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Effect of Three Plant Extract on Growth Performance, and Sensory Properties of Broiler Birds

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INTRODUCTION

The use of synthetically-produced substances especially antibiotic growth promoters has been found to have objectionable side-effects (Makanjuola *et al.*, 2014)

The use of medicinal plant either alone or in group (combination) as possible therapeutic measures has become a subject of active scientific investigation (Oyewole, 2012).

Medicinal plants enhance natural resistance to infection due to the presence of bioactive phytochemicals or phyto-nutrients.

MATERIALS AND METHODS

- ◆Experiment done at Ebonyi State University, Abakaliki, Nigeria
- ◆Mango, Guava and Pawpaw leaves extract were used at same levels of 100mls levels
- ◆500g each of mango, guava and pawpaw leaves were squeezed in a liter of water and sieved
- ◆Growth and Sensory parameters were evaluated

RESULTS

Table 1: Growth Performance Characteristics

Parameters	T ¹ (0ml) Control	T ² (100ml) Mango	T3 (100ml) Pawpaw	T4 (100ml) Guava	SEM
Initial Body Weight (g)	186.28	185.30	187.20	183.07	2.68
Final Body Weight (g)	2097.57 ^c	2400.33	2623.00 ^a	2231.67 ^b	10.35
Body Weight Gain (g)	1911.2 ^b	2212.4 ^a	2438.3 ^a	2048.6 ^b	14.28
AV.Daily Weight Gain	34.14 ^c	36.13 ^c	39.96 ^b	42.36 ^a	0.26
Total Feed Intake (g)	5600.00 ^c	6153.5 ^b	5443.3 ^c	7166.67 ^a	172.8
Av.DailyFeed Intake (g)	99.99 ^c	97.17 ^b	109.89 ^b	127.97	3.08
Total water intake (ml)	8400.20	8164.99	9230.34	10750.55	205
Av.Dailywaterintake(ml)	150.50	145.81	164.82	191.96	11.40
Feed Conversion Ratio	2.93 ^b	2.56 ^b	2.07 ^c	3.21 ^a	0.42
Mortality Rate (%)	28.0 ^a	14.20 ^b	0.00 ^c	9.50 ^b	0.15

^{a-c} Means in the same row with different superscripts are significantly different (p<0.05).

DISCUSSION

- . The final body weight and body weight gain were significantly (p<0.05) higher on groups administered pawpaw leaves followed by groups on mango and guava respectively
- . Feed conversion ratio was also significantly (p<0.05) influenced where T₃(pawpaw) had the best feed utilization.
- . Zero mortality was recorded on T₃

RESULTS

Table 2: Sensory Evaluation

Parameters	T ¹ (0ml) Control	T ² (100ml) Mango	T3(100ml) Pawpaw	T4(100ml) Guava	SEM
Appearance	7.70	6.80	7.00	6.00	1.02
Colour	8.10	7.20	7.30	7.00	0.57
Texture	8.87 ^a	6.87 ^c	8.12 ^{ab}	6.50 ^{cd}	0.54
Juiciness	3.60	3.90	3.40	3.90	0.48
Tenderness	5.85 ^a	4.00 ^b	3.20 ^c	5.60 ^a	0.23
Taste	4.20 ^a	3.00 ^c	4.00 ^{ab}	2.30 ^d	0.26
Flavour	4.10	3.70	3.89	3.20	1.08
Acceptability	2.30	2.25	2.50	1.50	0.62

^{a-c} Means in the same row with different superscripts are significantly different (p<0.05).

DISCUSSION

- ◆The meat tenderness were higher on the control groups and guava compared to other treatment groups
- ◆Control groups and pawpaw group had better texture and taste compared to other groups.
- ◆There were no effect on the colour, appearance and overall acceptability of the meat.

CONCLUSION

- . Among the three plant extract used for this study, groups on pawpaw had the best weight gain with low feed conversion ratio.
- . The zero mortality rate observed on pawpaw groups showed that the anti-oxidative and antibacterial properties of pawpaw extract is more effective in boosting the immunity of the birds.

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FIG. 1: Sample of Pawpaw Leaf



FIG. 2: Sample of Guava Leaf