



Raising Broiler without Antibiotics: Performance and Economics

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Background

- Antibiotics are used to treat illness in humans and animals.
- Bacterial resistance to antibiotics globally led to a ban in some EU countries as feed growth promoters in livestock (Dermot and Helen, 2003).
- Food animals are major reservoir of bacteria responsible for infection in humans while in Canada, *Salmonella enteritidis*, *Campylobacter jejuni* and verotoxin-producing *Eschericia coli* and *Multi-resistant Staphylococcus aureus (MRSA)* are the prominent ones (Health Canada, 2002) and are transmitted through contaminated food (e.g. Meat, poultry)



Fig. 1: Broiler chicken feeding from hanging feeder.

Objectives

- To evaluate effect of broiler diet supplementation with and without antibiotics, HyD and two prestarter nutrient densities on growth, efficiency and yield.

Design/Materials and Methods

- 3200 Ross 308 broiler chickens were used.
- Birds were allocated to 32 pens of 100 per pen and fed 8 different dietary treatments from day-old to 40 d
- A 2 x 2 x 2 factorial experiment (completely randomised design) was conducted, with 4 replicates of each treatment:
 - 2 prestarter nutrient densities (0-14 d):
 - High [3,025 Kcal/kg, 23.9% CP]
 - Low [2,858 kcal/kg, 22.3% CP]
 - 2 HyD treatments (no HyD and 69 IU HyD/kg)
 - 2 antibiotic treatments (no antibiotic or 0.05% BMD)
- Data collected: Individual BW (weekly), group BW (fortnight), feed intake, mortality. Dissections were done at 42 d of age

Results

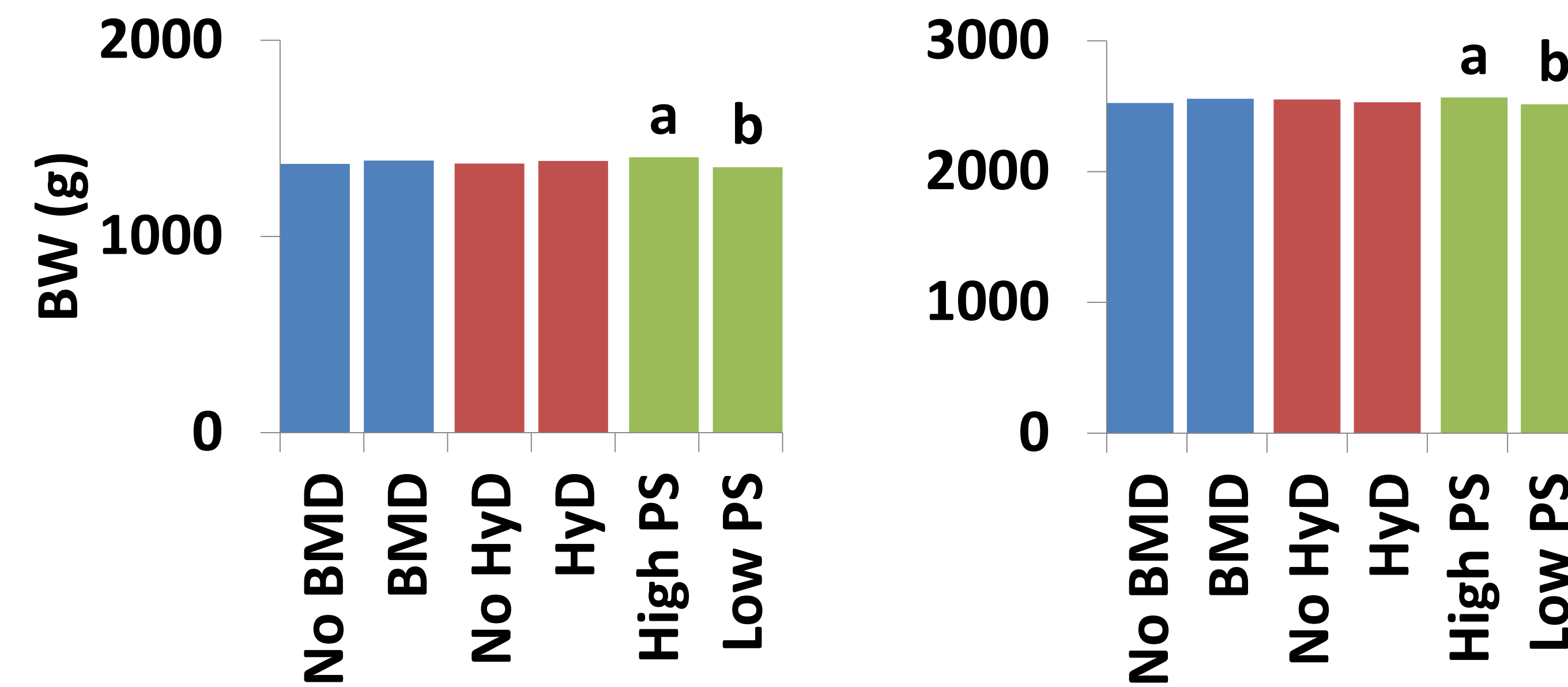


Fig. 2: Effect of BMD, HyD and Prestarter nutrient density on live body weight for broiler chicken at 28 d (left panel) and 40d (right panel).

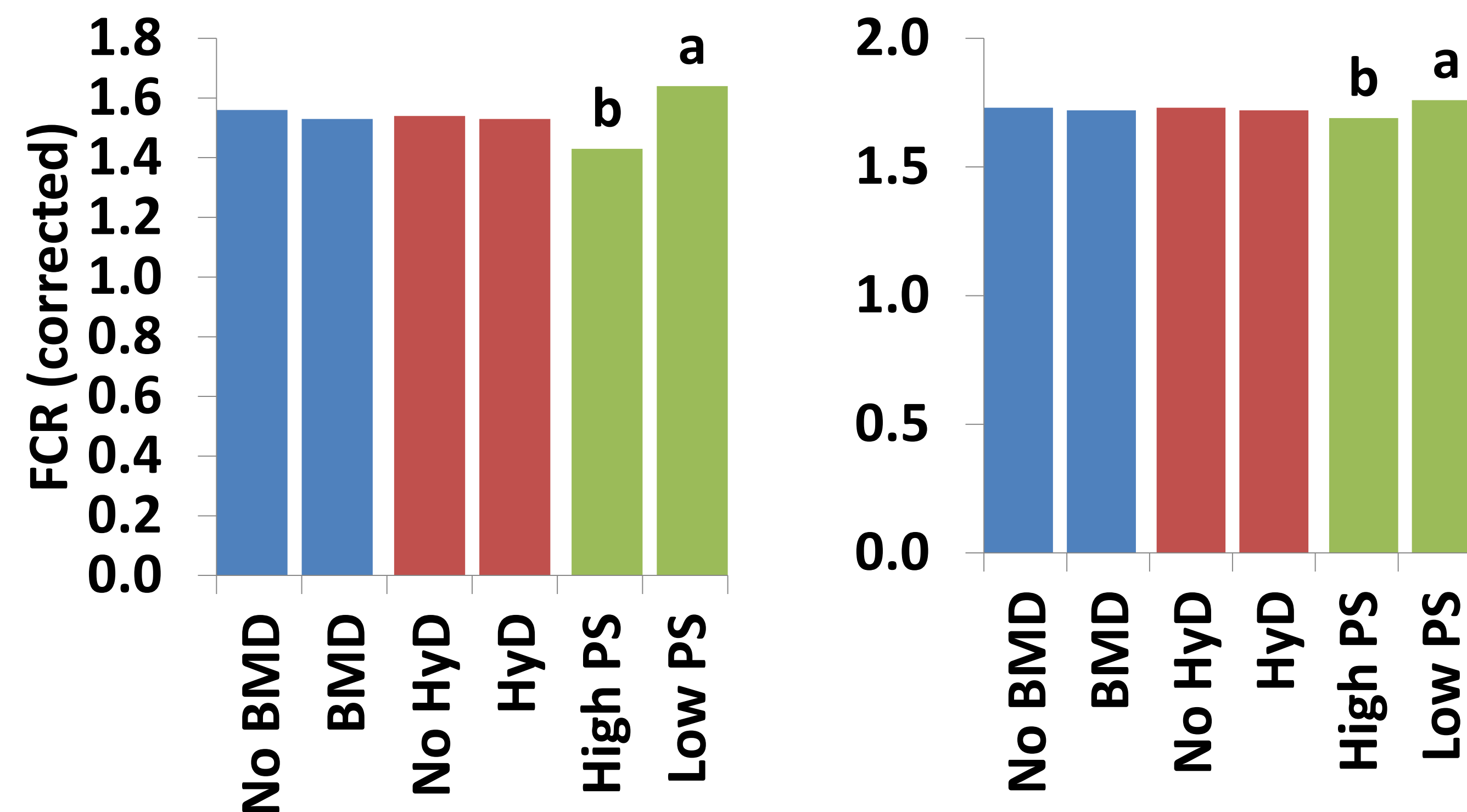


Fig. 3: Effect of BMD, HyD and Prestarter nutrient density on cumulative feed conversion ratio corrected for mortality at 28 d (left panel) and 40d (right panel).

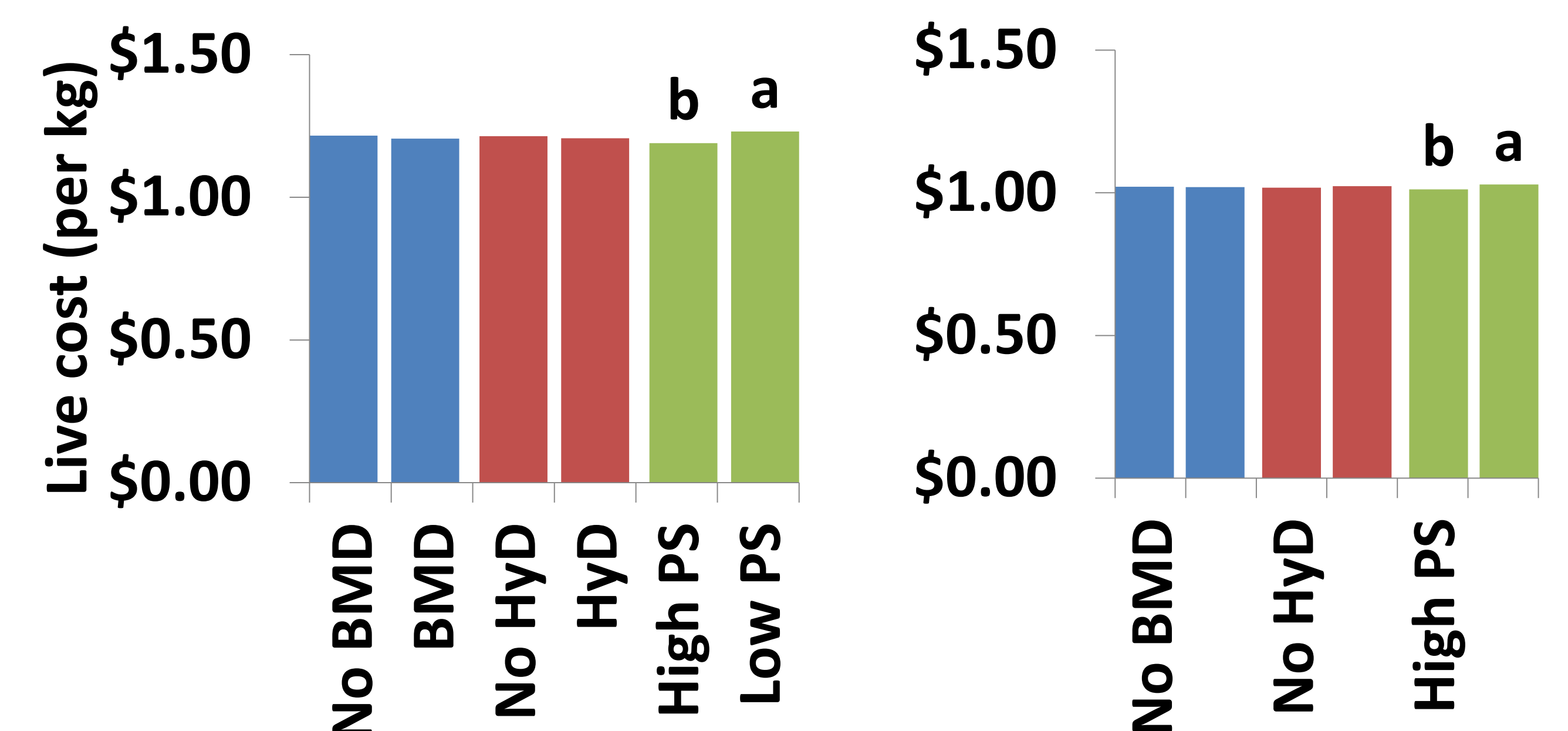


Fig. 4: Effect of BMD, HyD and Prestarter nutrient density on live cost of production for broiler chicken at 28 d (left panel) and 40d (right panel).

Results

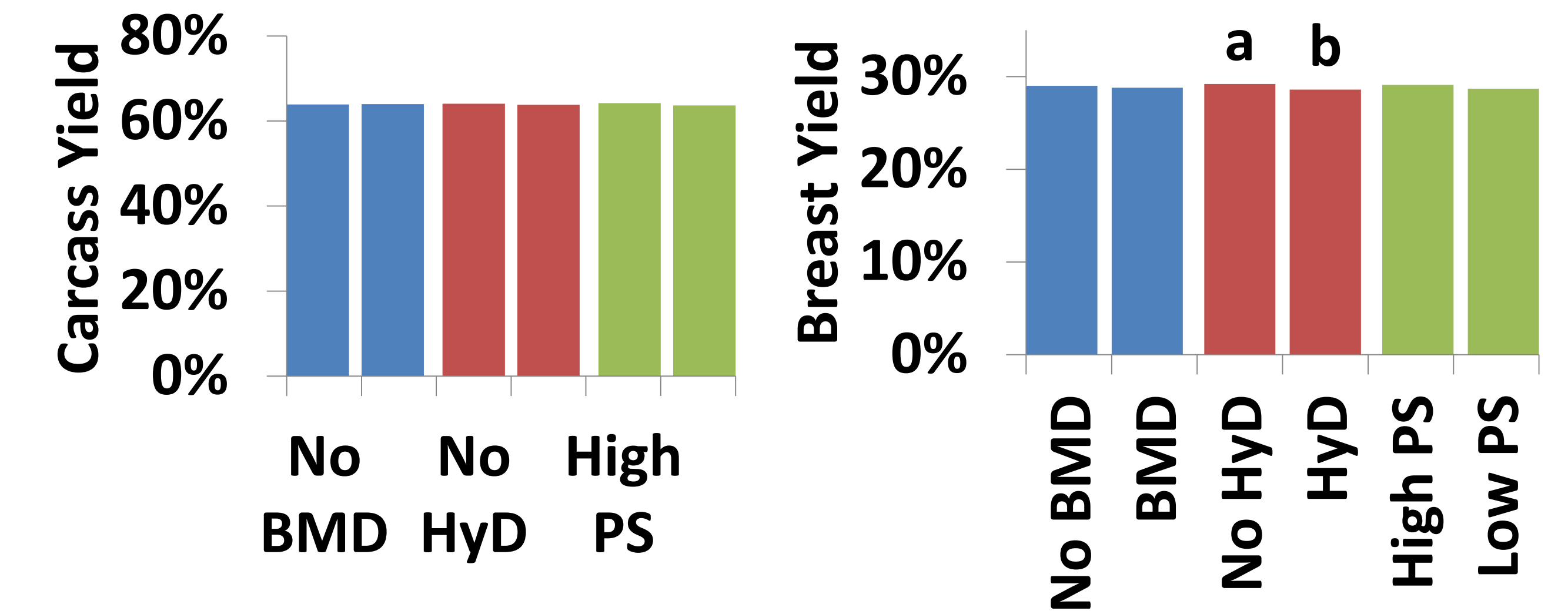


Fig. 5: Effect of BMD, HyD and Prestarter nutrient density on carcass and breast yield of broiler chicken at 42 d.

Take Home Message

- Antibiotic and HyD had no significant effect on the live weight of the broiler, but high energy density increased BW.
- Antibiotics and HyD had no significant effect on cumulative feed conversion ratio or cost of production, but high prestarter nutrient density reduced FCR and cost of production.
- HyD inclusion reduced breast yield.
- Antibiotic usage did not significantly improve production efficiency or reduce cost. With good on-farm management, these results should be achievable commercially.

Acknowledgments



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References

Dermot J. H and H. H. Jensen. 2003. Lessons from the Danish Ban on feed-grade antibiotics. Health Canada. 2002. Uses of antimicrobials in Food Animals in Canada

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