0.013 – 0.013 |
| N | 0.000 | 1.000 | - 0.014 – 0.014 | 0.002 | 0.719 | - 0.009 – 0.014 |

Supplementary Table S2. Ambient temperatures (minimum, maximum and average values) in different seasons associated to turkey and hen transportations. Results are expressed as mean ± standard deviation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Transported birds |  | Min °C | Max °C | Average °C |
| Turkeys | Summer | 18.42 ± 2.67 | 29.96 ± 3.40 | 24.07 ± 2.88 |
|  | Autumn | 10.37 ± 5.46 | 19.95 ± 6.84 | 15.13 ± 5.85 |
|  | Winter | -0.43 ± 3.37 | 7.02 ± 3.69 | 3.40 ± 3.12 |
|  | Spring | 7.98 ± 4.74 | 19.39 ± 6.03 | 13.56 ± 5.05 |
|  |  |  |  |  |  |  |  |
| End of lay hens | Summer | 18.14 ± 2.58 | 30.47 ± 3.31 | 23.96 ± 2.79 |
|  | Autumn | 8.57 ± 5.14 | 18.58 ± 5.95 | 13.64 ± 5.21 |
|  | Winter | -0.70 ± 3.14 | 7.98 ± 3.42 | 4.18 ± 2.82 |
|  | Spring | 8.27 ± 4.40 | 20.51 ± 5.27 | 14.19 ± 4.57 |

Supplementary Table S3. Descriptive statistics of DOA1 of 41 452 turkey loads for environmental temperatures stratified by sex.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | *n* | 25th percentile | Median | 75th percentile | 90th percentile |
| Temperature2 (°C) for males  |   |   |   |   |   |
| ≤ 2 | 4 964 | 0.11 | 0.23 | 0.36 | 0.53 |
| > 2 and < 12 | 9 699 | 0.10 | 0.19 | 0.35 | 0.53 |
| ≥ 12 and < 26 | 14 076 | 0.12 | 0.25 | 0.53 | 1.07 |
| ≥ 26 | 1 051 | 0.29 | 0.93 | 1.90 | 3.57 |
| Temperature2 (°C) for females |   |   |   |   |   |
| ≤ 2 | 2 268 | 0.00 | 0.00 | 0.11 | 0.18 |
| > 2 and < 12 | 4 160 | 0.00 | 0.00 | 0.10 | 0.15 |
| ≥ 12 and < 26 | 4 922 | 0.00 | 0.00 | 0.11 | 0.21 |
| ≥ 26 | 312 | 0.00 | 0.09 | 0.24 | 0.60 |
|  |  |  |  |  |  |

1Percentage of load Dead-on-arrival (DOA)

2Summary values (minimum, maximum and mean) of local environmental temperatures per day of transportation were acquired and the most likely value was assigned to each journey on the basis of the time of occurrence (min: 23.00-6.00; max: 11.00-16.00; average: remaining part of the day).