

Supplemental Figure S1. Diagram of the mean \pm SD air speed (2-sec intervals between 1200 to 1600 h) delivered by variable-speed fans (grey boxes at left), as measured in 2 experimental pens (16 freestalls per pen), with the cows removed from the pens. The darker shaded areas indicate higher air speeds recorded within the stalls. Capacity in the research facility to house the 32 cows from both pens elsewhere during measurements was limited, and thus these measurements were collected during 9 d after the experiment was over. To obtain simultaneous, rather than sequential measurements in each pen, we used propellor anemometers at a single height (0.75 m above the stall base, the minimum height allowable by the tripods). In the (A) control treatment, when the fans were turned off, we expected temporal variation from natural prevailing winds; thus, air speeds were measured for 4 h in 8 stalls per pen in both pens simultaneously. In contrast, in the (B) 60% and (C) 100% fan power treatments, we expected spatial variation to be a more important factor; thus, air speeds were measured for 2 h in all 16 stalls in one pen before switching to the other experimental pen for the next 2 h.

A) Airspeed map for control treatment at 0.75 m height

Fan	0.7 \pm 0.5 m/s		0.8 \pm 0.4 m/s		0.6 \pm 0.5 m/s		0.8 \pm 0.4 m/s
Fan	0.9 \pm 0.5 m/s		0.6 \pm 0.6 m/s		0.8 \pm 0.7 m/s		0.5 \pm 0.5 m/s

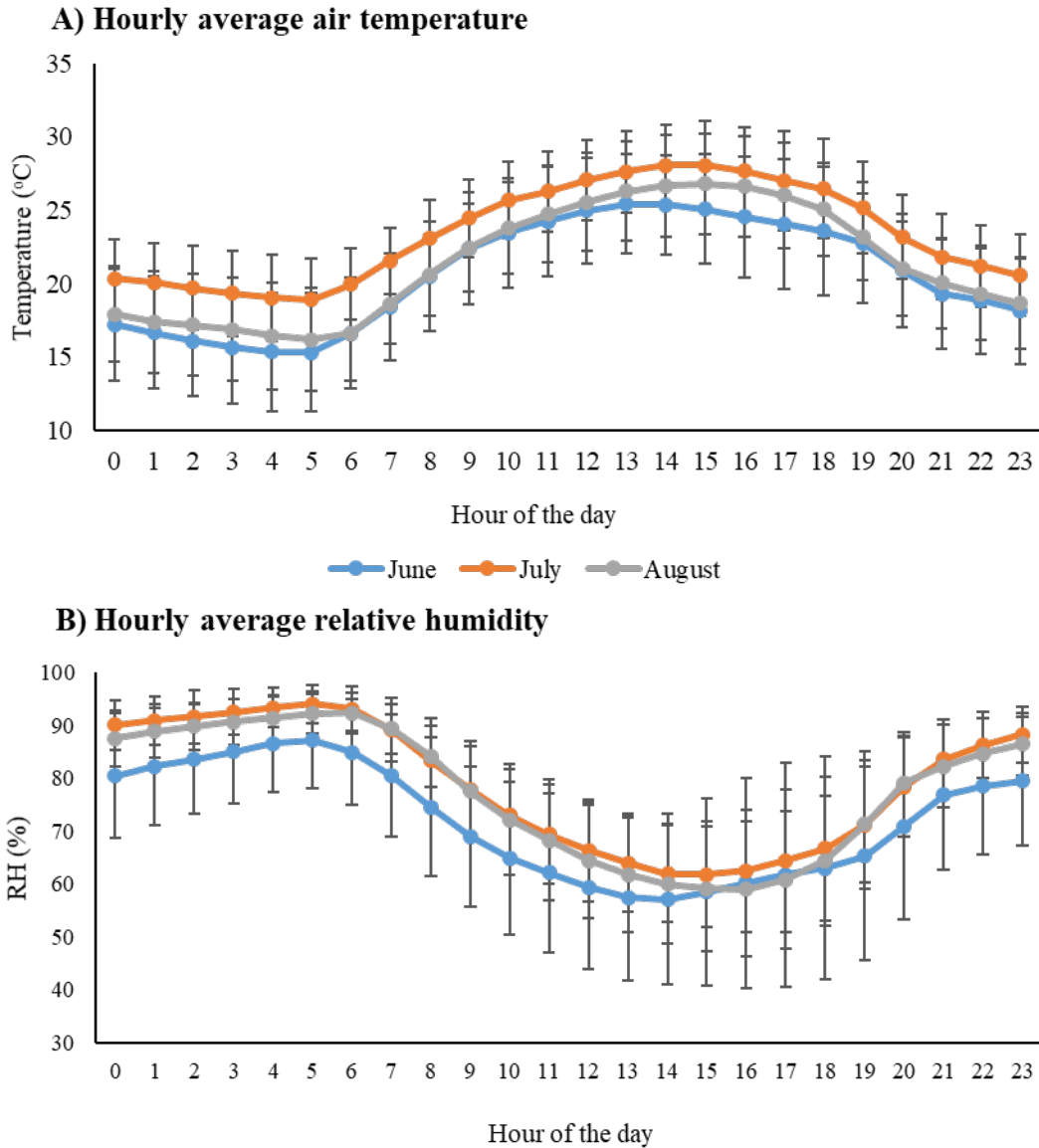
B) Airspeed map for 60% fan power treatment at 0.75 m height

Fan	1.6 \pm 0.8 m/s	2.5 \pm 1.2 m/s	3.0 \pm 1.3 m/s	3.0 \pm 1.1 m/s	2.5 \pm 1.1 m/s	3.0 \pm 0.9 m/s	2.7 \pm 0.8 m/s	2.3 \pm 0.7 m/s
Fan	2.0 \pm 0.6 m/s	2.3 \pm 1.1 m/s	4.0 \pm 0.9 m/s	3.6 \pm 0.8 m/s	3.9 \pm 0.8 m/s	3.4 \pm 0.7 m/s	2.6 \pm 1.0 m/s	2.5 \pm 0.5 m/s

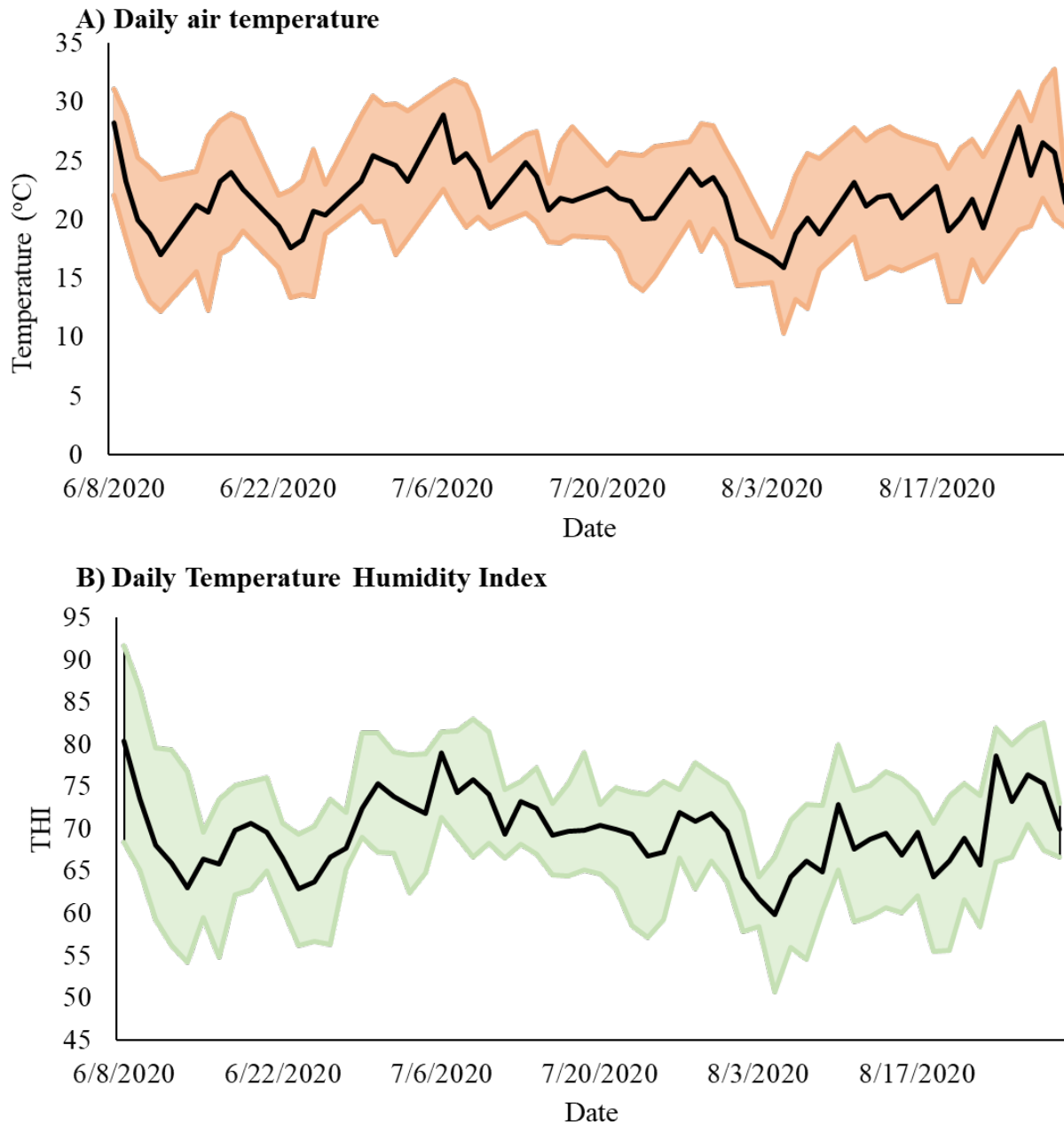
C) Airspeed map for 100% fan power treatment at 0.75 m height

Fan	2.1 \pm 1.0 m/s	3.8 \pm 1.6 m/s	5.0 \pm 1.5 m/s	4.8 \pm 1.2 m/s	3.6 \pm 1.5 m/s	4.6 \pm 0.9 m/s	4.2 \pm 0.8 m/s	3.5 \pm 0.7 m/s
Fan	2.2 \pm 0.7 m/s	3.5 \pm 1.1 m/s	5.2 \pm 0.8 m/s	5.2 \pm 0.6 m/s	5.6 \pm 0.6 m/s	5.0 \pm 0.5 m/s	3.6 \pm 1.1 m/s	3.8 \pm 0.4 m/s

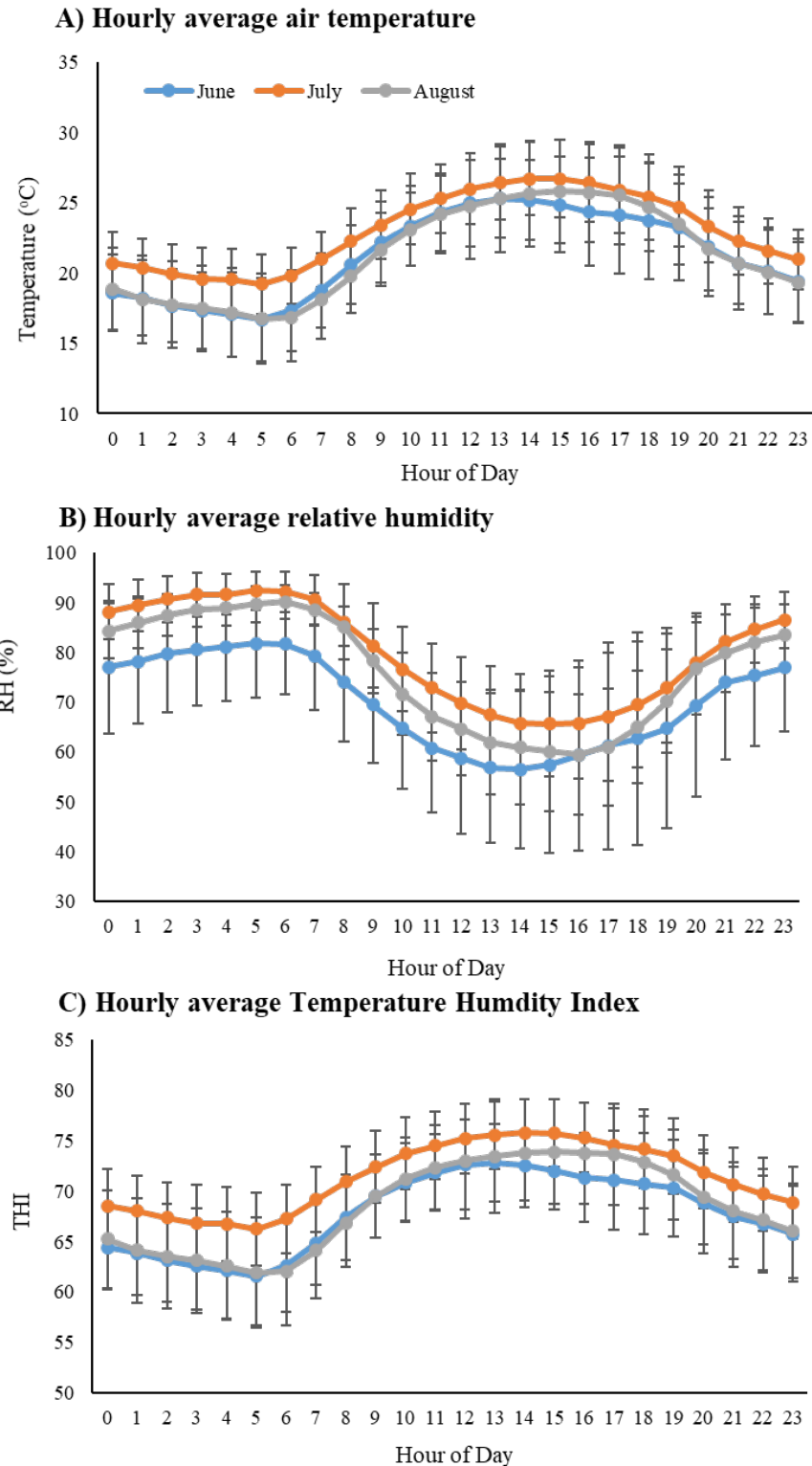
Supplemental Figure S2. Descriptive graphs of the mean \pm SD hourly ambient A) air temperature and B) relative humidity outside the barn where the experimental pens were housed, separately by month.



Supplemental Figure S3. Descriptive graphs of the daily microclimate A) air temperature and B) Temperature Humidity Index (THI) in the experimental pens over the course of the trial. The black line represents the average, and the shaded areas span the maximum and minimum.



Supplemental Figure S4. Descriptive graphs of the mean \pm SD hourly microclimate A) air temperature, B) relative humidity, and C) Temperature Humidity Index (THI) in the experimental pens, separately by month.



Supplemental Figure S5. Descriptive graphs of the mean \pm SD A) maximum, B) average, and C) minimum vaginal temperature by hour in the three treatments (control, fans off; 60% and 100% fan power).

