THE INFLUENCE OF DIFFERENT SUPPLEMENTAL NITROGEN SOURCES ON POOR QUALITY ROUGHAGE UTILIZATION BY THE RUMINANTS.

BY

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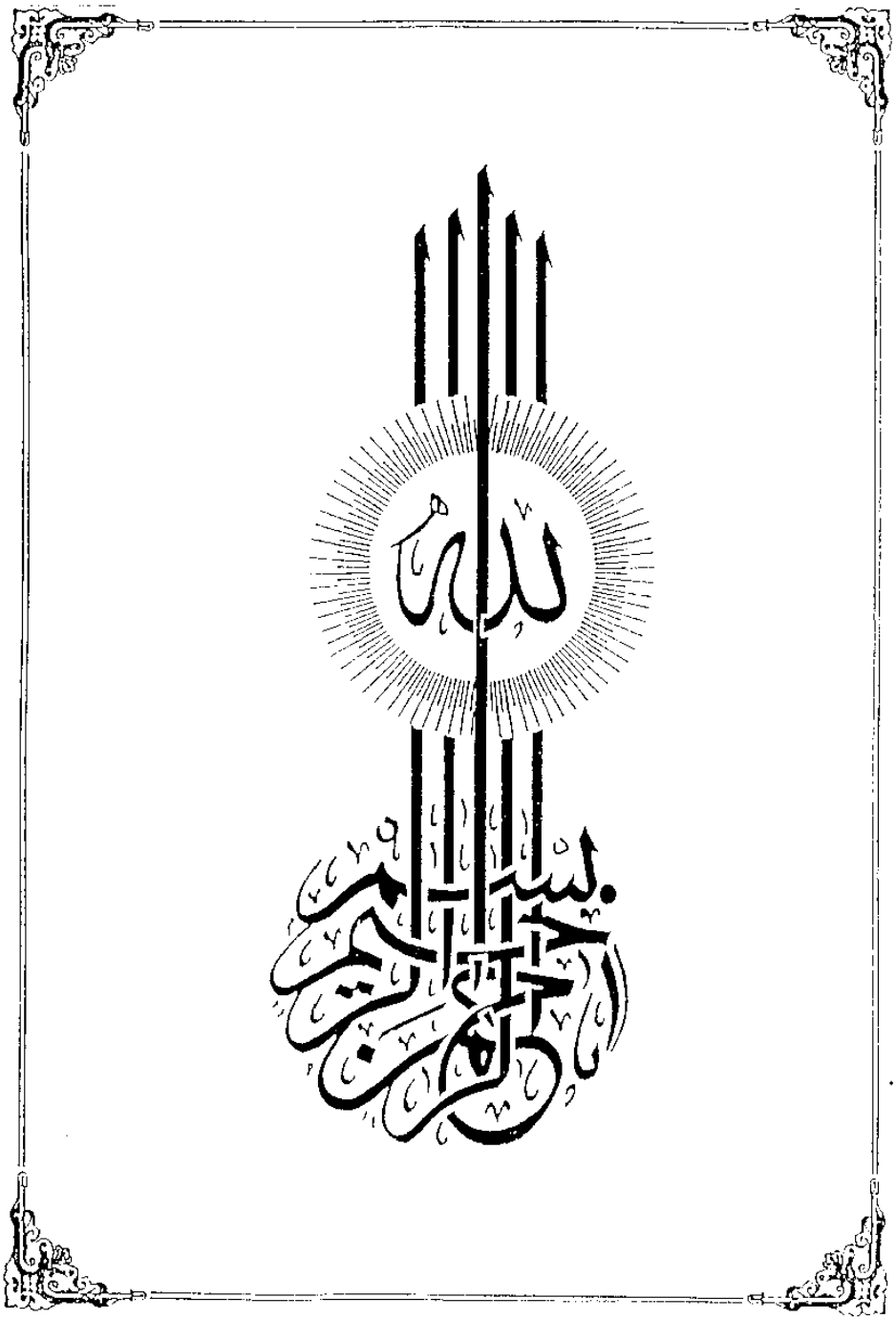

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List of Abbreviotions

DM	= Dry matter.
OM	= Organic matter.
CP	= Crude protein.
CF	= Crude Fiber.
IVDMD	= In vitro dry matter digestion.
IVOMD	= In vitro organic matter digestion.
IVCFD	= In vitro crude fiber digestion.
NAN	= NON ammonia nitrogen.
NPN	= NON protein nitrogen.
NH_3-N	= Ammonia.
Lw	= Live wieght.
$Kgw^{0.75}$	= Metabolic bady weight.
NS	= Not significant.
VS	= Versus.
SBM	= Soybean meal.
LSM	= Linseed meal.
FM	= Fishmeal.
LLM	= Leucaena leave meal.
CSM	= Cotton seed meal.
CA	= Casein.
U	= Urea.
S.O.N	= Source of nitrogen.
S.O.P	= Source of Protein.
S.O.V	= Source of variation.

Contents

List of Tables

List of Figures

Figure Page

List of Appendix

APPINDEX **Page**

THE INFLUENCE OF DIFFERENT SUPPLEMENTAL NITROGEN SOURCES ON POOR QUALITY ROUGHAGE UTILIZATION BY THE RUMINANTS.

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ABSTRACT

A series of experiments were conducted to compare the effects of different sources of protein supplements on ruminal fermentation characteristies and microbial growth .

The obtained the results indicated that:

1- In vitro digestibility was significantly ($P < 0.05$) improved with hay as a substrate when compared with wheat straw and rice straw because of the availability of nitrogen from different roughage sources was different.

2- Nitrogen supplementation from casein increased ($P < 0.05$) digestion of the roughages, but such a response was less likely with urea .

3- The values of IVDMD % , IVOMD % and IVCFD % were highest

($P < 0.05$) with the roughages supplemented with soybean meal as compared with the other sources of protein.

4- The digestion rate increased with increasing levels of protein supplementation, the increments in IVDMD % , IVOMD % and IVCFD% were significant ($P < 0.05$) for the low levels of supplementation in contrast to the non significant ($P>0.05$) higher levels.

5- When pure cellulose was used in lieu of and in a comparison with physical roughages most of the results turned out to be inagreement.

Introduction

In Egypt, Little cultivable land can be allocated to forage production because of the need to grow human food. So straws are produced during cereal grain production are used as the basal feed for a large proportion of the ruminants. Crop residues and mature tropical pasture grasses are classed as low quality roughages that have many negative properties such as reduced palatability, low digestible protein, mineral and vitamin contents. The improvement in the feeding value of straw obtained when treated with various methods.

These include physical and chemical treatments of ligno-cellulotic crop residues increases digestibility.
The success of any of these methods of treatment depends upon adequate nitrogen being available for rumen microorganisms.

The present research was concerned with improved degradation and fermentability of cell wall by rumen microorganism when the roughages were treated with the different source of protein therefore the objectives of this experiment were to

1- Determine the level of urea-N which could effectively replace true protein-N without depressing fermentation by ruminal microbes

2- Determine the effect of different protein sources on fiber digestion of the substrates.

3- Determine the level of nitrogen which increasing the digestion and ruminal microbial growth.

4- Determine the effect of these factors with pure cellulose.