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FRESHWATER REED SILAGE AS NON- CONVENTIONAL FORAGE IN FEEDING LACTATING BUFFALOES AND GROWING LAMBS

By

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THESIS

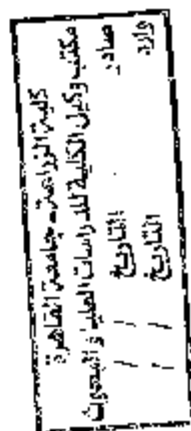
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**FRESHWATER REED SILAGE AS NON-
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ABSTRACT

This study was divided into three experiments: first experiment was conducted to evaluate reed plants as silage ensiled using different kinds of additives (molasses, formic acid and lactic acid bacteria) compared with corn silage and clover hay. Voluntary intake and direct digestibility trials were carried out using four Rhamani Rams with average body weight of 42 Kg.

Second experiment; using swing over method, five multiparous lactating Egyptian buffaloes, after 8 weeks of calving (averaged 620 kg live body weight) were used to test different treatments of freshwater reed silages vs. corn silage on the efficiency of milk production and animal performance. Third experiment: twenty Barki lambs averaged (33 kg) body weight; 9 months old were divided into 4 groups for 90 days trial to study the effects of reed silages on growth performance of Barki lambs compared with clover hay.

In the three experiments reed silages were prepared by using: molasses (2% of DM), molasses plus 2L formic acid/ton DM and molasses plus lactic acid bacteria (*Lactobacillus acidophilus*) (1×10^6 cfu/g).

In experiment I: reed silage ensiled with formic acid recorded the lowest significant ($P < 0.05$) digestibility coefficients of DM and OM than other reed silages (RSM and RSM1). Results indicated significant lower TDN ($P < 0.05$) in RSMF than other forages.

In experiment II: the lowest digestibilities of DM, OM and CP ($P < 0.05$) were obtained with reed silage prepared with lactic acid bacteria compared with the other silages. The CF and Hemi-cellulose digestibility showed no significant differences among different treatments, but they were lower than those obtained with corn silage ($P < 0.05$).

Actual milk yield and 7% FCM did not significantly differed among treatments ($P > 0.05$). However, milk fat content was significantly ($P < 0.05$) lower in only molasses treated reed silage, compared with other treatments. No significant differences ($P < 0.05$) were noticed for milk total solids and solids not fat among treatments. While, formic acid silage showed the lowest values in fat percentage compared with other treatments ($P < 0.05$). Normal ranges for the blood parameters were observed with no significant differences between corn silage ration and reed silages rations.

Experiment III: RSM ration (R1) was highly significant ($P < 0.05$) in crude protein digestibility (82.40 %) with insignificant difference with R2 and R3, whereas control ration (C) showed the lowest value (76.44%). Total gain and daily gain did not show significant differences among experimental groups being 16.62, 15.58, 14.89 and 16.27 kg and 184, 173, 165 and 180 g / d in C, R1, R2 and R3 rations respectively.

The previous results showed that freshwater reed silages with molasses, formic and lactic acid bacteria could be considered a promising resource as un-conventional forage in feeding lactating buffaloes and growing lambs without any adverse effect on animals performance.

Keywords: Reed grass - silage - nutrients digestibility - milk production - buffaloes and growing lambs.

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LIST OF ABBREVIATIONS

A.O.A.C	: Association of Official Agriculture Chemists
ADF	: Acid detergent fiber
ADL	: Acid detergent lignin
B.W	: Body weight
C	: Control ration
C.F	: Cited from
CF	: Crude fiber
CFD	: Crude fiber digestibility
CH	: Clover hay
CP	: Crude protein
CPD	: Crude protein digestibility
d	: Day
DCP	: Digestible crude protein
DE	: Digestible energy
dl	: Deciliter
DM	: Dry matter
DMD	: Dry matter digestibility
DMI	: Dry matter intake
EE	: Ether extract
FCM	: Fat corrected milk
g	: Gram
GE	: Gross energy
h	: Head
hrs.	: Hours
Kcal	: Kilocalorie
Kg	: Kilogram
L	: Liter
LE	: 1 pound Egyptian currency = 100 piasters

mg	: Milligram
ml	: Milliliter
N	: Nitrogen
NDF	: Neutral detergent fiber
NFE	: Nitrogen free extract
NFED	: Nitrogen free extract digestibility
NH₃	: Ammonia
NH₃-N	: Ammonia nitrogen
NRC	: National Research Council
OM	: Organic matter
OMD	: Organic matter digestibility
pH	: Minus log of hydrogen ion potential
RSM	: Reed silage ensiled with molasses
RSMF	: Reed silage ensiled with molasses + formic acid
RSML	: Reed silage ensiled with molasses + lactic acid bacteria
TDN	: Total digestible nutrients
TVFA's	: Total volatile fatty acids
VFA	: Volatile fatty acids
W	: Weight
WS	: Wheat straw

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