



Relationship of Core Body Temperature Biotelemetry and Physiological Events in Broiler Breeder Hens

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Summary

Biotelemetry is an approach to monitoring core body temperature. Core body temperature (CBT) was increased due to feed intake, light and activity during day time. Higher diurnal CBT pattern was recorded in broiler breeder hens. Split feeding is appropriate to maintain steady CBT in broiler breeder hens.

Introduction

Core body temperature of chicken varies from 40.6 to 41.7°C (Savory et al., 2006). Birds convert energy to maintain core body temperature under high or low ambient temperature (Geraert, et al., 1996). Core body temperature is affected by photoperiod and declined following feed removal (Skinner-Noble and Teeter, 2003) and common physiological events (metabolism and oviposition).

Objectives

To identify qualitative relationships among feeding time, oviposition, light, dark and core body temperature in broiler breeder hens.

Approach

- Birds were reared in temperature-controlled (20°C) environmental chambers with constant humidity (60%) in individual laying cage for a week.
- 64 biotelemetry devices were implanted in Ross 708 broiler breeder hens. Data from 4 hens (1 per treatment) were used for this qualitative analysis.
- Treatments: 4 feeding times (Morning-7.30am, Noon-11.30am, Afternoon-3.30pm and Split-7.30am & 3.30pm).

Temperature and Data collection

Core body temperature sensors transmitted temperature reading six times/hr.

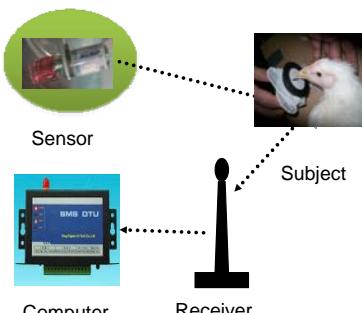


Fig-1.Recording of CBT

Statistical Analysis

Graphs were made using gplot procedure of SAS (2009).

Observations

- Core body temperature was increased in morning, noon, afternoon and split feeding (Fig.-2. A,B,C & D).
- Body temperature was increased about 0.7°C when lights on.
- Core body temperature was increased at day due to feeding, drinking, lighting and activities.
- Oviposition time had no clear evidence on core body temperature.

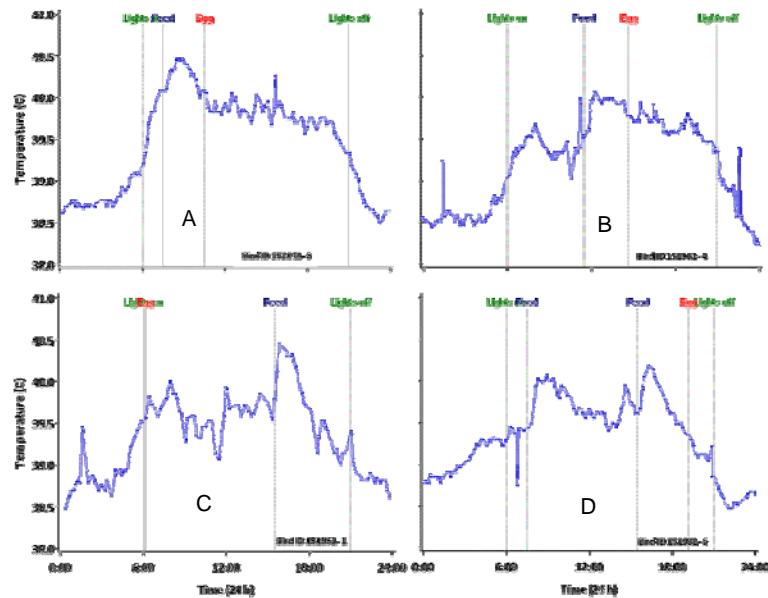


Fig.-2. CBT changes with morning (A), noon(B), afternoon(C), split feeding (D), oviposition time and light.

Why is this important?

- Strong diurnal patterns of CBT was recorded due to effect of light, feeding time and activities.
- Core body temperature increased sharply at the beginning of light on and decreased sharply at the beginning of light off.
- Split feeding maintained steady CBT comparatively long time.

Acknowledgement



Images were taken at 10 min intervals of group of 16 cages to determine oviposition time of individual hens.

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References

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