

**COMPARISON OF RECTAL AND AXILLARY
TEMPERATURES OF ISA BROWN AND HARCO BLACK
LAYERS FED DIFFERENT LEVELS OF DIETARY
ACETYLSALICYLIC ACID (ASA)**

BY

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INTRODUCTION

- ❖ In hot climates, periods of high temperatures can impact negatively on the health and performance of domestic animals.
- ❖ Such elevated temperatures can result in heavy economic losses from increased mortality and reduced productivity.
- ❖ Several intervention strategies have been canvassed at reducing heat load in livestock among which is the use of acetylsalicylic acid (ASA) or Aspirin.
- ❖ ASA is a well known antipyretic drug.
- ❖ Its antipyretic property would be more beneficial on the commercial layers that suffer much from longer exposure to heat stress.
- ❖ There is dearth of information of the relative tolerance of our commercial layers' breeds to heat stress more so under the ameliorative effect of dietary supplementation of acetyl salicylic acid (ASA).
- ❖ This study thus sought to compare the rectal and axillary temperature of Isa Brown and Harco Black breeds of commercial layers.
- ❖ With this in view, the relative tolerance of these two popular commercial laying chickens to heat stress under the ameliorative effect of graded levels of dietary ASA could be determined.

MATERIALS AND METHODS

- **Experimental Site**
- **Formulation of experimental diets**
- **Procurement of experimental animals and their management**
- **Data collection from the experimental animals**
- **Statistical analysis**

RESULTS AND DISCUSSION

Table 1: Composition (g/100g) of the experimental diets

Parameters	T1	T2	T3	T4
Maize	50.00	50.00	50.00	50.00
Groundnut cake	6.50	6.50	6.50	6.50
Soybean meal	12.00	12.00	12.00	12.00
Palm kernel cake	3.50	3.50	3.50	3.50
Wheat offal	17.00	17.00	17.00	17.00
Fish meal	1.00	1.00	1.00	1.00
Bone meal	2.60	2.60	2.60	2.60
Limestone	6.50	6.50	6.50	6.50
Methionine	0.25	0.25	0.25	0.25
Lysine	0.10	0.10	0.10	0.10
Layer's premix	0.25	0.25	0.25	0.25
Salt	0.30	0.30	0.30	0.30
Total	100.00	100.00	100.00	100.00
ASA supplementation	0.00	0.025	0.050	0.075

Table 2: Ambient, rectal and axillary temperature of layers fed varying level of ASA

Source of variation	Breed	MAT	AAT	EAT	MAXT	AAXT	EAXT	MRT	ART	ERT
	HB	25.50	31.75	30.08	40.30	41.11	40.71	41.35^a	41.99^a	41.65^a
	IB	25.50	31.75	30.08	40.17	40.93	40.68	41.21 ^b	41.75 ^b	41.60 ^b
±SEM (Breed)		0.00	0.00	0.00	0.15	0.97	1.25	0.03	0.03	0.03
Levels of ASA										
0.00% ASA		25.50	31.75	30.08	40.20	41.01	40.85^a	41.25	41.90	41.72^a
0.025% ASA		25.50	31.75	30.08	40.19	40.99	40.73 ^b	41.26	41.81	41.67 ^{ab}
0.050% ASA		25.50	31.75	30.08	40.26	41.10	40.62 ^c	41.30	41.91	41.58 ^{ab}
0.075% ASA		25.50	31.75	30.08	40.27	40.97	40.59 ^c	41.32	41.85	41.54 ^b
±SEM (ASA level)		0.00	0.00	0.00	0.20	1.04	0.04	1.23	1.32	0.05
Breed x ASA level										
0.00%	HB	25.50	31.75	30.08	40.31^a	41.01^b	40.85^a	41.36^a	41.95^a	41.68^a
0.00%	IB	25.50	31.75	30.08	40.09 ^d	41.01 ^b	40.86 ^a	41.14 ^c	41.85 ^b	41.76 ^a
0.025%	HB	25.50	31.75	30.08	40.22 ^b	41.15 ^a	40.75 ^b	41.35 ^a	41.97 ^a	41.73 ^a
0.025%	IB	25.50	31.75	30.08	40.16 ^c	40.83 ^c	40.72 ^b	41.17 ^c	41.65 ^d	41.60 ^b
0.050	HB	25.50	31.75	30.08	40.34 ^a	41.16 ^a	40.59 ^d	41.38 ^a	42.04 ^a	41.62 ^b
0.050%	IB	25.50	31.75	30.08	40.19 ^b	41.05 ^a	40.65 ^c	41.23 ^b	41.79 ^b	41.54 ^b
0.075%	HB	25.50	31.75	30.08	40.32 ^a	41.10 ^a	40.66 ^c	41.32 ^a	42.00 ^a	41.59 ^b
0.075%	IB	25.50	31.75	30.08	40.23 ^b	40.84 ^c	40.52 ^e	41.32 ^a	41.71 ^c	41.50 ^c
±SEM Breed x ASA		0.00	0.00	0.00	0.04	0.06	0.05	0.03	0.02	0.05

a, ab, b, c, d, e = means on the same column but with different superscripts are statistically ($p < 0.05$) significant; ASA = Acetyl salicylic acid

MAT = Morning Ambient Temperature; AAT = Afternoon Ambient Temperature; EAT = Evening Ambient Temperature; MAXT = Morning Axillary Temperature; AAXT = Afternoon Axillary Temperature; EAXT = Evening Axillary Temperature; MRT = Morning Rectal Temperature; ART = Afternoon Rectal Temperature; ERT = Evening Rectal Temperature. T1 = 0.00% ASA; T2 = 0.025% ASA; T3 = 0.050% ASA; T4 = 0.075% ASA; SEM = Standard error of the mean.

Table 3: Comparison between weekly ambient, axillary and rectal temperature of layers fed varying level of acetylsalicylic acid (ASA).

Week	Ambient(°C)	Axillary(°C)	Rectal(°C)	Difference (Rectal – Axillary)
1	27.44±1.72	40.84±0.24	41.46±0.16	0.62
2	28.11±2.11	40.58±0.26	41.71±0.14	1.13
3	29.11±2.16	40.50±0.30	41.65±0.17	1.15
4	29.99±1.91	40.64±0.27	41.69±0.23	1.05
5	29.78±1.66	40.71±0.25	41.62±0.19	0.91
6	30.44±2.35	40.78±0.23	41.59±0.21	0.81
7	28.44±1.94	40.62±0.17	41.54±0.15	0.92
8	29.56±1.63	40.55±0.19	41.46±0.12	0.91

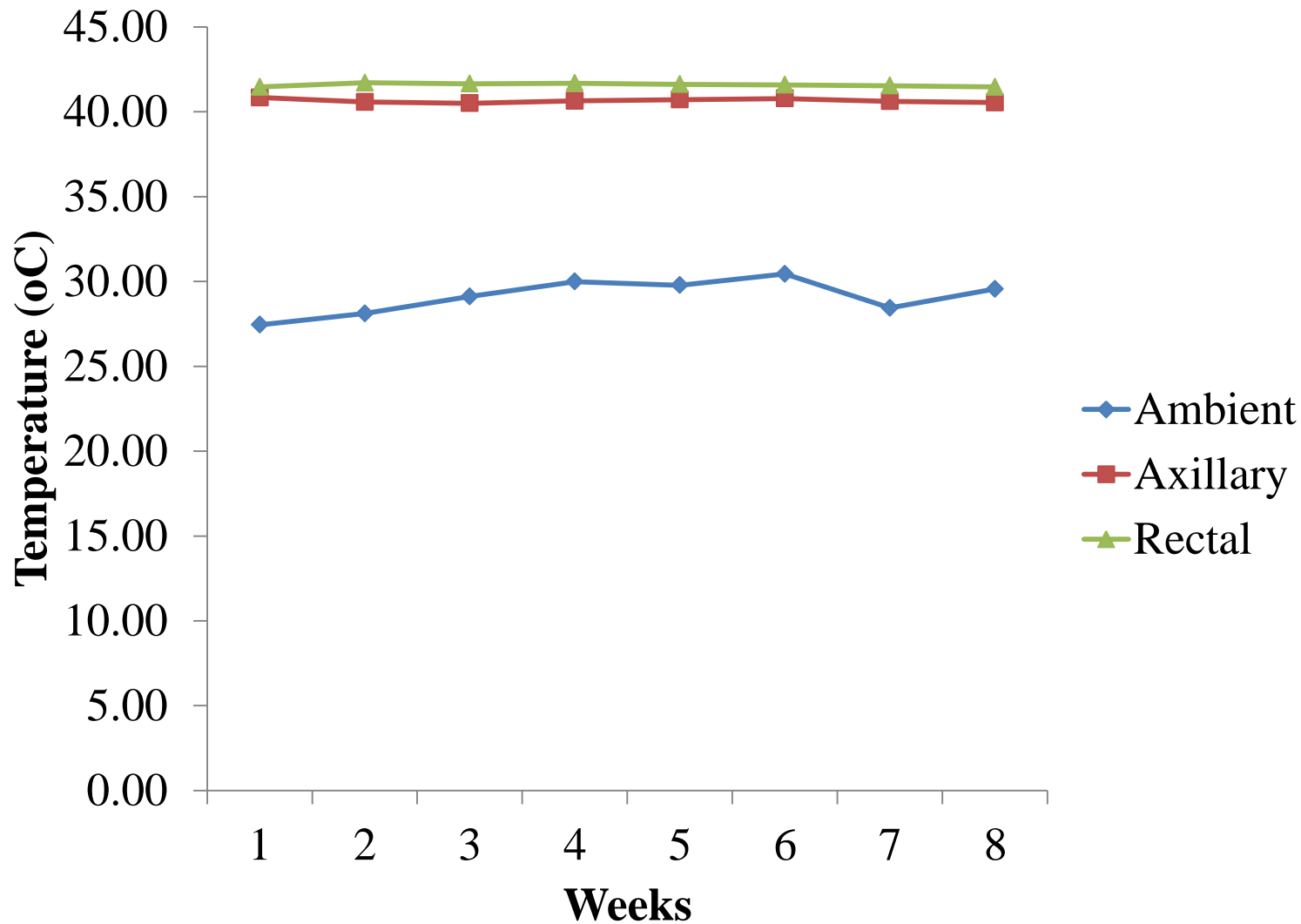


Figure 1: Weekly ambient, axillary and rectal temperature of layers fed varying level of acetylsalicylic acid (ASA)

CONCLUSION

- ❖ The rectal temperature proved a better method of taking the body temperature of the domestic chicken than the axillary temperature.
- ❖ The Isa Brown breed had a lower body temperature in comparison with the Harco Black.
- ❖ The Isa Brown breed is therefore a better adapted breed to the high environmental temperature that subsists in the tropics than the Isa Black breed.
- ❖ This experiment confirmed the temperature lowering ability of ASA and its potency as an antipyretic drug.
- ❖ The use of ASA as a veritable intervention tool against heat stress in tropical livestock should therefore be encouraged.

A blue five-pointed star with a thin dark blue outline. The text "THANKS FOR LISTENING" is centered within the star in a bold, red, sans-serif font. The words are stacked vertically: "THANKS" on the top line, "FOR" on the middle line, and "LISTENING" on the bottom line.

**THANKS
FOR
LISTENING**