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التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

USING PLANTS AND PLANT EXTRACTS AS MODIFIERES OF RUMEN FERMENTATION PROCESS IN LACTATING ANIMALS RATION

By

NADIA AHMED HUSSEIN SELIM
B.Sc. Agric. Sc. (Animal Production), Faculty of Agriculture, Cairo University, 1999
M.Sc. Agric. Sc. (Animal Production Department), Faculty of Agriculture, Cairo University, 2007

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Approval Sheet

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ABSTRACT

Nadia Ahmed Hussein Selim. Using plants and plant extracts as modifiers of rumen fermentation process in lactating animals ration. Unpublished of Ph.D. Thesis. Department of Animal Production, Faculty of Agriculture, University Ain Shams. 2022

The aim of this study was to investigate the effect of using two medicinal plants namely Marjoram (Origanummajorana L.) and Basil (Ocimumbasilicum L.) as a natural feed additives in dairy goats diets on lactiting animal production performance (quantity and quality).

This study included two experiments, the first experiment was designed to detect the effect of using five levels of the leaves and essential oils of Marjoram or Basil as a natural feed additive on ruminal fermentation, total gas production, ammonia nitrogen concentration, dry matter and cell wall contents (NDF and ADF) digestibility. Eleven experimental groups were used by In vitro batch culture technique. The basal diet be composed of 50% CFM, 50% alfalfa (control).The experimental treatments was control diet plus 5, 10, 15, 20 and 25 g or ml of Marjoram and Basil (powder or oil) / kg DM respectively. And the second experiment was to study the effect of adding basil or marjoram oils in rations as feed additives in rations of 30 Damascus goats on feed intake, nutrient digestibility, some parameters of blood or milk. The experimental treatments were: 50% CFM, 30% berseem clover, 20% rise straw (control), control diet plus 20 ml of Basil oil or Marjoram oil / kg DM.

The results indicated that there is no significant difference ($P>0.05$) between Marjoram or Basil leaves powder or oils in pH value, NDF digestibility and ADF digestibility at all different levels. Control group recorded highest value (35.51 mmol) in ammonia nitrogen concentrations compared with all treatments which showed insignificant decreased. The values of gas production decreased significantly ($P<0.05$) by adding Marjoram oils to diets versus control which recorded the highest value (128

ml). Dry matter degradability (DMD) showed significant increase ($P<0.05$) compared with the control group. The values of milk yield increased significantly ($P<0.05$) compared with the control group. From here we concluded that supplementation of Basil oils to diets had negative influence on ruminal fermentation parameters (short chain fatty acids (SCFAs), ammonia-N and total gas production). The Marjoram oil showed significantly superior on DM degradability, reduction total gas production, milk yield, fat corrected milk (FCM) 4% and energy corrected milk (ECM) compared to the Basil oil.

Keywords: Essential oil, Marjoram, Basil, Digestibility and Rumen Fermentation

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LIST OF ABBREVIATION

ADF	Acid-Detergent Fiber
ALT	Alanin Amino Transferase (GPT)
(A/G ratio)	Albumin / Globulin ratio
AST	Aspartate Amino Transferase (GOT)
CFM	Concentrated Feed Mixture
CP	Crude Protein
DM	Dry Matter
DMD	Dry Matter Digestibility
DMI	Dry Matter Intake
ECM	Energy Corrected Milk
EO	Essential Oil
EE	Ether Extract
FCM	Fat Corrected Milk
HAP	Hyper- Ammonia producing
MEO	Mixture of essential oils
MUN	Milk Urea Nitrogen
NDF	Neutral-Detergent Fiber
NFC	Non Fiber Carbohydrate
OM	Organic Matter
GOT	Serum Glutamic-Oxaloacetate Transaminase
GPT	Serum Glutamic-Pyruvate Transaminase
SCFA	Short Chain Fatty Acid
SNF	Solid Not Fat
TGP	Total Gas Production
TMR	Total Mixed Ration
TS	Total Solid
VFA	Volatile Fatty Acid