Cairo University
Faculty of Veterinary Medicine
Department of Medicine and Infectious Diseases

Effect of Ginger and Thyme on Lung Function Test, Rumen fluid and Blood Constituents in Sheep

Thesis presented by

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(B.V.Sc. 2017, Faculty of Veterinary Medicine, Cairo University)

(For the Master degree in Internal Medicine)

Under supervision of

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Dept. of Medicine & Infectious Diseases

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APPROVAL SHEET

This is to approve that the dissertation presented by candidate: Mariam Gamal Gaid Zaki, to Cairo University entitled:

"Effect of Ginger and Thyme on lung function test, rumen fluid and blood constituents in sheep"

For the Master degree of (Internal Medicine) has been approved.
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Date: 7 /12 / 2020

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SUPERVISION SHEET

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ABSTRACT

The present study was aimed to investigate normal acid-base balance, rumen, hematological, and serum biochemical parameters in apparently healthy Egyptian Ossimi sheep to be used as guideline in diagnosis of respiratory diseases in sheep, and study the effect of Ginger, Thyme and a mixture of them (1:1) respectively on acid-base balance, rumen (physical, cellular, biochemical constituents), and blood cellular and biochemical constituents to investigate the ability of further using these herbals as supportive treatment in correction of respiratory disfunction in sheep. The study carried out on 30 Egyptian clinically healthy non pregnant Ossimi ewes. Their ages ranged between 2-4 years, and their bodyweights ranged from 30 to 40kg.

Ewes devided into three groups (10 ewes in each): first group was given ginger powder (500mg/kg bwt) orally before feeding for 5 days; second group was given thyme powder (500mg /kg body bwt) orally before feeding for 5 days; third group was given ginger and thyme powder mixture (250mg/kg:250 mg/kg bwt) orally before feeding for 5 days. Samples were taken on 0, 3rd , and 5th day of the experiment in the morning before feeding. To determine the effect of mixture on rumen fermentation pattern samples were taken at 0, 2, 4, 6, and 8 hour after taking of the mixture in comparison with zero day (control) at the same hours.

Results showed that ginger powder made significant increase in rumen fluid pH, WBCS, lymphocytes, MCH and MCHC and significant decrease in total VFAs, serum total protein and globulin, while it maintained acid-base balance and other blood and rumen constituents within normal range. Thyme made significant increases in blood pH, bicarbonate, base excess, rumen fluid pH, WBCs, lymphocytes, MCH and MCHC, and significant decrease in total VFAs,TPC, and total serum protein. On the other hand, thyme maintained other blood and rumen constituents within normal range. Ginger and thyme powder mixture (1:1) did not make significant changes in rumen fermentation pattern between hours of sampling, while by days it caused significant increase in AST, and significant decrease in total VFAs, hemoglobin, and total protein. Ginger and thyme mixture powder maintained all other parameters of rumen and blood constituents.

Concerning changes in these parameters we can recommend using of last mentioned herbals supplementations as (500mg/kg bwt) orally for 5 days as supportive treatment in correction of respiratory dysfunctions, treatment of rumen and metabolic acidosis, and maintenance of normal rumen functions in sheep. Further investigation should be applied on diseased cases to confirm the effect of them in such cases.

Keywords: Sheep, *Thymus vulgaris*, *Zingiber officinale*, Powder mixture, Acid-base balance, Rumen and Blood constituents.

DEDICATION

I like to dedicate this work to my dear father, mother, my sister, and loosa my little turtle who always encouraged and supported me.

Thank you for everything.

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