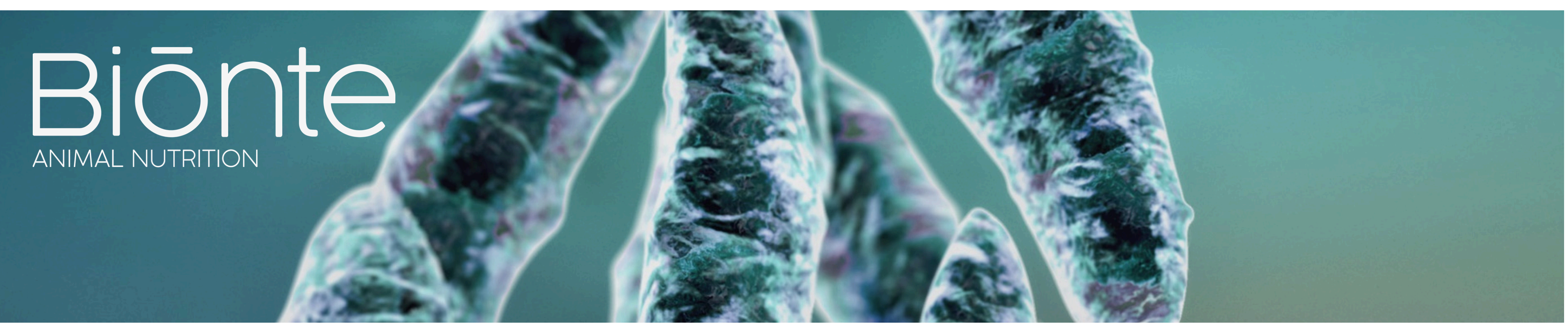


JULY 4-5, 2024
ICM
HUAHIN, THAILAND

The use of an innovative anti-mycotoxin agent to mitigate the adverse effects of aflatoxin B1 in broiler chickens

Insaf Riahi[1], **Antonella Della Badia**[1], **Raquel Codina**[1], **Diego Sturza**[2], **Leandro Giacomini**[2], **Carlos Mallman**[3]

[1] *Technical Department, BIŌNTE Nutrition S.L., Reus (Spain);* [2] *Instituto Samitec, Santa Maria (Brazil);* [3] *Universidade Federal de Santa Maria, Laboratório de Análises Micotoxicológicas, Santa Maria, Rio Grande do Sul (Brazil)*

✉ **insaf.riahi@bionte.com**

INTRODUCTION

Aflatoxin B1 (AFB1) represents the predominant mycotoxin that negatively impairs **broilers health** and **production.** The detrimental effects on health described in this species involve **intestinal damage**, **oxidative stress and altered immune system** (Sarker et al., 2023). Thus, the mitigation of those detrimental effects is essential to **ensure animal welfare and production.**

OBJECTIVE

This study **aims to evaluate the efficacy of an anti-mycotoxin agent (AMA)**, containing selected binding material combined with natural extracts and yeasts, in **improving animal performance** and **mitigating the intestinal epithelium damage induced by AFB1 in broilers chickens.**

MATERIALS AND METHODS

Experimental animals
480 male broilers (Cobb 500)
12 replicates/treatment
10 broilers/replicate
Non-antibiotic administration
Naturally contaminated diets
Fed *ad libitum*

Dietary treatments

- **Control diet**
- **AFB1 = aflatoxin B1 2.8 ppm**
- **AMA = anti-mycotoxin agent**
- **AFB1 + AMA = AFB1 with AMA treatment**

Controls and sampling (21 days)

ANIMAL PERFORMANCE

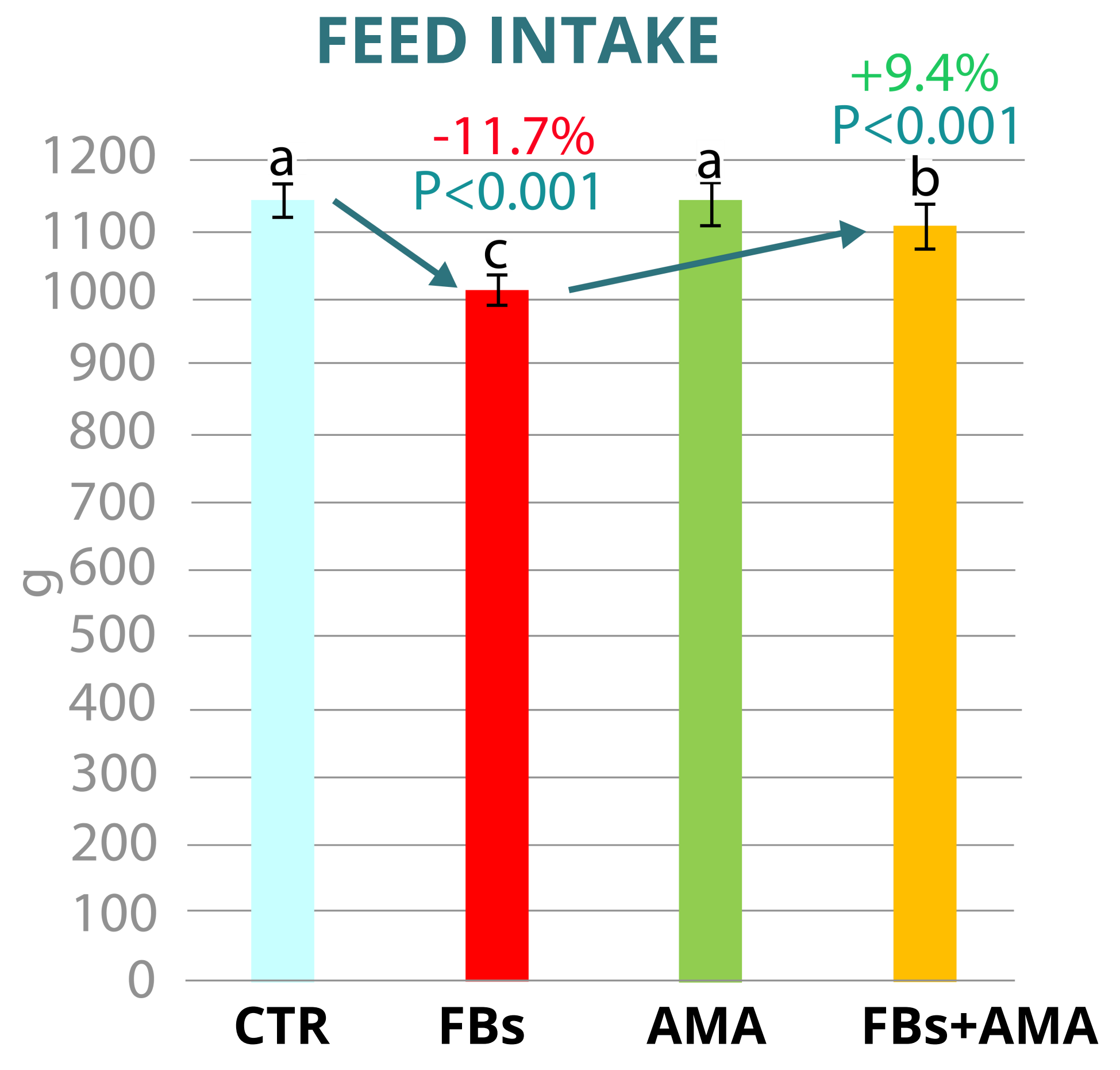
- **FEED INTAKE**
- **BODY WEIGHT GAIN (BWG)**

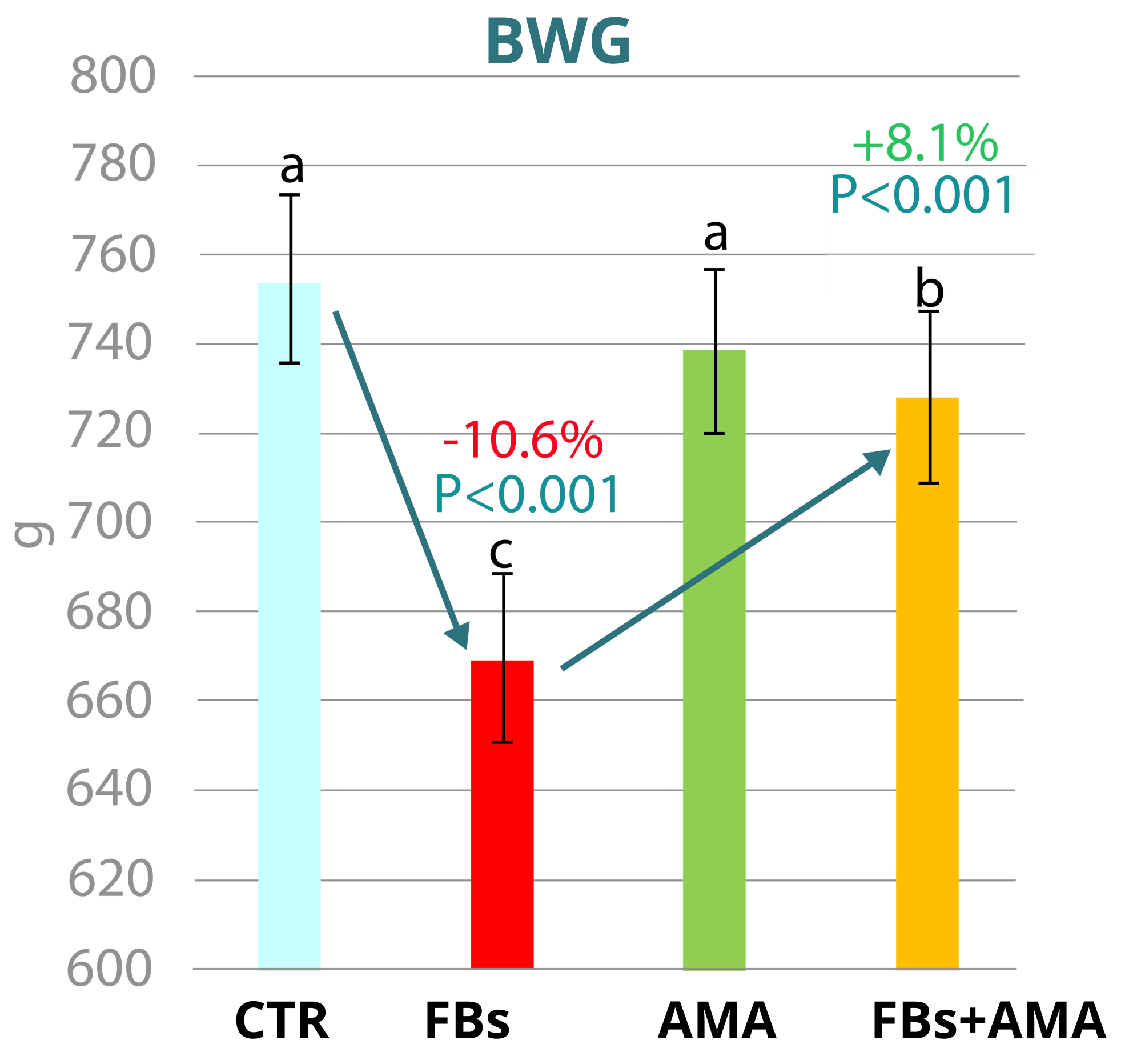
INTESTINAL HISTOMORPHOMETRY

- **VILLUS HEIGHT (VH)**
- **VH/CD RATIO**
- **CRYPT DEPTH (CD)**
- **ABSORPTION SURFACE**

RESULTS

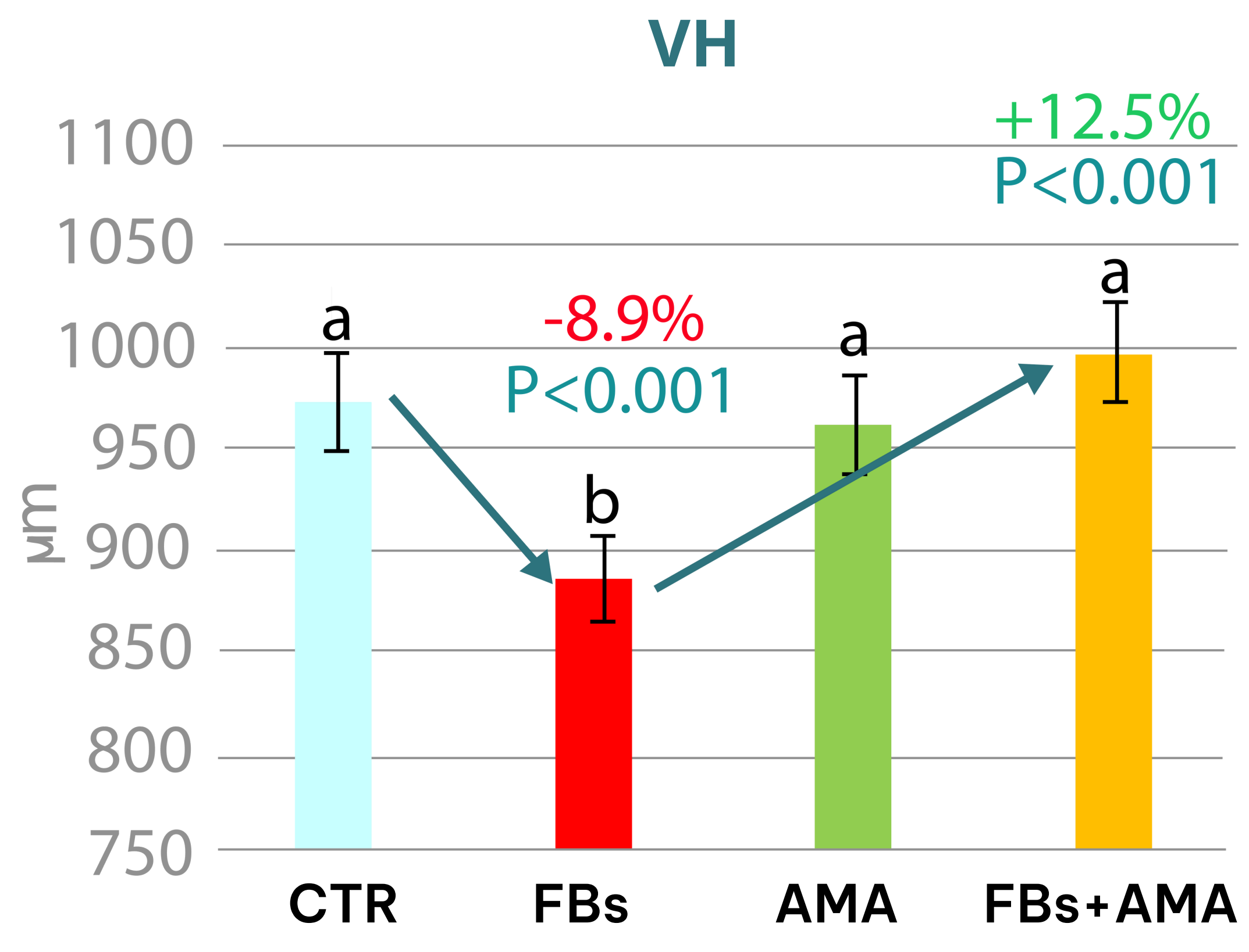
ANIMAL PERFORMANCE

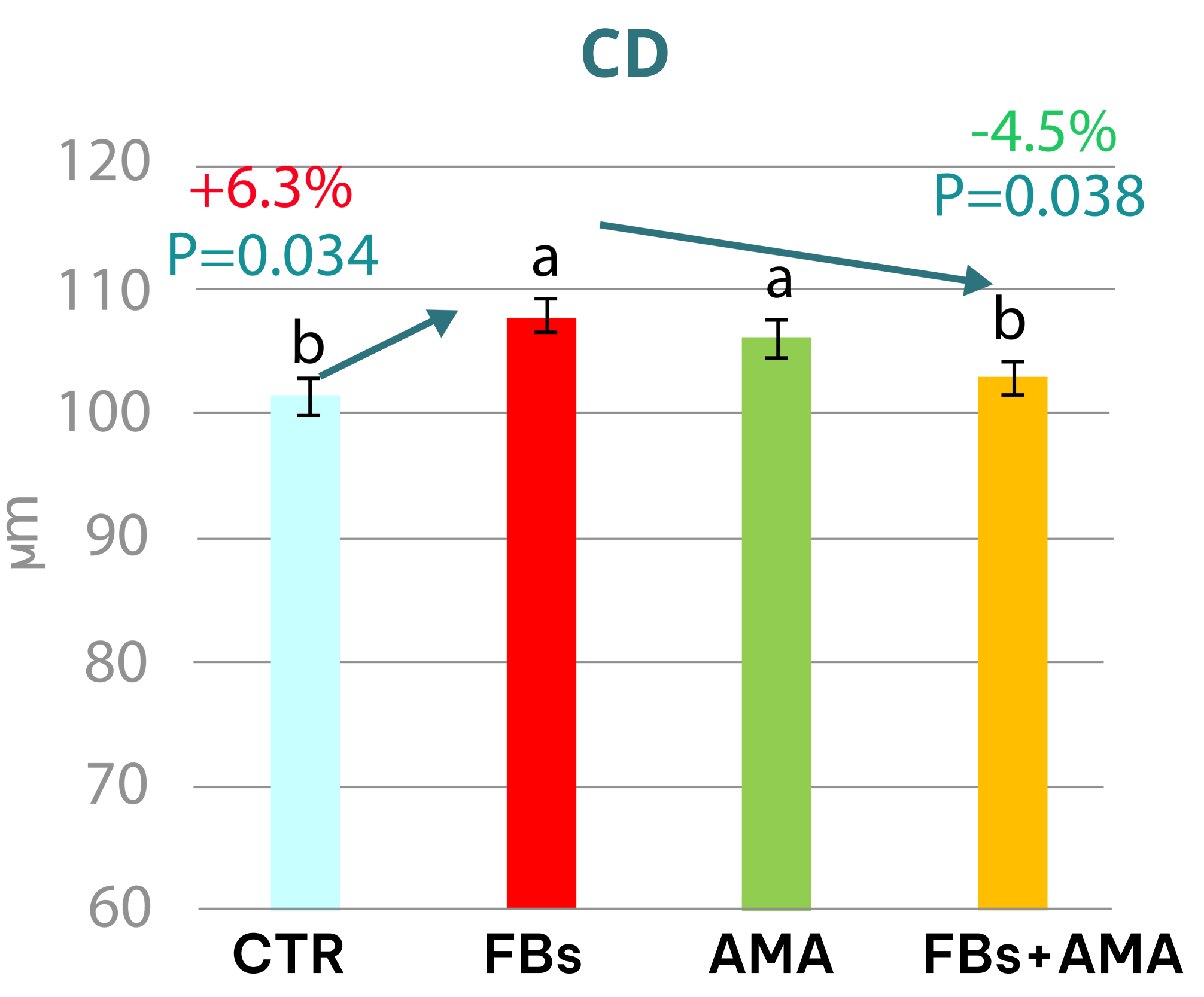


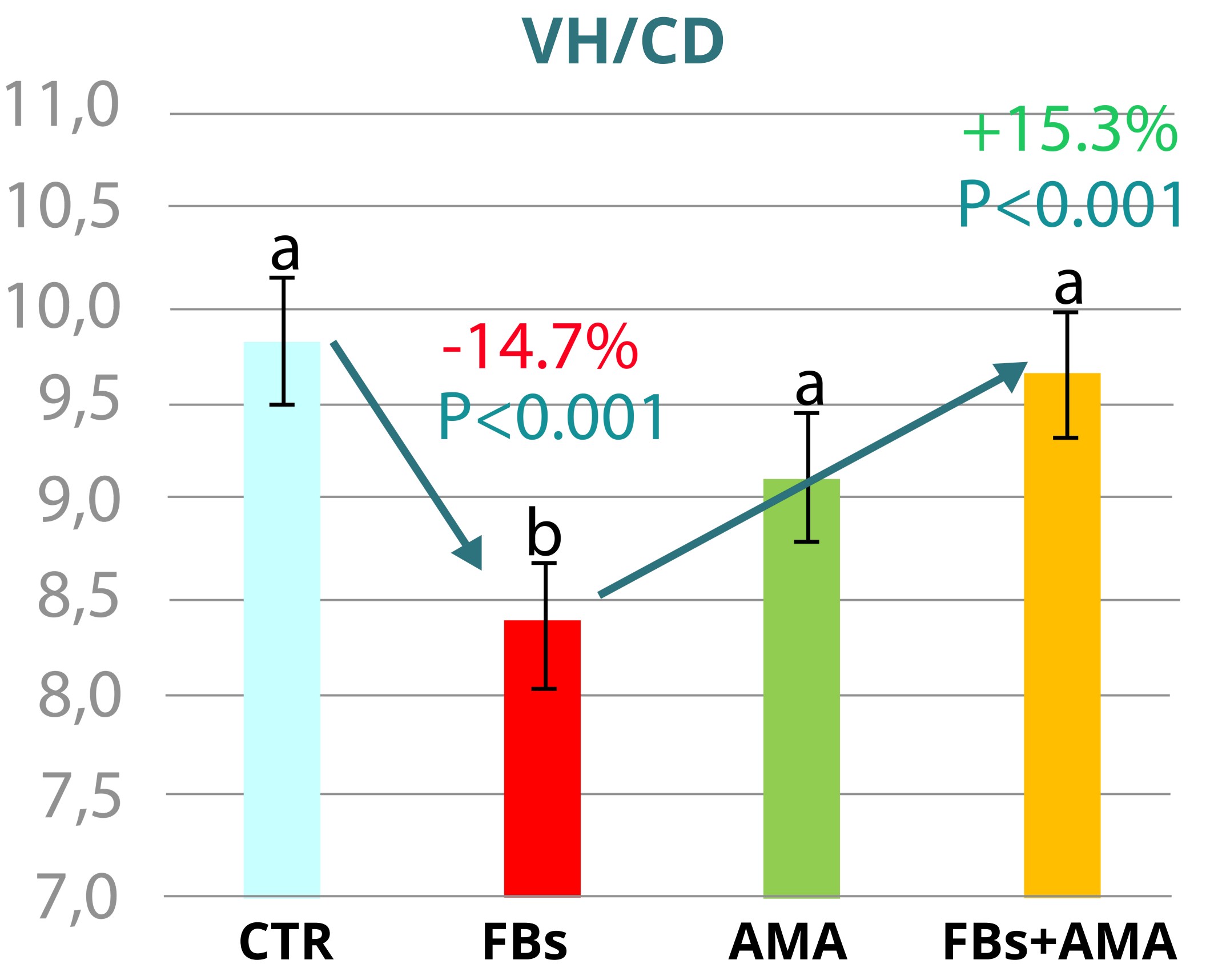


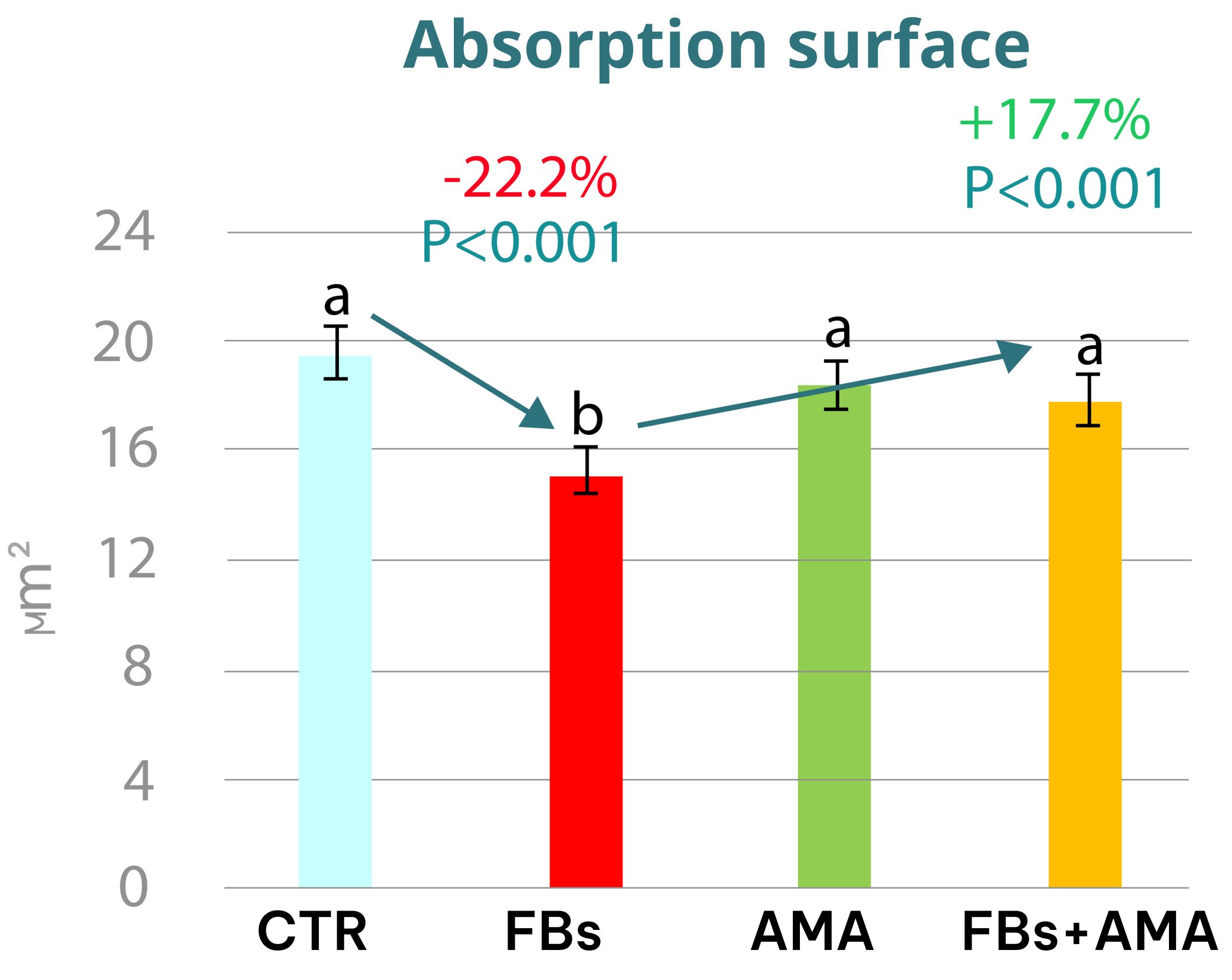
AFB1 reduced **feed intake** and **BWG**. The tested **AMA counteracted these effects**, increasing the **feed intake** and **BWG.**

INTESTINAL HISTOMORPHOMETRY









AFB1 exposure **reduced VH, VH/CD ratio** and **the absorption surface,** and **increased CD.**
The inclusion of **AMA counteracted these effects** on **the jejunum of broiler chickens.**

CONCLUSIONS

The innovative **anti-mycotoxin agent** containing selected **binding material** combined with **natural extracts** and **yeast,** enhanced **animal performance** and improved the **gut integrity** in **broiler chickens challenged by AFB1.**

MINISTERIO DE CIENCIA E INNOVACIÓN
CDTI Centro para el Desarrollo Tecnológico Industrial
Universidade Federal de Santa Maria
SAMITEC

Biōnte
ANIMAL NUTRITION