NUTRITIONAL STUDIES ON GREEN FORAGE

By

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A thesis submitted in partial fulfillment
of
the requirements for the degree of

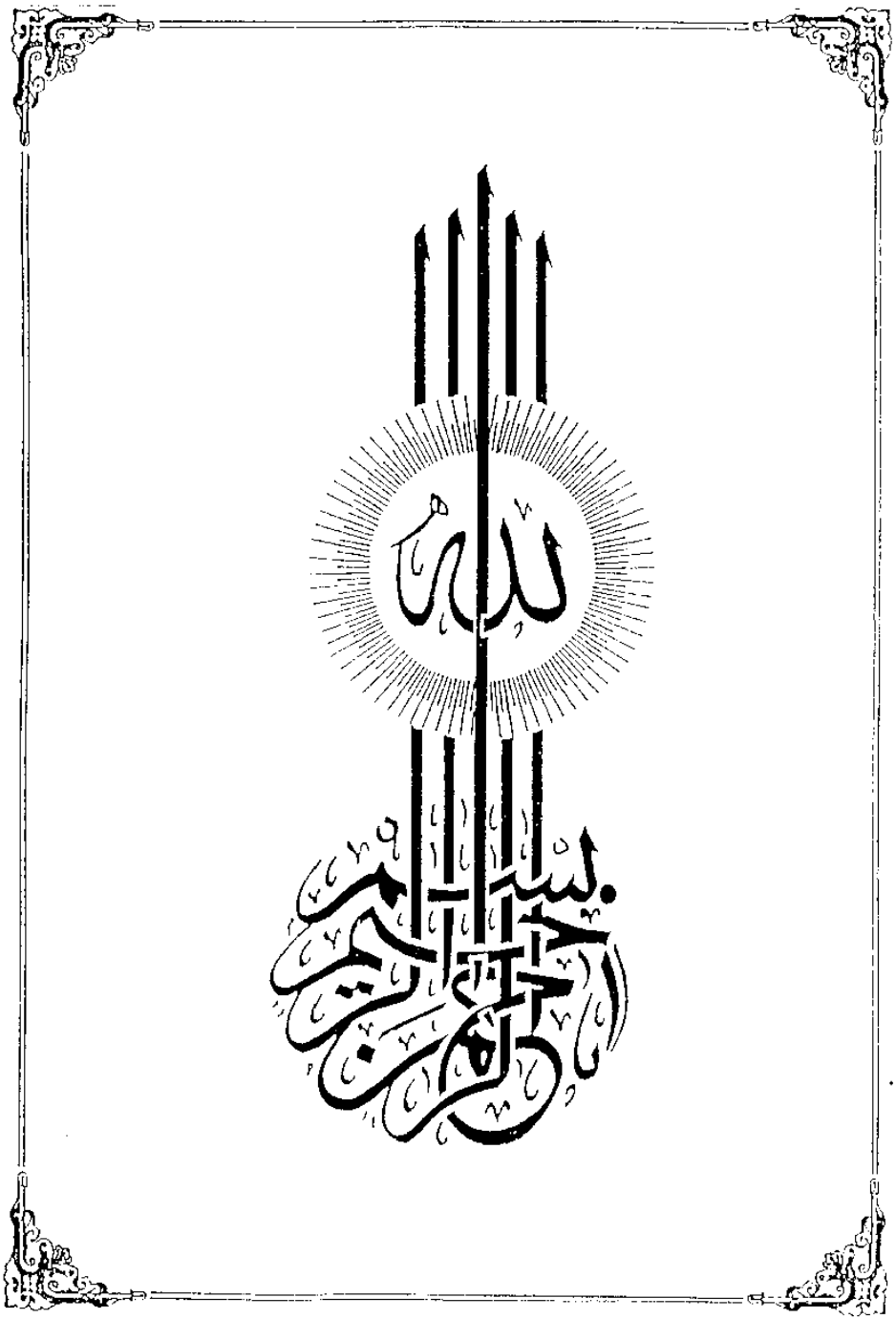
DOCTOR OF PHILOSOPHY

in

Agricultural science
(Animal Nutrition)

Department of Animal Production
Faculty of Agriculture
Ain Shams University
Cairo - Egypt

1996



APPROVAL SHEET

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ABSTRACT

Mostafa Hussein Ahmad Talha, Nutritional studies on green forage. Unpublished Ph. D. Of Science, University of Ain Ahams, Faculty of Agriculture, Department of Animal Production, 1996.

Two In-situ and two growth performance and digestibility experiments were conducted to evaluate two agro-industrial by-products and study their effect on the performance of growing Frisian calves fed berseem in pure stand or mixed with ryegrass.

** First In-Situ trial aimed to study the effect of cotton seed oil refining by-product (black oil) at levels 0, 3, 6, 9, 12, 15 and 18% dietary dry matter on feed intake and rumen activity. The results showed that dry matter disappearance, ruminal pH, NH_3 concentrations decreased with increasing black oil level. Dry matter intake also decreased. This reduction was slight with 3% and 6% but great with higher black oil levels.

** Second In-Situ trial aimed to study the effect of sun dried potato processing by-product (SDPPB) at levels 0, 10, 20, 30 and 40% of dietary dry matter on rumen activity and feed intake. The results showed that dry matter disappearance, NH_3 concentrations significantly decreased with increasing SDPPB levels. Ruminal pH, tended to decrease with increasing SDPPB levels.

** According to the results of the first In-Situ trial, The 9% black oil has been selected to test its effect on nutrients digestibility and growth performance of growing Frisian calves fed the following experimental diets:-

1) Berseem + processed feed (concentrate mixture).
2) Berseem + processed feed supplemented with 9% black oil.
3) Berseem/ ryegrass mixture + processed feed.
4) Berseem/ ryegrass mixture + processed feed supplemented with 9% black oil.

The results showed that there were no significant ($P<0.05$) differences among the four diets with regard to gain and nutrients digestibility. Black oil improved feed efficiency for calves fed supplemented diets.

According to the results of second In-Situ trial 10% and 20% SDPPB levels have been selected to study their effects on nutrients digestibility, growth performance and carcass characteristics of fattening Ferisian calves fed the following diets:-

1) Berseem + processed feed. (Control)
2) Berseem + processed feed. Supplemented with 10% SDPPB.
3) Berseem + processed feed. Supplemented with 20% SDPPB.

The results revealed that supplementing with SDPPB tended to increase daily gains. Moreover, SDPPB improved feed efficiency for calves fed supplemented diets. Feeding SDPPB had no significant effect on nutrients digestibility, dressing percentage or meat composition.

It may be concluded that black oil and sun dried potato processing by-product could be used as a good source of energy supplement of ruminants fed berseem in pure stand or mixed with ryegrass.

Key words: Ruminant, Egyptian clover, oil, potato, In-Situ, digestibility, growth, cattle, calves.

ACKNOWLEDGMENT

I would like to express my profound gratitude to Prof. Dr. H. S. Soliman, professor of animal nutrition, animal production department, Faculty of agriculture, Ain Shams University, for his continuos assistance, encouragement guidance and supervising this work. Thanks to Prof. Dr. S. A. Ibrahim. professor of animal nutrition, Animal production institute, Agricultural Research Center. Ministry of Agriculture for continuos assistance, encouragement and supervising this work. Thanks to Dr. S. M. Hamdy associate professor of animal nutrition, animal production department, Faculty of agriculture, Ain Shams University, for the continuos encouragement and the great technical help, through out this work.

Thanks also to the staff of El-Gemmaza Animal production Research Station and Animal production Research Institute, Agricultural Research Center. Ministry of Agriculture for providing the facilities in terms of animals , feeds, labours and technical support.

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