Appendix 1. Correlation between microclimate and air quality during rearing periods

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| **1st week** |
| Microclimate | Air quality |
| Ammonia | CO2 | O2 | PM2.5 | TVOC | HCHO |
|  ------------------------------------------------- r value ------------------------------------------------- |
| Temperature |  0.400\*\* |  0.794\*\* | -0.407\*\* | -0.056 | 0.653\*\* | 0.677\*\* |
| RH |  -0.217 | -0.136 | 0.035 | -0.012 |  0.222 | 0.354\*\* |
| AV |  0.116 | 0.149 | -0.190 |  -0.240 |  -0.084 | -0.037 |
| Windchill | Not detected |
| THI |  0.107 | 0.447\*\* |  -0.258 | 0.727 | 0.636\*\* | 0.759\*\* |
| Real Feel |  0.400\*\* |  0.795\*\* | -0.407\*\* | 0.687 |  0.653\*\* |  0.677\*\* |
| **2nd week** |
| Microclimate | Air quality |
| Amonia | CO2 | O2 | PM2.5 | TVOC | HCHO |
| ------------------------------------------------- r value ------------------------------------------------- |
| Temperature | 0.425\*\* | 0.755\*\* | -0.523\*\* | 0.261 | 0.833\*\* | 0.828\*\* |
| RH | 0.471\*\* | 0.591\*\* | -0.434\*\* | 0.295\* | 0.262 | 0.002 |
| AV | 0.395\*\* | 0.503\*\* | -0.299\* | 0.368\*\* | 0.248 | 0.091 |
| Windchill | -0.22 | -0.236 | 0.199 | -0.335\* | -0.106 | -0.017 |
| THI | -0.599\*\* | 0.831\*\* | -0.599\*\* | 0.364\*\* | 0.572\*\* | 0.338\* |
| Real Feel | 0.412\*\* | 0.740\*\* | -0.510\*\* | 0.242 | 0.825\*\* | 0.825\*\* |
| **3rd week** |
| Microclimate | Air quality |
| Amonia | CO2 | O2 | PM2.5 | TVOC | HCHO |
| r value |
| Temperature | 0.573\*\* | 0.740\*\* | 0.701\*\* | 0.612\*\* | 0.682\*\* | 0.675 |
| RH | -0.113 | -0.758\*\* | -0.658\*\* | -0.413\*\* | -0.834\*\* | -0.803\*\* |
| AV | 0.728\*\* | -0.151 | 0.123 | -0.051 | -0.183 | -0.091 |
| Windchill | 0.721\*\* | 0.164 | -0.12 | 0.07 | 0.189 | 0.095 |
| THI | 0.159 | 0.875\*\* | 0.482\*\* | 0.725\*\* | 0.651\*\* | 0.528\*\* |
|  Real Feel | -0.405\*\* | 0.588\*\* | 0.277 | 0.420\*\* | 0.581\*\* | 0.481\*\* |
| **4th week** |
| Microclimate | Air quality |
| Amonia | CO2 | O2 | PM2.5 | TVOC | HCHO |
| r value |
| Temperature | 0.868\*\* | 0.661\*\* | -0.153 | 0.869\*\* | 0.900\*\* | 0.822\*\* |
| RH | -0.569\*\* | -0.364\*\* | -0.02 | -0.453\*\* | -0.450\*\* | -0.407\*\* |
| AV | 0.523\*\* | 0.351\*\* | -0.351\*\* | 0.446\*\* | 0.523\*\* | 0.335\* |
| Windchill | -0.407\*\* | -0.235 | 0.273\* | -0.378 | -0.409\*\* | -0.239 |
| THI | 0.791\*\* | 0.583\*\* | -0.299\* | 0.781\*\* | 0.824\*\* | 0.747\*\* |
|  Real Feel | 0.568\*\* | 0.490\*\* | 0.049 | 0.590\*\* | 0.598\*\* | 0.646\*\* |

Note: Significance level P (<0.01) \*\*

 P (>0.05) \*