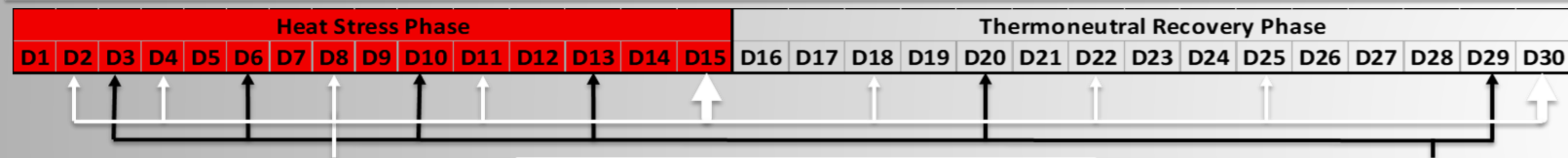


Introduction

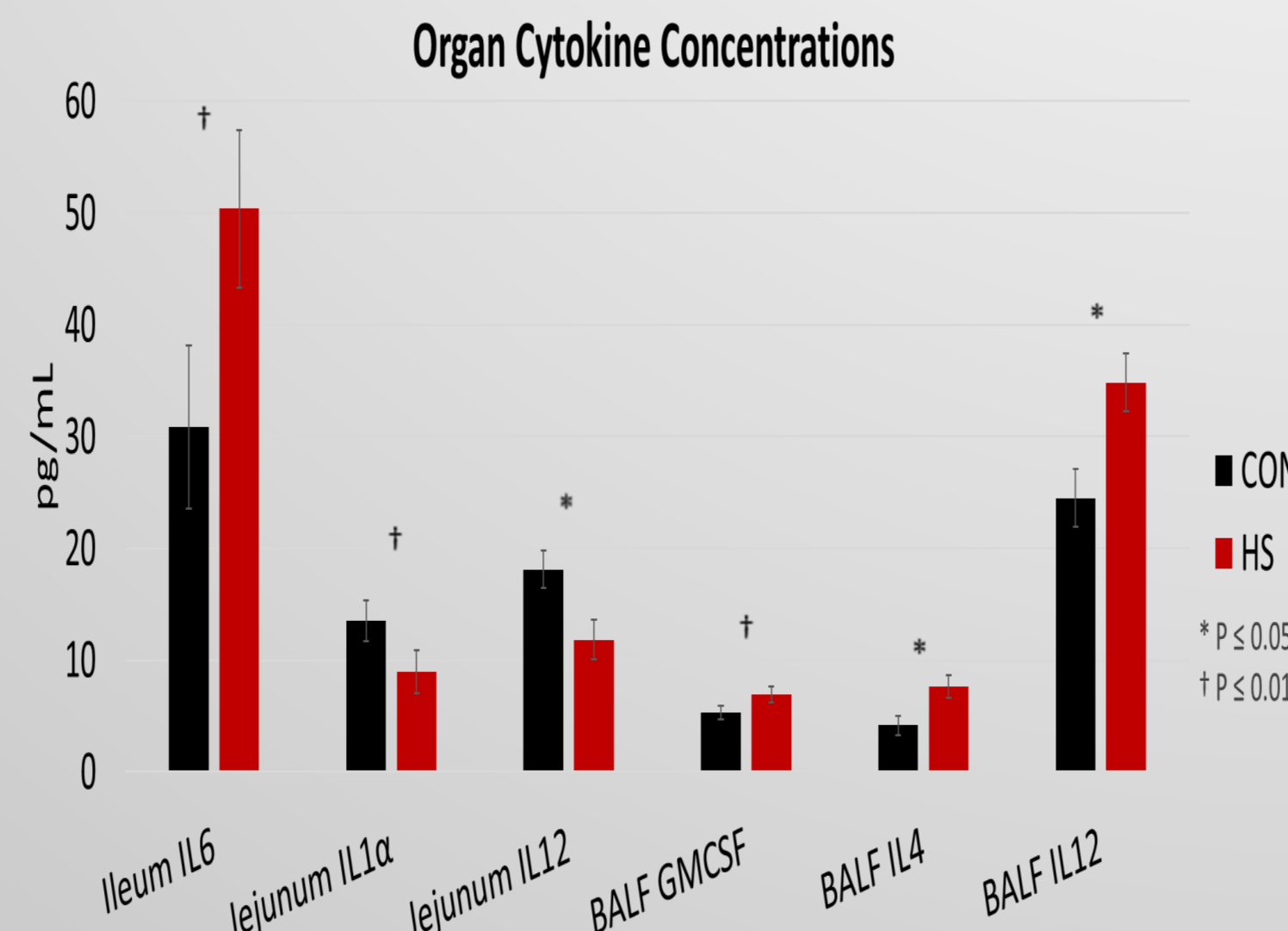
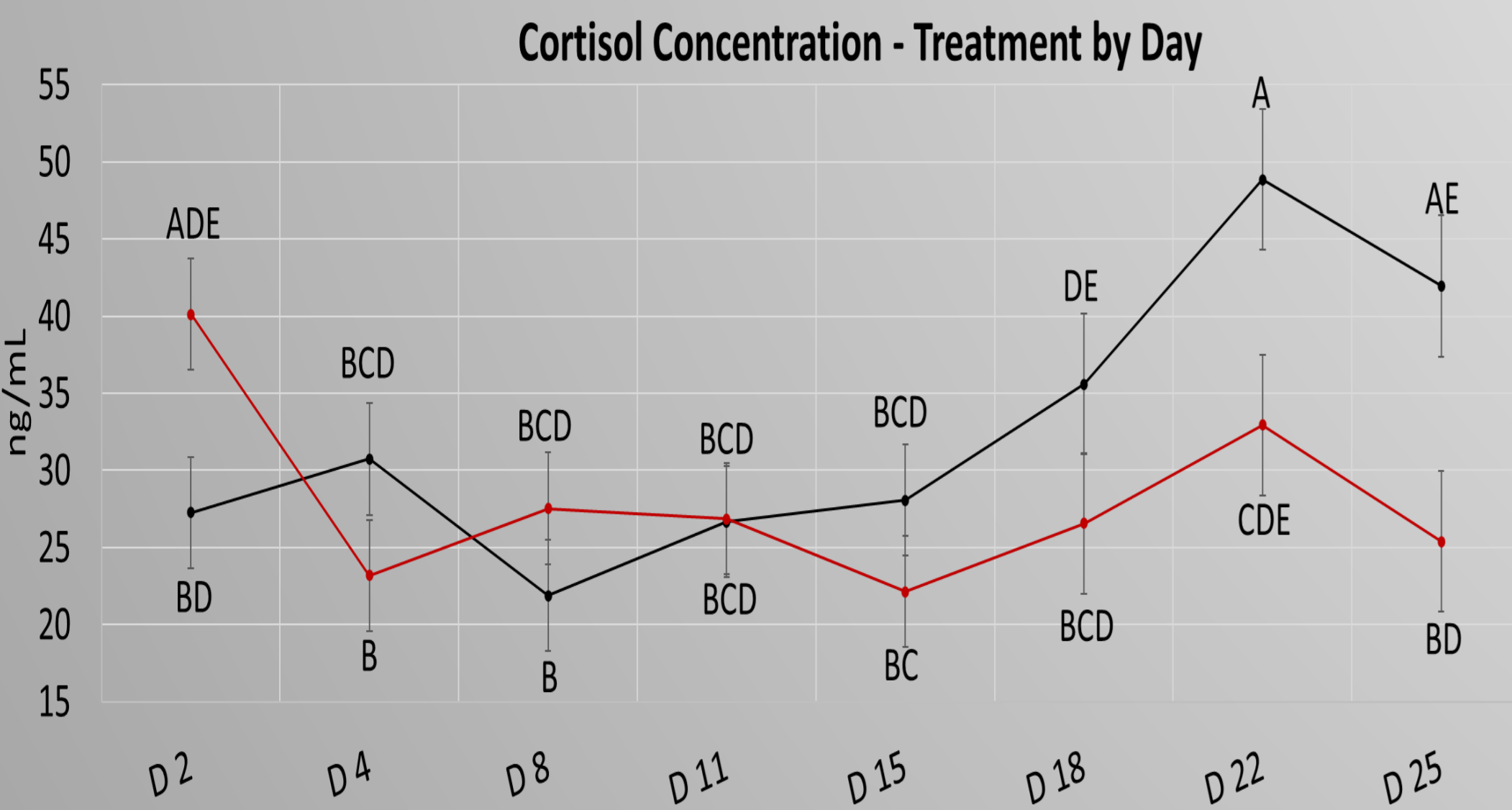
- High environmental temperatures pose a physiologic threat to livestock that can result in a reduction in welfare and performance.
- The pig employs physiologic changes in an attempt to maintain homeostasis that diverts energy from growth and reproduction, which can result in a loss of profitability for livestock producers.
- Heat stress could result in an inflammatory side effect as heat abatement strategies such as panting and reallocation of blood volume to the skin are sustained and become dysfunctional.
- The goal of this study was to investigate the impact of long-term, low-intensity heat stress (~27°C) on serum cortisol concentration, as well as cytokine inflammatory reaction both systemically and in localized lung and intestinal mucosa local tissues.

Methods

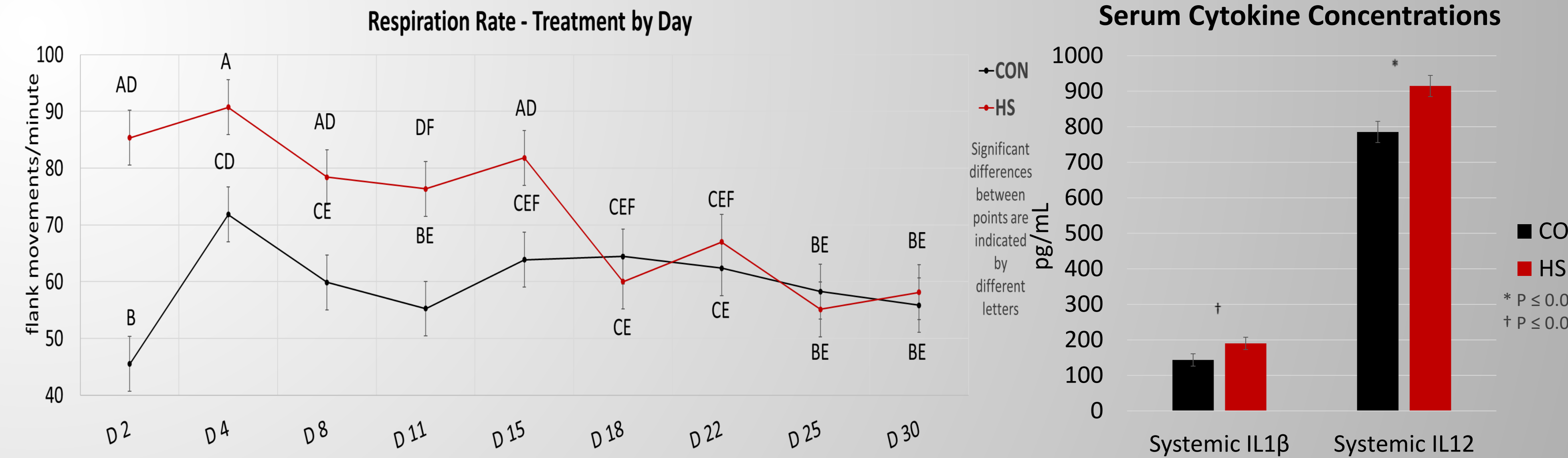
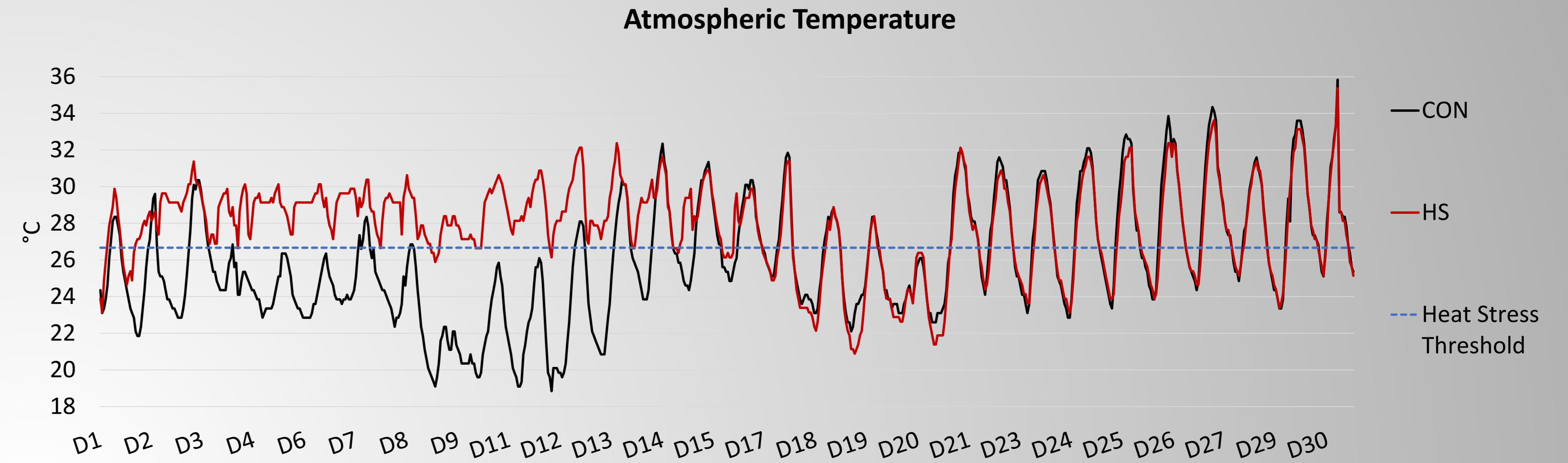


- Physiological Measurements
 - Serum
 - Rectal Temperatures
 - Surface Temperatures*
 - Respiration Rate
 - D15 and D30 additional samples:
 - Ileum Histology
 - Ileum Mucosa
 - Jejunum Histology
 - Jejunum Mucosa
 - Lung Epithelial Lining (BALF)
 - Video Recording for Behavior Analysis*
 - 0600-0800 (Morning)
 - 1200-1400 (Afternoon)
 - 1800-2000 (Evening)
- * Parameters indicate by red star were presented in an oral presentation

Results



Results



Summary

- Heat stress increases respiration rate
- Serum cortisol concentration may indicate repeat stress tolerance in HS pigs
- Heat stress induces an inflammatory profile systemically, and in the ileal mucosa, and lungs.
- Heat stress reduces inflammatory activity in the jejunum

Conclusion

Increased inflammatory activity and endocrine stress response occurred during low-intensity heat stress, indicating it may be more detrimental than previously accepted.