# A SURVEY OF THE PERFORMANCE OF FRIESIAN CROSSES SUPPLIED UNDER NAADS IN SOROTI DISTRICT

#### **ADAKU JOHN ROBERT**

BU/UG/2010/187



# A DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND ANIMAL SCIENCES IN PARTIAL FULLFILMENT OF REQUIREMENTS FOR AWARD OF THE DEGREE OF BACHELOR OF ANIMAL PRODUCTION AND MANAGEMENT OF BUSITEMA UNIVERSITY

MAY, 2013

#### DECLARATION

I, ADAKU JOHN ROBERT, declare that this is my own work and has never been submitted to any university or institution of higher learning for the award of any kind by any person.

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Signature	- Autor Du
Date	A Aslog/2013

This dissertation has been submitted for examination with the approval of my supervisor:

Dr. Ekou Justine (BVM, MSc, Cert.PAM, Cert. Admin.Law),

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Lecturer, Department of Animal Production and Management,

Busitema University.	6	5
Signature	Char	Norm
Date	2309	2013

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#### ACKNOWLEDMENT

With great pleasure, I wish to extend my sincere thanks to all the staff of Busitema University, Arapai Campus and especially the lecturers of APM for having diligently lectured us from year one up to year thee. More special thanks go to my supervisor, DR. Ekou Justine, and who has tirelessly mentored me throughout this hectic period of research and dissertation writing. More special thanks go to my examiner, Dr Oluge Christopher for his input towards the production of the final copy of this book.

I wish to recognize everybody whose name has not mentioned in this text who in one way or another has taken part in this struggle that your contribution and kindness has been of great value to me throughout this stressful period of research proposal writing. Please may GOD the Almighty bless you abundantly.

## TABLE OF CONTENT

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التر

### Page

DECLARATIONi
ACKNOWLEDMENTii
LIST OF ABREVIATIONS
LIST OF TABLES
LIST OF FIGURESvii
ABSTRACTviii
CHAPTER ONE: INTRODUCTION
1.1. Background1
1.2. Problem statement
1.3. Objectives
1.3.1. Overall objective
1.3.2. Specific objectives
1.4 Justification
1.5. Research questions
1.6. Significance of the research
1.7. Scope of the study
CHAPTER TWO: LITERATURE REVIEW
2.1. The milk yield per lactation of Friesian crosses
2.2. Calving interval
2.3. Number of Services per Conception (NSPC) or conception rate
CHAPTER THREE: METHODS AND MATERIALS
3.1. Description of Study area
3.2. Study design
3.3. Sampling design/population sampling
33.1 Sample determination
3.3.2. Sampling strategies
3.4. Data collection
3.4. Data analysis/ Statistical design
3.5. Operational design
3.6. Ethical consideration
3.7. Environmental issues

4.1. Livestock productivity
4.1.1 Milk production
4.1.2. Feeding methods
4.1.3, Supplementation feeding
4.2. Mating and calving interval
4.3. Number of services per conception
4.4. Social economic characteristics
4.4.1 Household heads
4.4.2. Household occupation
4.4.3. Household marital status
4.4.4 household Basic training attained
4.5. Focus group discussion
CHAPTER FIVE: DISCUSSION OF RESULTS
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS
6.2. Recommendations
REFERNCES
APPENDIX 1
A QUESTIONNAIRE

۶,

•

### LIST OF ABREVIATIONS

AI:	Artificial Insemination.
CBFs:	Community Based Facilitators.
CI:	Calving Interval
F1:	first filial generation.
GDP:	Gross Domestic Product.
NAADS:	National Agricultural Advisory Services.
NGOs:	Non Governmental Organizations.
NSPC:	Number of Services per Conception.
NUSAF:	Northern Uganda Social Action Fund.
PPCs:	Parish procurement committees.
SFF:	Sub county farmer Forum.
SMS:	Subject Matter Specialist
SPSS:	Statistical Package for Social Scientists
UBOS:	Uganda Bureau of Statistics.

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### LIST OF TABLES

### Page

Table 1: Daily milking frequency	10
Table 2: Daily milk production,	11
Table 3: methods used for feeding	12
Table 4: months taken to produce the next calf	13
Table 5: Household heads	14
Table 6: Household occupation	15

. 2 .

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### LIST OF FIGURES

	Page
Figure 1: Milking regimes	10
Figure 2: Number of litres milked per days	11
Figure 3: Level of supplementation	12
Figure 4: Methods of mating used by respondest/farmers	13
Figure 5: Number of services per conception	14
Figure 6: Household marital status	15
Figure 7: Household basic training	16

è i

#### ABSTRACT

Livestock contributes tremendously to the livelihood of the poor small holder peasant farmers in soroti district. The livestock production system in Teso are characteristic of breeds with poor productive and reproductive performance-the zebu, high vector and disease incidence, poor grazing and feeding systems, poor housing and hostile environmental temperatures .As a result, poverty is still pronounced and it is a challenge among these livestock keeping rural communities. The government has put a lot of interventions to eradicate poverty through the introduction of improved technologies like the Friesian crosses with high milk yield potential aimed at increasing the household income. This study there assesses the performance of the Friesian crosses supplied to the farmers in the selected sub counties in Soroti district. The performance traits under study were; daily milk yield, the calving interval and the number of services per conception. The sample frame was the beneficiary groups and the sample size of 97 respondents was determined by Thrusfield (1995) equation at a 95% confidence level. The primary data was obtained by use of structured questionnaires, focus group discussions, personal observation and NAADS records at the subcounty and farmer groups provided the secondary data. Statistical tool (SPSS) was used to analyze the data. The results were presented in graphs, charts and tables of frequencies and percentages and descriptive statistics was used to interpret the data. The results showed that the mean daily lactation yield of was10 litres, the average number of SPC was observed at 3.0 and the population mean calving interval of 15. months. The results on the key performance traits showed that; the milk yield of Friesian crosses under local environmental and management conditions is low, with a high calving interval and a low conception rate. Generally the performance is of the Friesian crosses is low and thus, Proper management of the animals through various phases of animals' life from birth to maturity ensures its outstanding performance: early age of service and maturity, better conceivability, a lower calving interval and high milk production

#### CHAPTER ONE: INTRODUCTION

#### 1.1. Background

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Globally, Cattle and other livestock keeping contribute to the livelihood sustainability and social security of more than 800 million poor small holder farmers. It is estimated that 900 million of the world's 1.3 billion people living rural areas live in abject poverty relying on agriculture for their food and income (IFAD, 2010) yet it is believed that livestock plays a very important role in changing the livelihoods of the rural farmers especially through ensuring proper selection, proper feeding/ feed availability, vector and disease management, and agro- ecological zoning (Ellis *et al*, 2001).

According to the researches conducted by (Rahman *et al.*, 2008) and (Valentine, 1998), in sub-Saharan Africa, the performance of livestock for the past decades has been disappointing. By 2004, the total cow milk production in Africa accounted for only a fifth of the world's average milk production. (Ndambi, 2007). This low milk production is due to the low productivity of the indigenous breeds which accounts for over 90% of the sub Saharan cow herd population coupled with poor traditional production systems. (Olaloku *et al.* 1992).

In East Africa, traditional systems together with their indigenous breeds dominate milk production and in Uganda, Agricultural sector contributes 48% of GDP supporting 85% of the rural population. Livestock keeping is majorly concentrated in the 29 districts in the cattle corridor. The cattle corridor which runs southwest to northeast across Uganda and this contributes 7.5% of GDP and 17% of agricultural GDP.

In Uganda, 92.7% of the house hold own indigenous cattle and 10% exotic dairy or cross breeds. The cattle population in soroti for the past years has been consisting of local breeds which are characterized by the local Zebu and to a lesser extent the Boran breed (IFAD, 2010). The government and other development partners have therefore intervened in the poverty recovery programs through provision of improved livestock dairy technologies especially the Friesian breeds with outstanding milk yielding traits (Opondo, 2002, MAAIF and MFPED. 2000) to boost milk production and household income as a whole

The purpose of this study is to evaluate performance of Friesians supplied under NAADS in the selected three sub counties of Gweri, in Soroti district. The performance parameters under the

#### REFERNCES

Henninger and Lansbury. (2010). Mapping a Better Future: Spatial Analysis and Pro-Poor Livestock Strategies in Uganda. ministry of Agriculture, Animal Industry and Fisheries, Uganda, Uganda Bureau of Statistics, Food and Agriculture Organization of the United Nations, and the International Livestock Research Institute

Mbuza, F. M. B., (1991). A Systems Analysis of Milk Production Systems in Uganda and Prospects for Technological Change. Ph.D. Thesis, Australia, University of Melbourne, 3: 23-56

Otim, C.P., (2000) Advances in disease control: Ticks and tick-borne diseases. Uganda, Journal of Agricultural Science, 5: 79 - 85.

Ocaido, M., C.P., Otim and Kakaire, D., (1996). Impact of major Diseases and vectors in small holder cattle production systems in different agro ecological zone and farming systems in Uganda. Department of wildlife and animal resources, Faculty of veterinary medicine, Makerere University. Po box 7062, Kampala, Uganda.

Vaccaro, L., Garcia, M., Bazan, O. and Bardales, E., (1977). Fertility and body weight at first mating of zebu cattle grazing cleared jungle land in the Amazon. Tropical Agriculture; 54: 223-227.

Kiwuwa, G.H., Trail, J.C.M., Kurtu, M.Y., Worku ,G., Anderson F. M., And Durkin ,J., (1983). Crossbred dairy cattle productivity in Arsi region, Ethiopia (Research report No. 11, ILCA, Addis Ababa, Ethiopia); **36**:1–29

Madalena, F.E., Lemos, A.M., Teodoro, R. L., Barbosa, R. T., and Monteiro, J.B.N., (1990) Dairy production and reproduction in Holstein-Friesian and Guzera crosses. Journal of Dairy Science 73: 1872–1886

Ellias, P. S, Patrick., Birungi ,B., and Haan, N., (FAO 2009). The role of poultry in peoples livelihoods in Uganda. AHBL - Promoting strategies for prevention and Control of HPAI. Rome.

Shekimweri ,T .J M., (1982). A comparison study of dairy cattle crosses in the humid coastal belt of Tanzania. MSc thesis, University of Dar es Salaam, Dar es Salaam, Tanzania.

Tadesse, M., Thiangthan, J., pinyopummin, A., and Sprasanpanid., (2003).productive and reproductive performance of Friesian dairy cows in Ethiopia;17:123-146

Mwebaze Sandra, M.N., (1999). Country pasture/forage resource profile, (FAO) department of animal production and marketing. MAAIF. Entebbe.

Katyega, J. P. M., (1988) .Performance of Jerseys on the slopes of Mount Meru. World Animal Review 65: 24-30.

Byarugaba, D., (2007). The structure and importance of the commercial and village based Poultry systems in Uganda, Kampala, FAO. (Consultancy report)

UBOS., (2008). Livestock census report, ministry of Agriculture, animal industry and fisheries Entebbe, Uganda.

MWLE., (2007). Ministry of water Lands and Environment report. Republic of Uganda, Kampala, Uganda.

Egeru and Majaliwa M. G. J., (2009). Land use/cover changes trends in Soroti district, Eastern Uganda. Journal of applied sciences and environment management. 13(4) 77-79

Opondo, C., (2002). Progress report AHI-NAADS activity implementation in Rubaya sub county, Kabale district. Africa Highlands Initiative (AHI), a report submitted to NAADS. Kampala, Uganda.

Thorpe, W., Muruiki, H.G., Omore, A., Owango ,M.O., and Staal ,S., (2000). Development of small holder dairying in East Africa with particular reference to Kenya. International Livestock Research Institute, PO BOX 30709, Nairobi, Kenya.

Ndambi, O.A., Hemman, T., and Lataez lohman., (2007). Dairying in East Africa –status and research developments. IFCND, Dairy Research centre at the department of Agricultural Economics, University of Keel 1162418 keel- Germany.

Olaloku, D., (1992). Research priorities for the development of appropriate feeding systems for dairy production in the sub-Saharan Africa. In stores, J.said A. and Ketegile: The complimentarity of the feed resources for animal production in Africa, proceedings of the joint Feed Resources Network workshop, Botswana.

MAAIF, (Ministry of Agriculture, Animal Industry and Fisheries) and MFPED. (Ministry of Finance, Planning and Economic development)., (2000). Plan for Modernization of Agriculture: Eradicating poverty in Uganda, Entebbe, MAAIF, Kampala: MFPED.

IFPRI.,(2007). Assessing the impact of NAADS in Uganda's rural livelihoods, IFPRI (International Food Policy Research Institute) discussion paper 00724, 2033 K Street, NW, Washington DC 20006-1002, USA.

World Bank, (2009). Uganda dairy milk supply chain: A World Bank Strategy for Sub-Saharan Africa.

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