EFFECT OF USING NON-CONVENTIONAL FEEDS ON PRODUCTIVE PERFORMANCE OF SHEEP

By

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B. Sc. Agric. (Animal production), Ain Shams Univ., 1994
M. Sc. Agric. (Animal Nutrition), Ain Shams Univ., 2003

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Approval Sheet

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ABSTRACT

Ahmed Ragab Mohamed Khattab. Effect of Using Non-Conventional Feeds On Productive Performance Of Sheep. Unpublished Ph.D. Thesis, Department of Animal Production, Faculty of Agriculture, Ain Shams University, 2012.

This study aimed to replace the conventional rumainal ration energy source (yellow corn) by using non-conventional energy sources (date palm or sugar bet pulp). An experiment was conducted on 21 crossbred lambs (Finnish × Rahmani) in which the energy source in the concentrate ration was the yellow corn in T1 (the control), date palm in T2 and sugar beet pulp in T3. The effect of feeding untreated energy sources on performance of sheep was studied.

Results from metabolic trials indicated that all experimental rations had the same CP content but there were differences in CF and NFE. No significant differences were observed in total dry matter intake DMI (kg/ h/d) and crude protein intake CPI (g/h/d) among the different experimental rations. T1 had higher values ($P<0.05$) of DM, OM, CP and NFE digestibilities compared with T2 and T3.

Total digestible nutrients (TDN) and N-balance had higher values ($P<0.05$) for T1 (74.11% and 6.57g) and T2 (68.00% and 5.93g) than T3 (63.30% and 4.46g). Significant differences in rumen pH values among all rations was recorded, although the rumen pH was lower than 7.00 in all experimental groups. Total volatile fatty acids (TVFA's) had higher value ($P<0.05$) for T3 compared with other experimental rations, but T1 had the highest significant ($P<0.05$) for ruminal ammonia nitrogen concentration compared with the other treatments.

Comparisons between the different three experimental treatments for blood parameters, T1 recorded the highest value followed by T2 and then T3 which recorded the lowest value. Differences between treatments were not significant.

In feeding trial 21 lambs of 26.35±0.22 kg weights were divided into three similar groups included seven lambs in each. Total gain, average daily gain (ADG) and feed efficiency (kg gain/kg DMI) were significantly ($P<0.05$) higher for T1 followed by T2 and T3 orderly. Hot carcass cuts, edible offal's and the average weights of 3 ribs (9^{th} , 10^{th} and 11^{th}) were significantly ($P<0.05$) higher for T1 followed by T2 and T3, respectively.

Total cellulolytic bacteria had higher significant difference value in R3 than other experimental rations. Number of *Cellulomonas, Bacillus, Acetobacter and Ruminococcus* were high in T3, while *Thermonospora* was the highest number in T2.

Key words : *yellow corn, date palm, sugar beet pulp , feed intake, energy sources, digestibility, rumen parameters, blood parameters, average daily gain, feed efficiency, carcass characteristics, cellulolytic bacteria.*

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List of Abbreviations

A.O.A.C	Association of Official Analytical Chemists
ADF	Acid detergent fiber
ADG	Average daily gain
A: G ratio	Albumin to globulin ratio
ARC	Agricultural Research Council
AST	Aspartate aminotransferase
ALT	Alanine aminotransferase
Bh	Berseem hay
CF	Crude fiber
CFM	Concentrate feed mixture
CM	Concentrate mixture
CP	Crude protein
d	Day
DCP	Digestible crude protein
DDP	Dried date pulp
DE	Digestible energy
DM	Dry matter
DDM	Digestible dry matter
DMI	Dry matter intake
DN	Digestible nitrogen
DOM	Digestible organic matter
DS	Date seed
DOMI	Digestible organic matter intake
EE	Ether extract
EM	Electronic microscope
FN	Fecal nitrogen
GOT	Glutamate oxaloacetate transaminase
GPT	Glutamate pyruvate transaminase
Hb	Hemoglobin blood