

Effect Of Supplementing Graded Dose Of Molasses Through Drinking Water On Feed Intake And Weight Gain Of Ducks

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Abstract: *The experiment was conducted at the minilivestock unit of Audu Bako College of Agriculture Danbatta, Kano State, Nigeria. The experiment was done to determine the effect of molasses on feed intake and weight gain of ducks. Six ducks were purchased from local market at Danbatta local Government of Kano State Nigeria. The ducks were divided into three (3) treatment of which each was made up of one (1) male and One (1) female. Treatment A (control) was given water free of molasses while treatments B and C were given 2 and 3ml of molasses respectively. Daily feed intake and weight gain were recorded for eleven days and was expressed in bar chart.*

I. INTRODUCTION

The word duck has become a term used to describe the Anatinae, a branch of Anatidae. They have smaller size, shorter necks and legs, flatter bodies and broader bills. Male ducks are known as drakes while the females are called ducks or duck hen. The young immature ducks are called ducklings. Most of the today ducks appeared to be descendant of wild Mallard (Carmen, 2007). Domestic ducks are raised throughout the tropics, but they are most numerous in region of high rainfall, in riverine areas, in deltas and in coastal district (Paynee, 1994).

FAO (1986) estimated that there were a total of one hundred and sixty nine million (169 000 000) ducks in the world in 1985, 40% being raised in rice growing areas of Southeast Asia (Paynee, 2007). The total number of ducks in the world is, however, small compare with the total number of fowls (Paynee, 2007). It could be assumed that it is their climatic requirement which restrict their suitability for domestic use, together with the fact that they eat more feeds than fowls and that some people do not find either their eggs or meat as palatable as those of fowls (Paynee, 2007). The market for

table ducks is on the increase but eggs, however, is declining as strong flavor of the eggs remain unattractive to the consumer (Sainsbury *et al.*, 1992 and Jadhav, *et al.*, 2004). Ducks excel most other domestic poultry in their resistance to stress and they apparently exhibit a tolerance to a majority of poultry diseases (Carmen *et al.*, 2007 and Paynee, 1994).

Molasses are concentrated water solutions of sugars, hemicelluloses and minerals usually obtained as a by-product of various manufacturing operations of the juices or extracts of some selected plant materials. There are many sources of molasses among which are:

- ✓ Cane/black strap molasses is a by-product of sugar industry from which a maximum of sugar has been extracted. Cane molasses contained 3% protein, 10% ash, poor in phosphorus but rich in niacin and pantothenic acid.
- ✓ Beet molasses is a by-product of manufacture of beet. In making sugar from sugar beets, the beets are shredded into cassettes and the juice is extracted. In this process two (2) valuable by-products are obtained (sugar beets and beet pulp). Protein values are higher than cane molasses (6-8%).

- ✓ Citrus molasses is obtained from peels, rag and seeds when gape fruits are processed for a juice or section. The liquid obtained from this waste is rich in sugar (50-70%) which is dark-brown to almost black and has bitter taste. It has 14% protein content.
- ✓ Wood molasses is obtained from wood when treated with dilute acid at high pressure. The molasses obtained has a bitter taste.

Molasses is usually used as source of energy, appetizer, to reduced dustiness in feed, as a binder for pelleting, to stimulate rumen microbial activity, to provide a carrier for N-P-N and vitamin in liquid supplements and to provide trace elements (Berrnerjee, 2012).

II. EXPERIMENTAL SITE

The experiment was conducted in the Minilivestock Unit of Department of Animal Health and Husbandry, Audu Bako College of Agriculture Danbatta, Kano State. The college is located along Danbatta/Daura road in Makoda Local Government Kano State. Kano State is located in north western Nigeria. The State, borders Katsina State to the north-west, Jigawa State to the north-east, Bauchi State to the south east, and Kaduna State to the south-west. The state lies between longitudes $9^{\circ} 30^1$ and $8^{\circ} 42^1$ east, in the Sudan savannah zone of Nigeria. The state is characterized by a wet season (May-October), and a dry season (Nov-April). The annual rainfall and temperature ranges from 787-960mm and 21°C - 46°C respectively (Muhammad and Akpan, 2008).

III. EXPERIMENTAL PROCEDURE

Six ducks (three males and three females) were purchased from local market at Danbatta Local Government, Kano State, Nigeria. The ducks were divided into three groups (TA, TB and TC) each with one male and female and were kept at Minilivestock section for ten (10) days and were given routine management operations. Treatment A was control (drinking water free of molasses) while treatment B and C were given 2 and 3 mls of molasses per liter of their drinking water. Initial feed intake before commencement of the experiment were taken daily for ten (10) days. Daily feed intake and weight gain of the experimental group during the treatment were taken daily in the morning (with weighing scale) for eleven days. Data collected were tabulated in the table below and was presented in the figure below using bar chart.

IV. RESULT AND DISCUSSION

Table one (1) daily feed intake of treatments (B and C) and control (A) which were given two (2)ml and three (3)ml of molasses through drinking water four eleven (11) days and control (A) given water free of molasses. And table two (2) shows changed in weight of the treatments and the control group. There was variation in the feed intake and weight gain in treatment A, while in treatment B there was increased in feed intake in the first three days which then decreased and

there was increased in weight gain for the treatment, but treatment C there was increased in feed intake and subsequently increased in weight gain, this may occur because of increased in metabolic rate facilitated by the treatment (Daiyabu *et al.*, 2017). There was more feed intake and weight gain in treatment C than that of treatments A and B as is shown in the table below and in the figures that followed.

| DAYS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| FEED INTAKE (kg) | | | | | | | | | | | |
| A | 1.1 | 1.0 | 1.0 | 1.0 | 1.9 | 1.2 | 1.1 | 1.6 | 1.4 | 1.6 | 1.5 |
| B | 1.6 | 2.0 | 3.1 | 1.2 | 2.1 | 2.3 | 1.2 | 2.1 | 1.2 | 1.4 | 1.3 |
| C | 1.3 | 2.0 | 2.1 | 1.2 | 2.1 | 2.1 | 1.2 | 2.1 | 2.2 | 2.2 | 2.3 |

Table 1: shows daily feed intake of treatment A,B and C (TA,TB and TC) treated with zero, 2ml and 3ml of molasses in their drinking water respectively

| DAYS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-------------------------|-----|------|------|------|------|------|------|------|------|------|------|
| FEED INTAKE (kg) | | | | | | | | | | | |
| A | 1.5 | 1.45 | 1.6 | 1.5 | 1.65 | 1.6 | 1.7 | 1.7 | 1.75 | 1.75 | 1.65 |
| B | 1.7 | 1.8 | 1.75 | 1.9 | 1.8 | 1.75 | 1.95 | 1.9 | 1.8 | 1.9 | 2.0 |
| C | 1.5 | 1.55 | 1.6 | 1.55 | 1.55 | 1.5 | 1.55 | 1.65 | 1.7 | 1.7 | 1.75 |

Table 2: shows daily weight gain of treatments A (control), B (2ml molasses and C 3ml of molasses) for eleven days

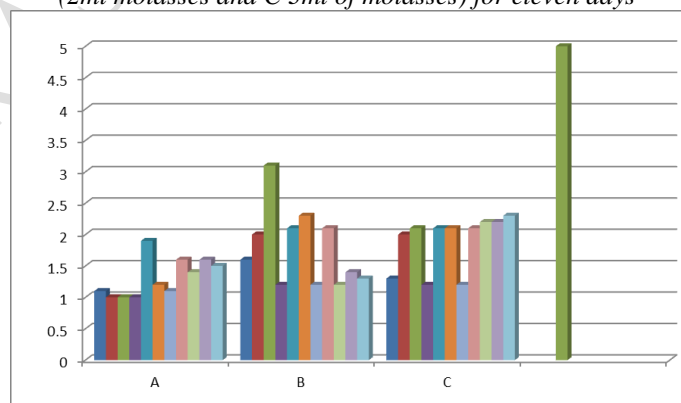


Figure 1: shows a bar chart of daily feed intake of ducks for eleven days

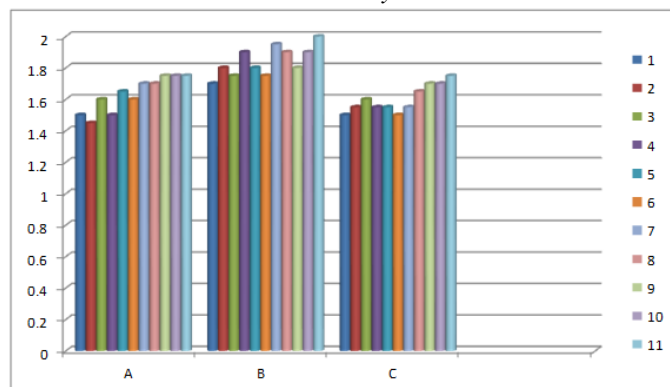


Figure 2: Shows a bar chart of weight gain of ducks fed different level of molasses in their drinking water

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