Photos by ILRI/Folusho Onifade

Table 2. Performance characteristics of the experimental birds fed with diets containing HQCP.

Parameter	T1	T2	T3	T4	T5	SEM
Initial body Weight (kg/bird)	0.57	0.57	0.63	0.56	0.56	0
Final body Weight (kg/bird)	1.74^{ab}	2.08^{a}	1.80^{ab}	1.94^{a}	1.55^{b}	1.01
Weight gain(kg/bird)	1.16^{ab}	1.46^{a}	1.17^{ab}	1.38^{a}	0.99^{b}	0.1
Feed intake (kg/bird)	2.36^{a}	2.36^{a}	2.40^{a}	2.40^{a}	2.17^{b}	0
Feed conversion ratio (FCR)	2.06^{ab}	1.63^{b}	2.05^{ab}	1.78^{ab}	2.24^{a}	0.08
Feed Efficiency ratio (FER)	0.49^{ab}	0.61^{a}	0.49^{ab}	0.58^{ab}	0.45^{b}	0
Mortality (%)	0	0	0	0	0	0

T1, T2, T3, T4 and T5 are as defined in the above table.

Mean with different superscript on the same row are significantly different (p<0.05) SEM= standard error of mean.

Table 3. Economics of feeding broilers with diets containing HQCP.

Parameter	Treatments					SEM
	1	2	3	4	5	
Total feed intake, kg	2.36^{a}	2.36^{a}	2.40^{a}	2.40^{a}	2.17^{b}	0.003
Total feed cost, $ /kg	0.8^{a}	0.79^{a}	0.8^{a}	0.8^{a}	0.72^{b}	0.02
Total weight gain, kg	1.11^{ab}	1.42^{a}	1.13^{ab}	1.33^{a}	0.95^{b}	0.029
Feed cost per kg gain, $	0.96^{ab}	0.74^{b}	0.93^{ab}	0.80^{ab}	1.05^{a}	0.07
Cost savings, $	-	0.22	0.02	0.15	-0.09	-

a,b= means in the same row with different superscripts differ significantly (p<0.05), SEM= Standard Error of mean.

Our innovative approach

Objective: To evaluate the effect of isonitrogenous and isocaloric diets containing varying levels of high-quality cassava peel (HQCP) fine mash on broilers' performance, carcass characteristics, and cost benefit.

Approach: A feeding trial was carried out using four hundred (400) 21-day-old Arbor Acres broiler chicks weighing 570 – 630 g (live weight). The chicks were randomly allocated to five dietary treatments (T); (T1- 0 kg/t of HQCP, T2- 150 kg/t of HQCP, T3- 200 kg/t of HQCP, T4- 250 kg/t of HQCP and T5- 300 kg/t of HQCP) for 21 days in a completely randomized design.

Growth performance, carcass characteristics and cost benefit of feeding broilers with diets containing high-quality cassava peel (HQCP)

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- Productivity and profitability of poultry can be increased greatly with integrated innovation/technology options involving feed
- The use of locally available alternative feed resources that can replace maize at a lower cost without any deleterious impact on the production and performance of the broiler chicken through promotion of utilization of the agri-produce waste materials for livestock feed is key in this regard
- Utilization of high-quality cassava peel (HQCP) in broiler feed can significantly mitigate the effect of the high cost of feed in the poultry industry
- HQCP can efficiently replace maize in the diet of broiler chicken and thereby increase the profitability
- Production of HQCP can remarkably create a profitable value chain link in the livestock industry, especially among the youth and women.

Significance and scaling potential

- Production of broiler chicken with diets containing HQCP is possible at 42 days with average live weight ranging from 1.55- 2.08kg.
- The inclusion of HQCP in the diets positively influenced the percentages of shank, and thigh while saving cost of production and without compromising the animal performance.
- Production of broiler diet with the inclusion of about 150 kg of HQCP in a ton of broiler finisher feed, could be a better energy replacement for maize for increasing productivity in broiler production.

Outcomes

- The results showed significant (P<0.05) differences in final live weight, feed conversion ratio/feed efficiency ratio (FCR/FER), dressing percentage, total feed cost, and feed cost per weight gain across the treatments. T2 and T4 produced birds with the highest live weights of 2.08 and 1.98 kg, respectively.
- The dressing percentage ranged from 63.2% (T5) - 70.0% (T1). T5 had the lowest total feed cost (0.97 $/kg) while T2 had the lowest feed cost per body weight gain ($0.74), and best cost savings ($0.22). It was concluded that replacement of maize with 150 kg/t high quality cassava peel (HQCP) in broiler finisher diets improved production performance and save cost.

Table 2. Chemical composition of the experimental diets.

Diets	Nutritional profile (%)						
	Dry matter	Crude Protein	Crude Fibre	Total Ash	Ether Extract	NFE	ME (kcal/kg)
T1	89.57	19.03	5.13	8.47	7.29	49.65	3,024.95
T2	89.28	19.05	5.11	8.55	7.58	48.99	3,025.94
T3	89.26	19	5.19	8.09	7.93	49.05	3,054.95
T4	89.51	19.01	6	7.71	7.76	49.03	3,040.68
T5	89.57	19.02	5.63	7.14	7.24	50.54	3,052.10
SEM	0.07	0.01	0.18	0.26	0.13	0.3	6.3
HQCP	95.7	4.9	6.49	1.96	0.73	nd	2,987.57

T1= (control- no HQCP), T2 = (HQCP 150 kg/ton), T3 = (HQCP = 200 kg/ton), T4= (HQCP = 250 kg/ton), T 5 = (HQCP= 300 kg/ton), NFE=Nitrogen Free Extract, ME=Metabolizable Energy, nd=not determined

Next steps

Evaluation of HQCP on other poultry species including layers

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