CARCASS CHARACTERISTICS OF TWO STRAINS OF BROILER CHICKENS FED DIETS CONTAINING VARYING LEVELS OF CASSAVA GRITS

Presentation at

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OUTLINE

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INTRODUCTION

- Poultry meat is one of the most consumed across the globe for the high quality carcass
- High demand for high quality cut parts such as breast has greatly driven breeding and marketing strategies to meet such demands (Ojedapo *et al*., 2008)
- Carcass yield is a measure of performance and an indicator of biological productivity and economic profitability
- To producer and processor as a measure of profitability and to consumer as a measure of value for expenditure

INTRODUCTION.....

- Composition of carcass is influenced by a number of factors like age of animal, physiological state, animal species, management/environment and nutrition profile.
- Carcass traits are dependent on dietary quality (component) in livestock and poultry production
- High fibre level in the diet reduces the fatness of the carcass.
- Dietary protein content affects quality of edible meat and fat content in addition to the weight gain and feed efficiency, (Poultry World, 2017).
- Energy component of diet is also a factor that determines meat quality

JUSTIFICATION

- Energy cost in poultry production
- Conventional energy source
- Competition
- Attendant fluctuations in supply and high cost
- Alternatives
- Cassava advantage

OBJECTIVES

Main objective

- To determine the carcass characteristics of two strains of broiler chickens fed diets with varying levels of cassava grits as energy source

The specific objectives were to determine:

- Effect of strain on carcass characteristics of broiler chickens using Arbor Acre plus and Marshal strains
- Effect of replacement of dietary maize with cassava grits on carcass characteristics of broiler chickens

MATERIALS AND METHOD

Experimental site and location

Test ingredient and experimental diets

Birds and management

Data collection and analysis

Table 1: Broiler finisher diets containing varying levels of cassava grits as energy source

Ingredients (kg)	Replacement Levels			
	0%	20%	40%	60%
Maize	550	440	330	220
Groundnut cake	200	200	200	200
Soybean meal	88	88	88	88
Cassava grits	0	110	220	330
Palm kernel cake	67	67	67	67
Wheat offal	38	38	38	38
Bone meal	25	25	25	25
Oyster shell	25	25	25	25
Lysine	1	1	1	1
Methionine	1	1	1	1
Premix	2.5	2.5	2.5	2.5
Salt	2.5	2.5	2.5	2.5
Total	1000	1000	1000	1000

RESULTS AND DISCUSSION

Table: 2 Analysed composition of experimental diets

Component	Replacement Levels			
	0%	20%	40%	60%
Metabolizable Energy (kcal/kg)	2916.40	2890.55	2864.71	2838.86
Crude protein (%)	19.74	19.41	19.28	18.75
Ether extract (%)	3.67	3.67	3.68	3.68
Crude fibre (%)	4.17	4.87	5.29	4.25

Table 3: Main effects of strain on killing - out weights of broiler chickens fed diets containing varying levels of cassava grits

Parameters	Strain of broiler		SEM
	Arbor Acre Plus	Marshal	
Live weight (g)	1944.93	1951.67	43.63
Bled weight (%)	95.93	94.63	0.40
Plucked Weight (%)	90.42[a]	89.02[b]	0.35
Eviscerated weight (%)	75.64	75.69	0.61
Dressed weight (%)	66.53	65.09	0.54

Table 4: Main effects of diets on killing - out weights of broiler chickens fed diets containing varying levels of cassava grits

Parameters	Replacement Level				SEM
	0%	20%	40%	60%	
Live weight (g)	2103.75^{a}	2056.25^{ab}	1885.42^{bc}	1747.78^{c}	43.63
Bled weight (%)	95.91^{a}	93.39^{b}	95.61^{ab}	95.14^{ab}	0.40
Plucked Weight (%)	90.28	88.89	90.42	89.29	0.35
Eviscerated weight (%)	76.62	75.14	76.52	74.36	0.61
Dressed weight (%)	67.53	65.45	65.60	64.66	0.54

^{abc}: Means along the same row with different superscripts are significantly different ($p<0.05$)

Table 5: Interactive effect of broiler strain and diets on killing - out weights of broiler chickens fed diets containing varying levels of cassava grits

Parameters	Arbor Acre Plus				Marshal				SEM
	0%	20%	40%	60%	0%	20%	40%	60%	
Live weight (g)	2093.30^{ab}	2095.00^{ab}	1835.80^{ab}	1755.60^{ab}	2114.20^{a}	2017.50^{ab}	1935.00^{ab}	1740.00^{b}	43.63
Bled weight (%)	95.58^{ab}	94.29^{ab}	96.16^{ab}	95.52^{ab}	96.24^{a}	92.49^{b}	95.05^{ab}	94.76^{ab}	0.40
Plucked weight (%)	90.32^{a}	90.49^{a}	90.89^{a}	89.97^{ab}	90.24^{a}	87.29^{b}	89.95^{ab}	88.61^{ab}	0.35
Eviscerated weight (%)	76.67	76.18	75.04	74.66	76.57	74.11	78.01	74.07	0.61
Dressed Weight (%)	70.09^{a}	65.70^{ab}	64.81^{b}	65.54^{b}	64.96^{b}	65.21^{b}	66.40^{ab}	63.78^{b}	0.54

$^{abc:}$ Means along the same row with different superscripts are significantly different ($p<0.05$)

Table 6: Main effects of strains on cut - parts of broiler chickens fed diets containing varying levels of cassava grits

Parameters	Strains of broiler		SEM
	Arbor Acre Plus	Marshal	
Breast (%)	20.21	19.18	0.29
Back (%)	13.67	14.51	0.31
Wings (%)	8.67	8.52	0.07
Neck (%)	5.06	4.81	0.07
Head (%)	2.54	2.52	0.04
Thigh (%)	11.77	11.16	0.18
Drumstick (%)	9.94	9.84	0.08
Shank (%)	4.24	4.15	0.07

Table 7: Main effects of cassava as replacement for maize on cut parts of broiler chickens fed diets containing varying levels of cassava grits

Parameters	Cassava replacement level				SEM
	0%	20%	40%	60%	
Breast (%)	19.38	20.14	20.14	19.12	0.29
Back (%)	14.68	14.63	13.01	14.06	0.31
Wings (%)	8.60	8.64	8.57	8.62	0.07
Neck (%)	5.14	4.97	4.74	4.90	0.07
Head (%)	2.53^{a}	2.31^{b}	2.65^{a}	2.63^{a}	0.04
Thigh (%)	11.86	11.62	11.13	11.26	0.18
Drumstick (%)	10.08	9.64	9.94	9.91	0.08
Shank (%)	4.26^{ab}	3.90^{b}	4.26^{ab}	4.36^{a}	0.07

ab: Means along the same row with different superscripts are significantly different ($p<0.05$)

Cassava 2017 TECH

Table 8: Interactive effect of broiler strain and diets on cut - parts of broiler chickens fed diets containing varying levels of cassava grits

Parameters	AAP				Marshal				SEM
	0%	20%	40%	60%	0%	20%	40%	60%	
Breast (%)	19.97	20.96	20.04	19.85	18.79	19.32	20.23	18.39	0.29
Back (%)	14.38^{ab}	13.32^{ab}	12.57^{b}	14.41^{ab}	14.97^{ab}	15.93^{a}	13.45^{ab}	13.70^{ab}	0.31
Thigh (%)	12.27	11.89	11.60	11.35	11.45	11.36	10.66	11.18	0.18
Drumstick (%)	9.95	9.83	10.07	9.92	10.20	9.45	9.81	9.90	0.08
Wings (%)	8.68^{abc}	8.73^{abc}	8.34^{bc}	9.02^{a}	8.53^{abc}	8.55^{abc}	8.80^{ab}	8.22^{c}	0.07
Neck (%)	5.26	5.21	4.81	4.97	5.02	4.72	4.66	4.83	0.07
Head (%)	2.57^{a}	2.26^{c}	2.76^{a}	2.58^{ab}	2.48^{abc}	2.36^{bc}	2.55^{ab}	2.67^{a}	0.04
Shank (%)	4.24	4.00	4.30	4.43	4.29	3.81	4.21	4.30	0.07

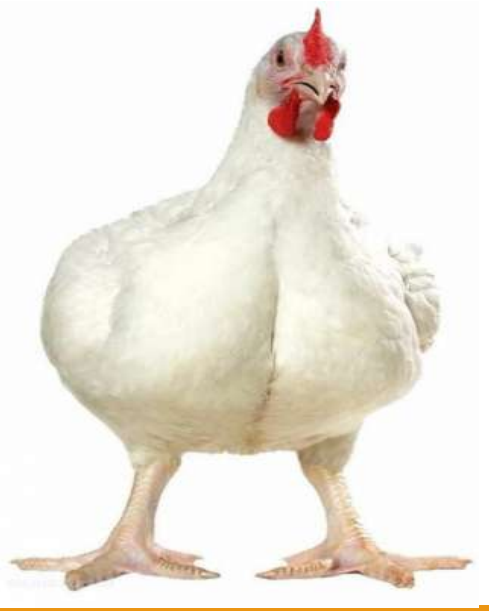
$^{abc:}$ Means along the same row with different superscripts are significantly different ($p<0.05$)

CONCLUSION

- Strain of broiler chicken had no influence on dressed weight and choice cuts (breast, thigh and drumstick) of the chickens.
- Live weight of the chickens reduced with increasing level of cassava grits in the diets.
- The dressed weight and choice cuts were not influenced by cassava grits.
- Broiler chickens of both strains on diet with 40% CG gave optimal live weight, dressed weight and relative weights of choice cuts.

RECOMMENDATION

When replacing maize with cassava grits in diets of broiler chickens it is recommended that it should not exceed 40%



Thank you