

**THE INFLUENCE OF FORAGE LEGUMES ON ANNUAL FODDER GRASSES
IN DIFFERENT INTERCROPPING SYSTEMS IN THE LIMPOPO PROVINCE**

A DISSERTATION

**SUBMITTED TO THE SCHOOL OF AGRICULTURE AND ENVIRONMENTAL
SCIENCES OF THE UNIVERSITY OF THE NORTH**

BY

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**IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE
MASTER OF AGRICULTURAL MANAGEMENT**

NOVEMBER, 2004

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DECLARATION

I here by declare that the work herein submitted as dissertation for the degree Master of Agricultural Management. I assert that this is the results of my own investigation, and that it has neither wholly nor partially been presented as dissertation for the degree in this University or elsewhere. Work by other authors, which served as sources of information, has duly been acknowledged by way of in-text referencing and bibliography.

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ACKNOWLEDGMENTS

Firstly I would like to thank God the Redeemer for all He has done for me until completion of this study. Without limits, thanks are extended to my supervisor Prof. Chris S Dannhauser for his ever-ready advises, guidance, patience and encouragement from implementation of the project till the production of this thesis.

Lastly I would like to pass my sincere gratitude to all my co-students and University drivers, not forgetting students from Tompi Seleka Agricultural College and Mashamba N. R. for help they gave to me in the field. Gratitude is also expressed to my former supervisor Prof. Kingsley K Ayisi for the statistical advice.

DEDICATION

This paper is dedicated to the following: My elder sister and her husband, Mr. & Ms I. Manyekoane, my parents Phineas Moroko and Johanna Moloko, all my siblings, more especially my younger sister Ms Manoko Annitjie, my grandmother Mosibudi Seemola and her son James Matome. I do thank all of you for both the moral and financial support you gave me towards the completion of both my junior and Honours degrees and this study. To my wife Duduzile Constance Petunia, and my relatives, not forgetting my role model and brother in law Mr. Phuphuti Maputla and his wife Phuti Annesia; who in any way made a mark in my studies. I couldn't climb the recent ladder without you guys; I do thank you all.

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THE INFLUENCE OF FORAGE LEGUMES AND NITROGEN FERTILIZATION ON ANNUAL FODDER GRASSES, IN DIFFERENT INTERCROPPING SYSTEMS IN THE LIMPOPO PROVINCE

ABSTRACT

*Identification of annual grass/legume intercropping or mixtures with superior nutrient traits and Dry matter (DM) production is critical to increasing productivity of the crop and animal production among small-scale farmers in the Limpopo Province. Three similar field experiments were established at different locations in the Province to determine the significance of the contribution of annual summer legumes, and cutting treatments on the nutritive value and dry matter accumulation of the popular forage sorghum (*Sorghum* spp) and pearl millet (*Pennisetum glaucum*) intercropped with cowpea (*Vigna unguiculata*) and dolichos (*Lablab purpureus*). The cropping systems evaluated were sole sorghum, sole pearl millet, sorghum + cowpea, sorghum + dolichos, pearl millet + cowpea and pearl millet + dolichos. The treatments sole sorghum and pearl millet significantly ($P \leq 0.05$) outperformed the other treatments in terms of DM production at most cutting stages. The remaining four treatments though, inferior in DM in this study, yielded better than the average yield on farmers' fields in the Province. Higher protein content was obtained in mixtures than in sole cropping, and generally there was lower protein production and content at matured stages (CT3) in the study. The other chemical composition analyzed in the study was not significant for both mixtures and sole cultures.*

Keywords: Annual grasses, annual legumes, cropping systems, dry matter intercropping and protein,