Broiler preferences for feed moisture content, wheat structure and pellet size

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Introduction

Wet porridge-like feed has been shown to improve broiler feed intake and growth. Large dietary particles, such as whole wheat (WW) can improve broiler performance. However, WW is difficult to incorporate into pellets. It is unknown whether broilers have a preference for a coarse dietary structure (WW) in a pellet and if they prefer a certain pellet size.

The aim of this study was to gain insight in the long-term preferences of broilers for feed moisture content, wheat structure and pellet size in continuous choice feeding situations.

Methods

- 108 one-day-old male Ross 308 broilers in 12 floor pens (2 m^2).
- 3 different choice-fed periods.
- *Ad libitum* access to 2 or 4 different feeding troughs.
- Daily measurements in 6 hour measurement periods.
- Diets all had a similar ingredient composition.
- The following contrasts were used:
  - Dry or wet (1:1 w/w feed to water), Period 1 & 2.
  - Whole wheat (WW) or ground wheat (GW), Period 2 & 3.
  - Pellet diameter of 4mm or 6mm, Period 3.

Preference results

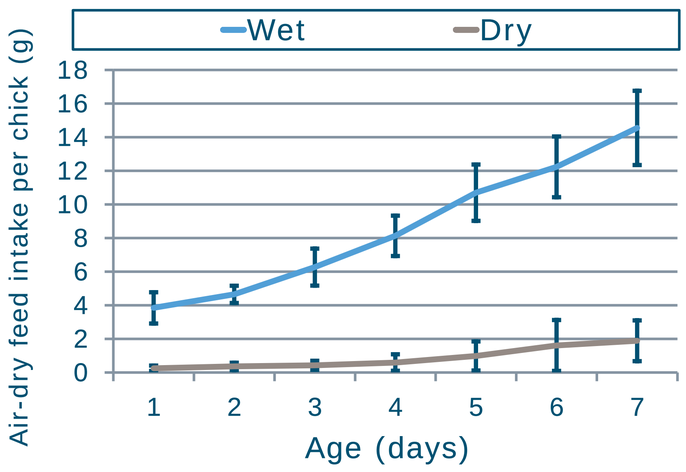


Figure 1: Period 1, 0 to 7 days

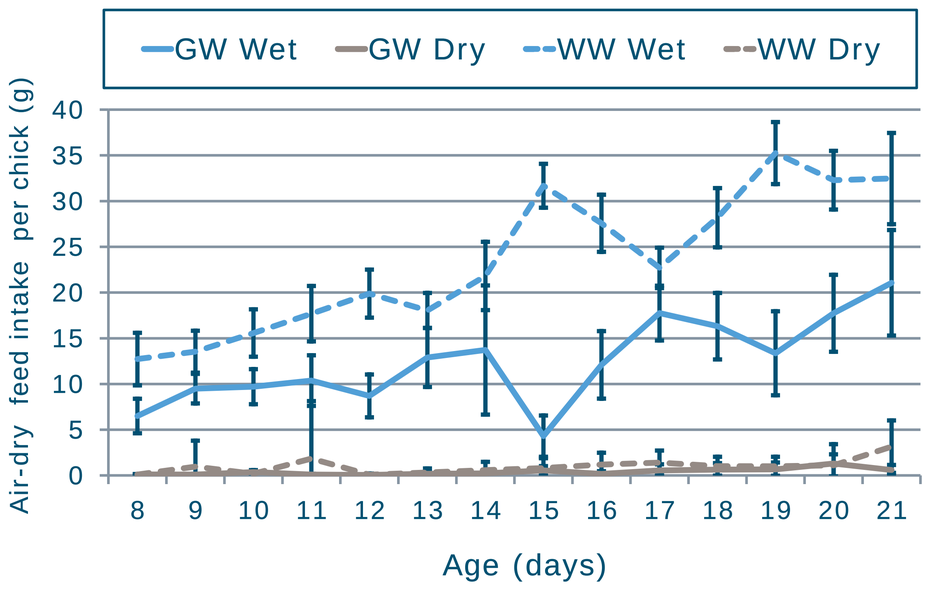


Figure 2: Period 2, 8 to 21 days

Growth results

- No differences were found for preferences between pens with the largest birds and pens with the smallest birds.
- Broilers were about 10% heavier than broilers in a neighbouring no-choice experiment fed the same diets but as dry (see table).

	Only dry feed		Choice Wet & Dry	
Age	7d	21d	7d	21d
BW (g)	175.6	1026.5	192.2	1144.5
ADG (g/d)	18.2	59.2	20.9	62.7

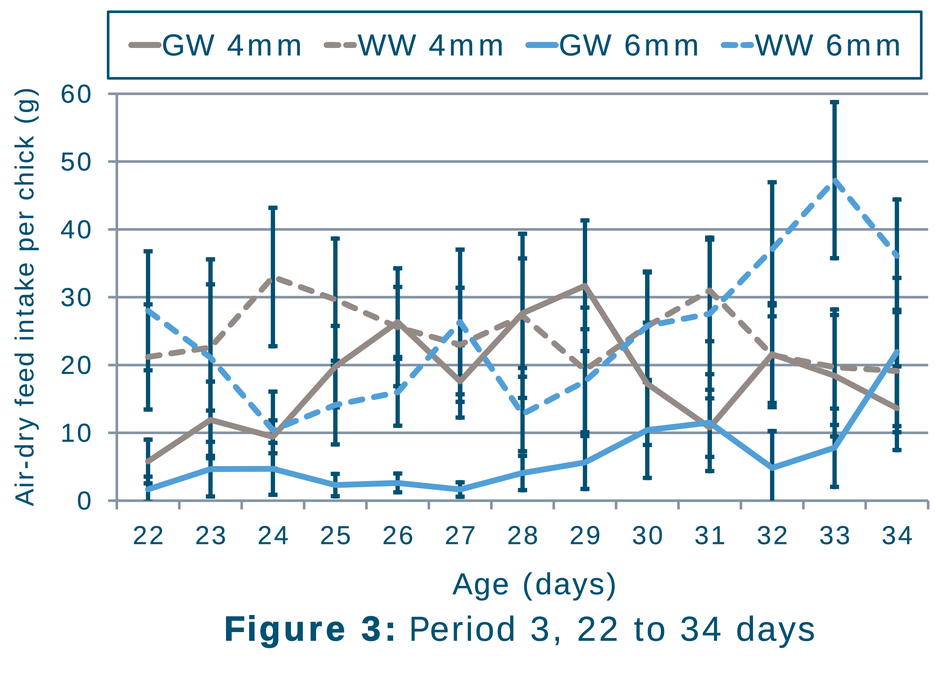
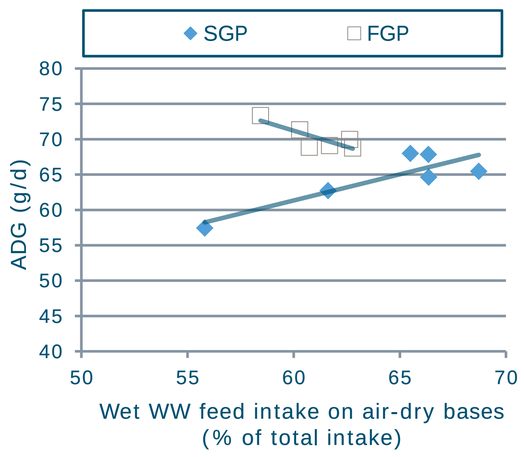


Figure 3: Period 3, 22 to 34 days

In P2 a positive correlation between ADG and WW wet consumption was found for light birds (SGP; BW d21=1100.1 ± 69.2g) and a negative correlation for heavy birds (FGP; BW d21=1188.9 ± 31.0g).



Conclusions

- Broilers have a strong preference for wet over dry diets and, although somewhat less pronounced, WW diets are preferred over GW diets.
- A high preference for WW wet diets mostly benefited the slower growing broilers.
- Results on pellet size preferences appears to be affected by the poor durability of the diets in this trial.

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