**Heat stress effects on Holstein dairy cows’ rumination**

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**Table S1.** Descriptive statistics for Ambient Temperature (**AT**), Relative Humidity (**RH**), recorded inside the barn and the calculated Temperature-Humidity Index (**THI**) by month. All the means are in a “mean ± standard deviation (**SD**)” format and refer to the total of the monthly records

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SUMMER 2015 | | June | July | August |
| AT (°C) | Mean ± SD  Min  Max | 23.28a ± 3.84 | 28.04b ± 3.68 | 24.61c ± 4.28 |
| 14.94 | 19.81 | 16.67 |
| 31.99 | 35.34 | 35.03 |
| RH (%) | Mean ± SD  Min  Max | 64.41a ± 14.57 | 57.64b ± 11.47 | 64.49a ± 15.76 |
| 35.14 | 34.15 | 32.99 |
| 94.20 | 83.42 | 95.45 |
| THI | Mean ± SD  Min  Max | 70.32a ± 4.43 | 76.43b ± 3.96 | 72.15c ± 4.66 |
| 58.77 | 66.17 | 61.48 |
| 80.00 | 84.81 | 82.17 |

a,b Values within a row with different superscripts differ significantly at *P*<0.05.

**Table S2.** Descriptive statistics for the observed 2-h and daily Rumination Time (**RT**) by month in the Italian Holstein herd. All the means are in a “mean ± standard deviation (**SD**)” format and refer to the total of the monthly records

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| SUMMER 2015 | | June | July | August |
| 2-h RT (min/2h) | Mean ± SD | 48.79a ± 22.30 | 46.22b ± 21.78 | 48.93a ± 22.82 |
| Min | 0 | 0 | 0 |
| Max | 120 | 120 | 120 |
| Daily RT (min/day) | Mean ± SD | 585.41a ± 92.01 | 554.65b ± 103.52 | 586.78a ± 91.79 |
| Min | 37 | 61 | 97 |
| Max | 853 | 860 | 1028 |

a,b Values within a row with different superscripts differ significantly at *P*<0.05.