USE OF SOME BIO-FEED ADDITIVES TO IMPROVE GROWTH AND REPRODUCTIVE PERFORMANCE IN BUFFALO HEIFERS

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B.Sc. Agric. Sc. (Animal Production), Ain Shams University, 1999

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ABSTRACT

Saffa Ezzat Hashem. Use of some Bio-Feed Additives to Improve Growth and Reproductive Performance in Bbuffalo Heifers. Unpublished M. Sc.Thesis, Department of Animal Production, Faculty of Agriculture, Ain Shams University, 2009.

Nineteen buffalo heifers were divided into four groups, the first group (G1) included five animals with average body weight 200-250 kg and served as control group, the second group (G2) included four animals with average body weight 200-250 kg, the third group (G3) included five animals with average body weight 250-300 kg, and the fourth group (G4) included five animals with average body weight 300-350 kg. The G2, G3 and G4 received the feeds according to the farm regime (G1) plus feed additive Tri-Mic (microbial flora) as 15 g/h/d for one month. Feed intake as dry matter (DM), total digestible nutrients (TDN), crude protein (CP) and digestible crude protein (DCP) were significantly ($P<0.05$) increased for G3 and G4 as compared to G1 and G2 during pre-puberty and post-puberty periods, due to increased body weight but not to feed additive since G1 and G2 feed intakes were not significantly different.

The average daily gain was significantly ($P<0.05$) higher in the treated groups than in the control group during pre- and post-puberty periods. The feed efficiency for different nutrients was higher ($P<0.05$) in G3 as compared to the other groups during pre-puberty period. However, it was slightly lower in G3 and G4 than the control group during the post-puberty period. The hepatic transaminases concentrations were higher ($P<0.05$) in G2 and

lower in G4 as compared to the control group during pre-puberty period. Moreover, urea and creatinine levels were lower ($P<0.05$) in G2 and G3 as compared to the control group during pre- and post-puberty periods.

Age at puberty was lower in G3 and G4 than in G1 and G2. The mean length of days open was 96, 70 and 94 days for G2, G3 and G4, respectively. While number of services/conception averaged 1, 1.75 and 1.25 for the respective groups. Average calf birth weight was proportional to the dam weight at calving.

Average daily milk yield was lower ($P<0.05$) in G3 than in G2 and G4. Moreover, the percentages of total protein, lactose, total solids, solids non-fat and ash were significantly ($P<0.05$) different among groups. However, insignificant differences were noticed in yields of different milk contents among groups.

Age and weight at puberty and first conception in buffalo heifers were found to be significantly correlated with some body measurements. In summary, body weight of buffalo heifers may considerably affect the physiological response of animals to the Tri-Mic feed supplement.

Key words : Tri-Mic, Nutrients digestibility, Growth performance, Puberty, Milk yield, Buffalo.

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LIST OF ABBREVIATIONS

A	Albumine
ADF	Acid deterbent fiber
ADG	Average daily gain
AIA	Acid Insoluble Ash
ALT	Alanine aminotransferase
AST	Aspartate aminotransferase
BCC	Body condition score
BW	Body weight
C	Concentrate
CF	Crude fiber
CP	Crude protein
d	Day
DCP	Digestible crude protein
DFM	Direct –fed microbial
dl	Deciliter
DM	Dry matter
DMI	Dry matter intake
EE	Ether extract
FCM	Fat corrected milk
FDA	Food and Drug Aministration
Fig	Figurre
G	Globulin
g	Gram
GRAS	Generally recoginized as safe

H	Head
IU	International unit
Kg	Kilogram
L	Liter
MBS	Metabolic body size
mg	Milligram
ml	Milliliter
NDF	Neutral-detergent fiber
NFE	Nitrogen free extract
OM	Organic matter
PUN	Plasma urea nitrogin
TDN	Total digestible nutrients
TDNI	Total digestible nutrients intake
TMR	Total Mixed ration
US	United State
YC	Yeast culture

LIST OF APPENDIX TABLES

Table (1) : The chemical composition (%) of ration ingredients

Item	DM	On DM basis						*TDN%	*DP%
		Ash	OM	CF	CP	EE	NFE		
Berseem	16.55	10.61	89.39	26.49	18.2	2.17	42.53	11.97	2
Darawa	18.80	9.29	90.71	38.04	10.70	1.59	40.38	14	2
Rice straw	93.61	21.98	78.02	36.41	3.51	1.70	36.40	40	0
CFM	91.59	8.82	91.18	9.53	15.87	2.81	62.97	63.7	9.8

***** According to **Abou- Raya (1967).**

DM (dry matter), OM (organic matter), CF (crude fiber), CP (crude protein), EE (ether extract), NFE (nitrogen free extract), TDN (total digestible nutrients), DP (digestible protein).