

**B-18: Physiological responses to different sprinkler treatments in water buffalo (*Bubalus bubalis*)**

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This study examines the effect of different sprinkler treatments on thermoregulatory responses of water buffalo. Six different sprinkler treatments, using combinations of 30, 60, and 90 sec. unit wetting periods and 3 or 6 repeated wetting cycles (number of wettings in 5 min), were applied to 3 buffalo heifers, while 3 other heifers of similar age ( $1.60 \pm 0.06$  year) and body weight ( $121.20 \pm 4.90$  kg) were used as the control. Data on skin temperature (ST), respiration rate (RR), heart rate (HR), and rectal temperature (RT) were obtained from all the animals simultaneously at -10, 0, +15, +30, +45 and +60 min after each sprinkler treatment. Treatments were repeated for 5 alternate days and ambient temperature was recorded at the same time intervals during the study periods. Skin temperature was reduced ( $p \leq 0.01$ ) in response to all 6 treatments. Three repeated cycles of 30 or 60 sec. did not influence RR or HR. However, 6 repeated cycles of the above wetting periods, and both 3 and 6 repeated cycles of 90 sec. sprinkling reduced ( $p \leq 0.01$ ) RR and HR. Following withdrawal of sprinkling, ST, RR, and HR increased ( $p \leq 0.01$ ) with time. The results suggest that, 3 or 6 repeated cycles of 90 sec. wetting period as being more effective in cooling the animals than 3 repeated cycles of 30 or 60 sec. wetting duration.