

# Heat Stress Amelioration Potential of PHYTOCEE® in Cattle : Effects on Rectal Temperature and Respiratory Rate

## OBJECTIVE

To evaluate effect of PHYTOCEE® on rectal temperature and respiratory rate in heat stressed dairy cows.

## MATERIALS AND METHODS

A total of 48 *Holstein Friesian* cross bred (HFx) dairy cows were selected for this study. Selected dairy cows were equally divided in to 4 experimental groups (n=12) namely G1-Control, G2-PHYTOCEE®-50 (50 g/animal/day), G3-PHYTOCEE®-75 (75 g/animal/day), and G4-PHYTOCEE®-100 (100 g/animal/day). The environmental temperature during the study period was between 33°C to 37°C. The duration of treatment was 4 weeks. The dairy cows were used as their own controls and, therefore, allocated to a control pretreatment period (week 0), followed by a treatment period (4 weeks). The assessment parameters viz. rectal temperature (°F) and respiration rate (breaths/min) were evaluated.

## RESULTS

### Effect of PHYTOCEE® on rectal temperature and respiratory rate in dairy cows

Group	Week 0	Week 1	Week 2	Week 3	Week 4
	Rectal Temperature (°F)				
<b>G1: Control</b>	101.11 ± 0.16	101.34 ± 0.11	101.22 ± 0.13	101.26 ± 0.18	101.73 ± 0.07
<b>G2: Phytocee 50</b>	100.93 ± 0.15	101.03 ± 0.08	100.91 ± 0.07	101.10 ± 0.11	101.55 ± 0.07
<b>G3: Phytocee 75</b>	101.08 ± 0.16	100.97 ± 0.10	101.28 ± 0.16	101.11 ± 0.09	101.60 ± 0.06
<b>G4: Phytocee 100</b>	101.75 ± 0.36	102.02 ± 0.29	101.61 ± 0.24	*101.26 ± 0.17	101.66 ± 0.08
Respiratory Rate (Breaths/min)					
<b>G1: Control</b>	60.88 ± 0.64	64.48 ± 0.63	61.31 ± 1.33	65.13 ± 0.55	62.71 ± 1.15
<b>G2: Phytocee 50</b>	60.31 ± 0.90	66.54 ± 0.83	65.90 ± 0.93	63.00 ± 0.64	63.00 ± 0.71
<b>G3: Phytocee 75</b>	58.29 ± 0.73	62.77 ± 0.58	62.06 ± 1.03	56.56 ± 0.62	62.88 ± 0.85
<b>G4: Phytocee 100</b>	62.88 ± 1.02	63.77 ± 1.00	62.10 ± 0.65	***54.10 ± 0.33	**59.13 ± 0.74

Values are expressed as Mean ± SEM; n=12; \*p<0.05, \*\*p<0.01 and \*\*\*p<0.001 (significantly decreased) as compared to Week 0 based on Repeated Measures two-way ANOVA followed by Bonferroni Test

## CONCLUSIONS

PHYTOCEE® supplementation at 100 g/animal/day significantly reduced the respiratory rate and rectal temperature during the treatment period as compared to week 0 (pre-treatment).

## OUTCOME

Hence, supplementation of PHYTOCEE® at 100 g/animal/day could be recommended for mitigation of heat stress conditions in dairy cows under field conditions.