



# Efficacy of double-buffered sodium butyrate supplementation in low energy-protein broiler diets

B. Iglesias<sup>1,2</sup>, M.V. Charriere<sup>1</sup>, V. Fain Binda<sup>1</sup>, C. Marecaille<sup>3</sup> and J. Melo<sup>3,4\*</sup>

<sup>1</sup>Secc. Avicultura, EEA Pergamino, Inst. Nac. Tec. Agropecuaria (INTA), Argentina; <sup>2</sup>Depto. Prod. Animal, UNNOBA, Argentina; <sup>3</sup>Dietaxion SAS, France; <sup>4</sup>Depto. Tecnología, Univ. Nac. Luján (UNLu), Argentina.

**OBJECTIVE :** The aim of this study was to evaluate if when doing a higher reduction of energy and protein in broiler diets, DBSB (Double-buffered sodium butyrate) allows to reach the performance of birds fed a classic field diet.

## MATERIALS AND METHODS:

**Animals:** 972 one-day-old male broiler chicks (Cobb-500) were allocated in 54 floor pens (9 replicates/treatment).

**Feed:** A three phases feeding program was used (1-7; 8-21; 22-33 days).

**Treatments:** Factorial 3 x 2

- **Control (CTRL):** industrial diet (corn, soybean meal, M&B meal)- AME-kcal/kg: 2,950, 3,000, 3,100; CP-%: 22.0, 20.0, 18.5; Lys<sub>dig</sub>-%: 1.22, 1.12, 1.03
  - **Low Energy Protein (LEP):** Control diet -3% AME, CP, Lys<sub>dig</sub>, M+C<sub>dig</sub>, Thr<sub>dig</sub> .
  - **Very Low Energy Protein (VLEP):** Control diet -5% AME, CP, Lys<sub>dig</sub>, M+C<sub>dig</sub>, Thr<sub>dig</sub>
- And
- **DBSB (BUTYLin<sup>®</sup>54):** Was or not included on-top from 1-33 days at 600g/MT.



## Parameters:

- Feed intake (FI)
- Feed conversion ratio (FCR)
- Body Weight (BW)
- BW/FCR

## Statistical analysis:

ANOVA

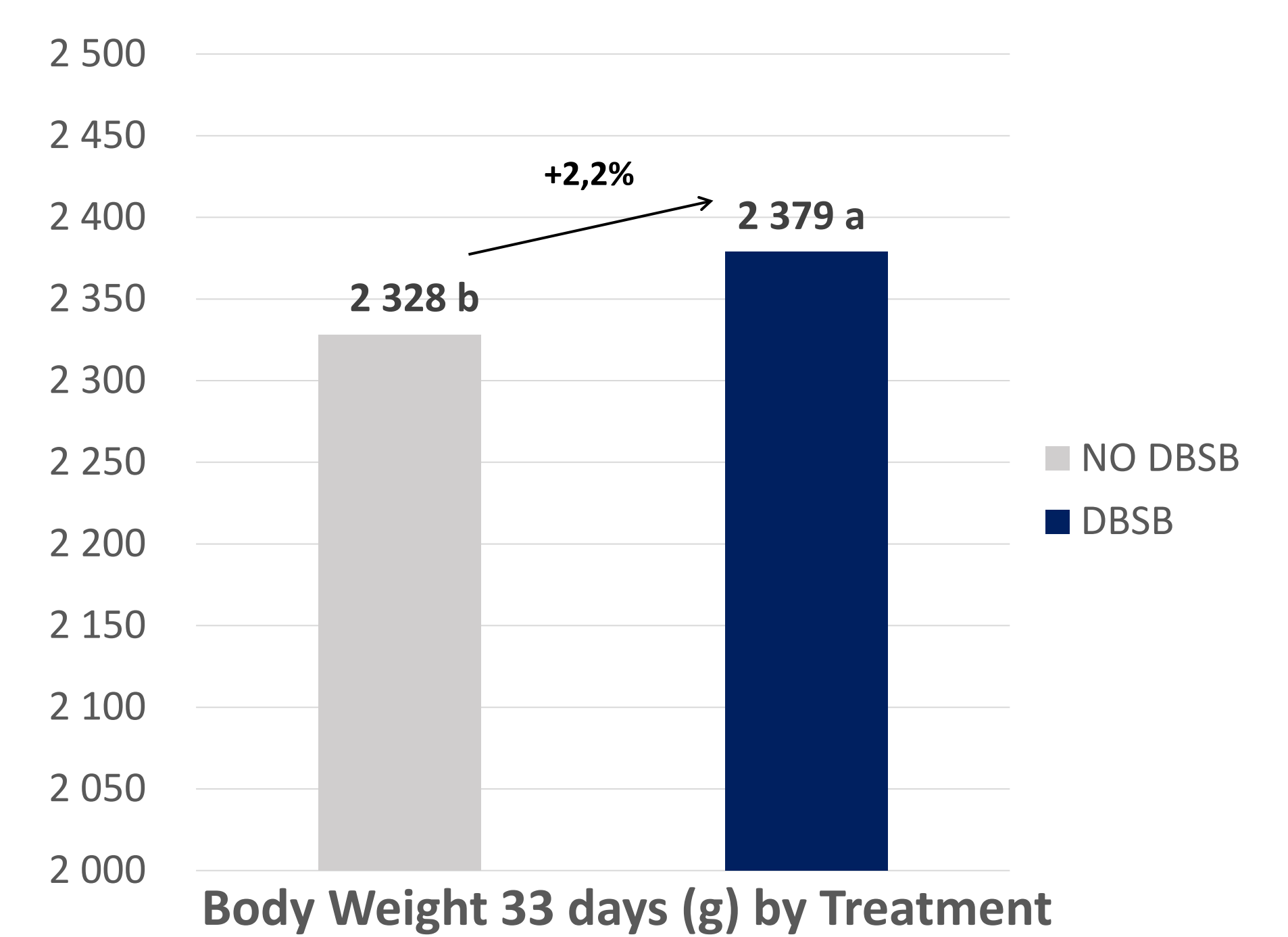
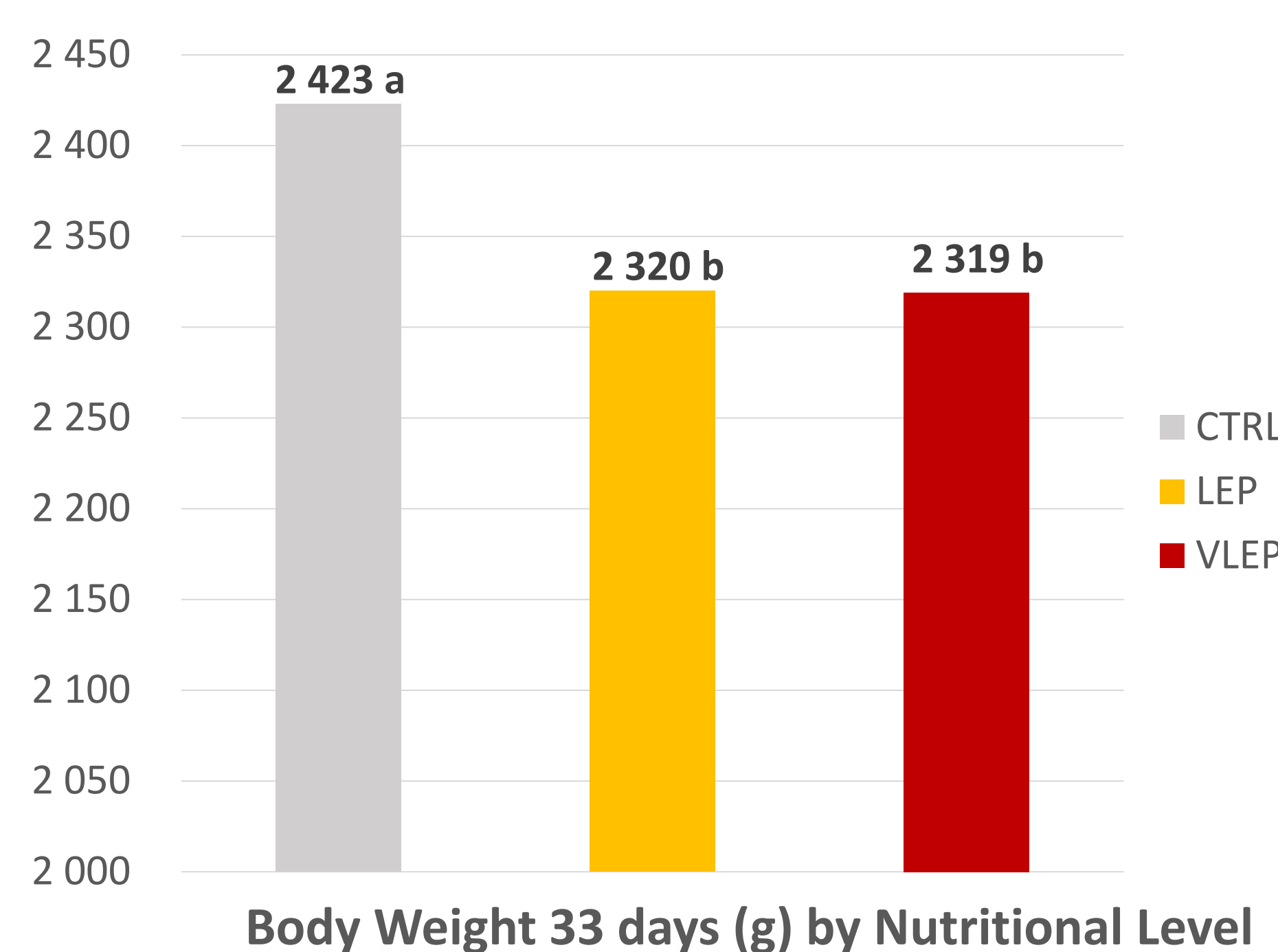
## RESULTS:

- At 33-d Body Weight (BW) decreased as the nutrient deficit increased ( $p \leq 0.05$ ). When DBSB was added to the diets, regardless of the nutrient level, it increased BW at the same age ( $p \leq 0.05$ ).
- The FCR increased as the nutrient levels in the diet decreased ( $p \leq 0.05$ ). When DBSB was added to the diets, regardless of the nutrient level, no effects were observed in FCR ( $p > 0.05$ ).
- BW/FCR decreased as the nutrient level decreased ( $p \leq 0.05$ ) but increased when DBSB was added ( $p > 0.05$ ).

**Table 1: Performance of broilers according to treatment for 33 days**

	BW 33 d (g)	FI 33 d (g)	FCR 33 d	BW/FCR
CTRL-Without	2376	3582 <sup>b</sup>	1.520	1580
LEP-Without	2316	3599 <sup>b</sup>	1.555	1471
VLEP-Without	2292	3685 <sup>a</sup>	1.606	1430
CTRL-DBSB	2470	3581 <sup>b</sup>	1.473	1681
LEP-DBSB	2324	3677 <sup>a</sup>	1.581	1437
VLEP-DBSB	2345	3688 <sup>a</sup>	1.587	1467
DBSB	* ( $P < 0.05$ )	* ( $P < 0.05$ )	NS ( $P > 0.05$ )	NS ( $P > 0.05$ )
NUT.LEV.	* ( $P < 0.05$ )	* ( $P < 0.05$ )	* ( $P < 0.05$ )	* ( $P < 0.05$ )
NL x DBSB	NS ( $P < 0.1$ )	* ( $P < 0.05$ )	NS ( $P < 0.1$ )	NS ( $P < 0.1$ )

NS: Not significant ; a & b for significant difference ( $P < 0.05$ )



**CONCLUSION:** The supplementation of 600 ppm of DBSB in broilers fed LEP or VLEP diets enables to get similar BW compared to birds fed a common field diet, which means that DBSB is then a good strategy to save resources and avoid excess of excretions in the environment.