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Supplementary file:

**Comparison of three different farrowing systems: skin lesions and behaviour of sows with special regard to nursing behaviour in a group housing system for lactating sows**

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**Supplementary Results**

**Table S1** *Results of the fitted linear mixed model for sows` cumulative rating index (CRI).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Estimate | Standard error of the coefficient | t value | p-value |
| Intercept | 5.4622 | 0.5246 | 10.4124 | <0.0001\* |
| Parity | 0.2583 | 0.1018 | 2.5389 | 0.0125\* |
| System FC | -2.5331 | 0.5099 | -4.9676 | <0.0001\* |
| System LH | -2.1869 | 0.5135 | -4.2585 | <0.0001\* |
| Day 14 | -2.0000 | 0.4001 | -4.9988 | <0.0001\* |
| Day 34 | -3.2647 | 0.4001 | -8.1598 | <0.0001\* |

Farrowing system: FC = pens with farrowing crate, LH = single loose housing pens. Group housing system was used as reference level.

\* Estimate differs significantly from 0 (p-value < 0.05).

**Table S2** *Results of the estimated mixed multinomial logit model for sows` body posture (LR, SR, Si, St).*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Estimate | Exponentiation of the Estimate | Standard error of the coefficient | z-value | p-value |
| LR vs St | Intercept | 0.7734 | 2.1672 | 0.0971 | 7.9617 | <0.0001\* |
| Parity | 0.0363 | 1.0370 | 0.0262 | 1.3872 | 0.1654 |
| System FC | 0.6282 | 1.8743 | 0.1211 | 5.1884 | <0.0001\* |
| System LH | 0.5991 | 1.8205 | 0.1219 | 4.9158 | <0.0001\* |
| Day 25 | -0.2960 | 0.7427 | 0.0540 | -5.4806 | <0.0001\* |
| Day 32 | -0.4828 | 0.6170 | 0.0540 | -8.9447 | <0.0001\* |
| SR vs St | Intercept | 0.3940 | 1.4830 | 0.0979 | 4.0246 | 0.0001\* |
| Parity | 0.0485 | 1.0497 | 0.0263 | 1.8432 | 0.0653 |
| System FC | -0.1027 | 0.9024 | 0.1219 | -0.8423 | 0.3996 |
| System LH | 0.1161 | 1.1231 | 0.1208 | 0.9609 | 0.3366 |
| Day 25 | 0.0211 | 1.0214 | 0.0577 | 0.3666 | 0.7139 |
| Day 32 | 0.0826 | 1.0861 | 0.0567 | 1.4578 | 0.1449 |
| Si vs St | Intercept | -2.3155 | 0.0987 | 0.1946 | -11.8968 | <0.0001\* |
| Parity | 0.0345 | 1.0351 | 0.0493 | 0.7003 | 0.4838 |
| System FC | 0.9504 | 2.5867 | 0.2352 | 4.0414 | 0.0001\* |
| System LH | 0.5248 | 1.6901 | 0.2474 | 2.1209 | 0.0339\* |
| Day 25 | -0.0642 | 0.9378 | 0.1175 | -0.5462 | 0.5850 |
| Day 32 | -0.2136 | 0.8077 | 0.1193 | -1.7903 | 0.0734 |

Farrowing system: FC = pen with farrowing crate; LH = loose housing pen; Group housing was used as reference level.

Body posture: LR = lateral recumbency; SR= sternal recumbency; Si= sitting; St = standing (reference level).

\* Estimate differs significantly from 0 (p-value < 0.05); z-value: z value of the Wald test statistic, i.e. estimated coefficient divided by its standard error.

**Table S3** *Results of the fitted logistic mixed effect model for the preferred location of the sows (pen or common area).*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Estimate | Exponentiation of the Estimate | Standard error of the coefficient | z-value | p-value |
| Intercept | -1.6019 | 0.2015 | 0.3966 | -4.0392 | 0.0001\* |
| Parity | 0.3006 | 1.3506 | 0.1674 | 1.7960 | 0.0725 |
| Day 18 | 0.9370 | 2.5523 | 0.0781 | 11.9995 | <0.0001\* |
| Day 25 | 1.0359 | 2.8175 | 0.0784 | 13.2135 | <0.0001\* |
| Day 32 | 1.2942 | 3.6482 | 0.0791 | 16.3550 | <0.0001\* |

\* Estimate differs significantly from 0 (p-value < 0.05); z-value: z value of the Wald test statistic, i.e. estimated coefficient divided by its standard error.

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**Figure S1** Amounts of single skin lesion scores (0, 1, 2, 3) for different body parts of the sows on day 1. FC = conventional pens with farrowing crate; LH= single loose-housing pens; GH= group housing system. Significant differences between systems are marked by \* (P < 0.05).

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**Figure S2** Amounts of single skin lesion scores (0, 1, 2, 3) for different body parts of the sows on day 14. FC = conventional pens with farrowing crate; LH= single loose-housing pens; GH= group housing system. Significant differences between systems are marked by \* (P < 0.05), \*\* (P < 0.01) and \*\*\* (P < 0.001).

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**Figure S3** Amounts of single skin lesion scores (0, 1, 2, 3) for different body parts of the sows on day 34. FC = conventional pens with farrowing crate; LH= single loose-housing pens; GH= group housing system. Significant differences between systems are marked by \* (P < 0.05), \*\* (P < 0,01) and \*\*\* (P < 0.001).