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Effect of Soybean Meal Quality and Feed Nutrient Densities on Mortality of Broilers under Disease Challenge

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Introduction

Modern intensive poultry farming puts tremendous stress on the birds. These birds are expected to perform to the maximum of their genetic potential, often under sub-optimal environmental conditions. Although various bio-security measures have been implemented, these birds are still susceptible to infectious diseases resulting in high mortality whenever disease challenge is high. Therefore it is important at this stage for the Malaysian poultry industry to look into ways to overcome this weak link in the production chain. Bio-security and drug medication have been proven to be insufficient.

Methods and Results

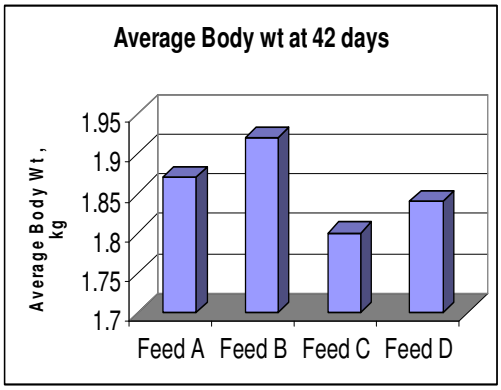
In one of our broiler feeding trials involving 8000 birds, the farm was hit by Chronic Respiratory Disease (CRD), resulted in high mortality among the experimental birds. The trial in progress at that time was comparing diets using Soon Soon High Efficiency soybean meal with imported Argentine soybean meal. The trial further compared two diets with reduced nutrient density while using Soon Soon High Efficiency soybean meal. The nutrient specifications are given in Table 1. The final results of the trial are given in Table 2

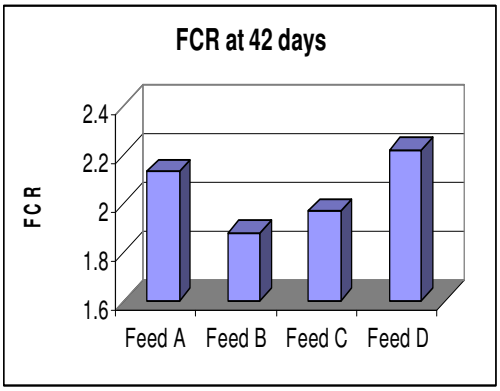
Table 1: Nutrient specifications of the trial diets. Feed A : using imported Argentine dehulled SBM, Feed B : using High Efficiency dehulled SBM, Feed C and Feed D : using High Efficiency dehulled SBM with reduced ME and protein.

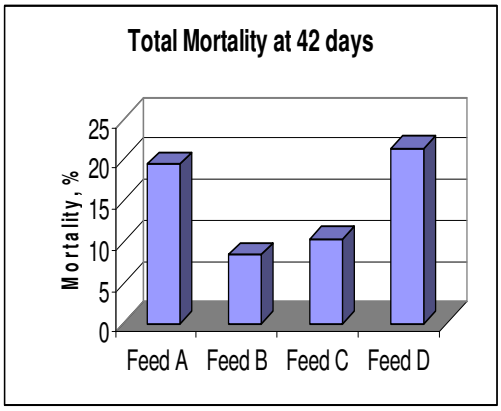
Type of Feeds		ME	Protein	Lysine	Methionine	M+C
Starter	Feed A	3100	21.5	1.245	0.565	0.92
	Feed B	3100	21.5	1.245	0.565	0.92
	Feed C	3009	21.5	1.200	0.562	0.92
	Feed D	2946	20.6	1.200	0.576	0.92
Grower	Feed A	3200	19.0	1.125	0.581	0.90
	Feed B	3200	19.0	1.125	0.581	0.90
	Feed C	3125	19.0	1.100	0.579	0.90
	Feed D	3033	18.0	1.100	0.592	0.90

Table 2 : Average body weight, FCR and mortality rate at 42 days

	Feed A	Feed B	Feed C	Feed D
Average body weight , kg	1.87	1.92	1.80	1.84
FCR	2.13	1.88	1.97	2.22
Total mortality, %	19.4	8.4	10.3	21.3







Discussion

The mortality rate of broilers fed diets using Soon Soon High Efficiency soybean meal was less than half compared with the birds fed diets using Argentine soybean meal. Reducing nutrient densities of the feed resulted in an increase in the mortality rates especially when the ME and protein content were formulated to lower than 3000 Kcal/kg and 21.0 %, for starter feeds and 3100 Kcal/kg and 19.0 % for grower feeds, respectively.

Conclusion

Poultry fed diets using Soon Soon High Efficiency soybean meal could withstand disease challenges better resulting in lower mortality rates, better bodyweight gains and feed conversion efficiencies. Reducing feed nutrient densities in the face of disease challenge also resulted in higher mortalities and poorer performance in terms of FCRs and bodyweight gains.

Recommendations

In commercial broiler production, it is impossible to achieve a disease free status. We would advise our customers to use the best quality raw materials such as Soon Soon High Efficiency soybean meal in their feeds while at the same time increasing slightly their feed nutrient densities to improve the overall health status of their flocks.