

**S2 Table:** Time gaps between transitions of two hens from one area to the next. Time bound (s) of the first 25% quartile. Observed value (Obs.) and expected value (Exp.) based on simulated sampling assuming randomly dispersed and independent transitions of hens. For calculating expected values under the null assumption, we randomly sampled transition times from a uniform distribution for the time span from the first to the last transition. Arrows indicate the direction of transitions; IN: indoors, WG: wintergarden, SY: stone yard, FR: free range. KS-Test: test statistics for the Kolmogorov-Smirnov test for distribution fit ( $p < 0.001$  in all cases).

|         | Pen 11 |     |         | Pen 12 |     |         | Pen 13 |     |         | Pen 14 |     |         |
|---------|--------|-----|---------|--------|-----|---------|--------|-----|---------|--------|-----|---------|
|         | Obs    | Exp | KS-test |
| IN → WG | 3      | 6   | 0.1167  | 4      | 7   | 0.1238  | 4      | 6   | 0.1076  | 4      | 7   | 0.1294  |
| WG → SY | 6      | 12  | 0.1285  | 5      | 8   | 0.1131  | 5      | 8   | 0.1043  | 7      | 12  | 0.1108  |
| SY → FR | 3      | 10  | 0.2302  | 13     | 40  | 0.1759  | 6      | 15  | 0.1521  | 4      | 12  | 0.2023  |
| FR → SY | 1      | 10  | 0.3308  | 7      | 44  | 0.2302  | 4      | 16  | 0.2152  | 3      | 14  | 0.2505  |
| SY → WG | 4      | 13  | 0.1907  | 3      | 8   | 0.1794  | 4      | 8   | 0.1535  | 6      | 14  | 0.1520  |
| WG → IN | 3      | 6   | 0.1504  | 3      | 7   | 0.1487  | 3      | 7   | 0.1452  | 3      | 7   | 0.1534  |