# THE RELATIONSHIP BETWEEN FEED EFFICIENCY AND VISCERA WEIGHT IN BROILERS

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Gastrointestinal tract function obviously plays a crucial role in the growth performance of broiler chickens. Moreover, the gut has a disproportionately high energy and nutrient requirement relative to its weight. In theory, a lighter gastrointestinal tract, with a reduced energy need, would be more efficient; resulting in improved feed conversion ratios (FCR). Preliminary experiments were conducted to test this hypothesis. In two studies, using either Cobb or Ross broilers, 6,000 chicks were offered starter and grower diets with three tiers of nutrient specifications (Table 1). At 42 days post-hatch, 10 male and 10 female birds were randomly selected from each group of 2,000 birds and euthanased. These birds were defeathered and eviscerated and the percentage of viscera to carcass weight determined. The feed conversion ratios of each group were determined from total feed consumed and total live weights of the birds. The relative viscera weights were then plotted against FCR as shown in Figure 1. Simultaneously another 2,000 birds were offered Type A diets but containing a different soyabean meal. The relative viscera weights are plotted against FCR as shown in Figure 2, where there was a significant difference ($P < 0.01$) in viscera weight. These preliminary results suggest there are significant correlations between relative viscera weight and FCR. Reducing nutrient specifications density or using a poorer quality soybean meal were associated with heavier relative viscera weights and less efficient FCR values.

Table 1. Metabolisable energy and protein contents of experimental diets

| Item | Starter diets (1-21 days) | | | Grower diets (22-42 days) | | |
|---|---|---|---|---|---|---|
| | Diet A | Diet B | Diet C | Diet A | Diet B | Diet C |
| ME (MJ/kg) | 12.97 | 12.59 | 12.33 | 13.39 | 13.07 | 12.69 |
| Protein (g/kg) | 215 | 215 | 206 | 190 | 190 | 180 |

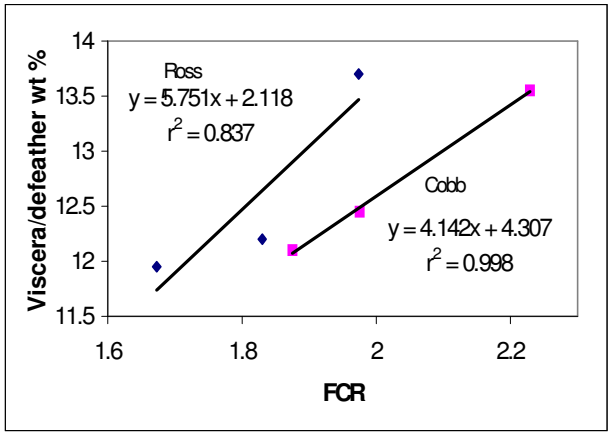


Figure 1. Relationship between relative viscera weight and FCR in diets with three tiers of nutrient specifications.

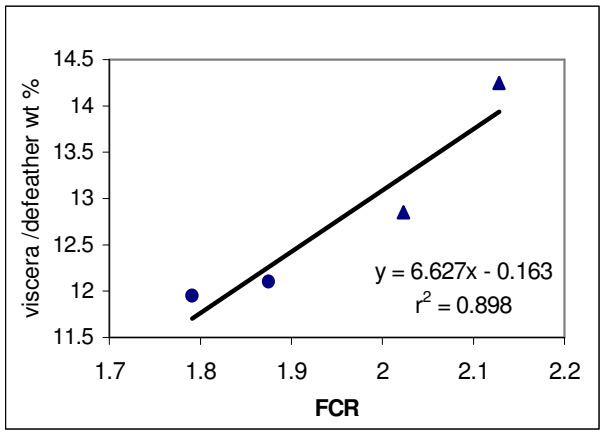


Figure 2. Relationship between relative viscera weight and FCR in diets with different soybean meals. • Soon Soon SBM▲Argentinian SBM.

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